



Commercial Nitrogen and Manure Applications on Minnesota's 2012 Corn Crop Compared to the University of Minnesota Nitrogen Guidelines

A companion report to the Commercial Nitrogen and Manure Fertilizer Selection and Management Practices with Minnesota's 2012 Corn Crop

Minnesota Department of Agriculture
USDA, NASS, Minnesota Field Office



**625 Robert Street North St. Paul, MN 55155-2538 651-201-6000 1-800-967-AGRI
www.mda.state.mn.us**

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For information regarding this report contact:
 Denton Bruening
 Minnesota Department of Agriculture
 Pesticide and Fertilizer Management Division
 651-201-6399

Contents

Commercial Nitrogen and Manure Applications on Minnesota’s 2012 Corn Crop Compared to the University of Minnesota Nitrogen Guidelines	1
Introduction	29
Survey Design and Implementation	30
2012 Commercial Nitrogen and Manure Use Practices Summary and Highlights	31
Statewide Commercial Fertilizer Nitrogen and Manure Applications and Management on Corn	32
Analysis of Nitrogen Fertilizer Rate by Variable and Non-variable Rate Application.....	47
Statewide: Corn Following Soybeans	48
Statewide: Corn Following Corn.....	72
Statewide: Corn Following Corn Following Alfalfa.....	96
Statewide: Corn Following Alfalfa	116
Statewide: Corn Following Small Grains.....	134
Analysis of Nitrogen Fertilizer Rate by Yields	149
Statewide: Corn Following Soybeans	150
Statewide: Corn Following Corn.....	167
Statewide: Corn Following Corn Following Alfalfa.....	183
Statewide: Corn Following Alfalfa	195
Statewide: Corn Following Small Grains.....	204
Analysis of Nitrogen Rate Applications on Manured Corn Acres	209
Manure Applications from All Sources.....	210
Manure Applications from Dairy Manure.....	259
Manure Applications from Beef Manure	294
Manure Applications from Hog Manure	311
Manure Applications from Poultry Manure	338
Use of Nitrogen Survey Data by Other Agencies	354

List of Tables

Table 1. Statewide summary of respondents and corresponding corn acres by county and BMP region with and without manure.....	32
Table 2. Statewide summary of respondents and corresponding corn acres by county and BMP region for all corn fields without manure.....	35
Table 3. Percent of respondents with a corn field without manure applied.	37
Table 4. Percent of acres by previous crop and the corresponding yields.	38
Table 5. Commercial fertilizer applications applied to non-manured corn fields.....	39
Table 6. Variable rate nitrogen applications by BMP region.....	40
Table 7. Nitrogen rates and average yields by BMP region.....	41

Table 8. Average amount of nitrogen applied and corresponding yield by BMP region and previous crop.	42
Table 9. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.	49
Table 10. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in Minnesota.	50
Table 11. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in Minnesota.	51
Table 12. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	53
Table 13. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	54
Table 14. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	55
Table 15. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	57
Table 16. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	58
Table 17. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	59
Table 18. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	61
Table 19. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	62
Table 20. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	63
Table 21. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	65
Table 22. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	66
Table 23. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	67
Table 24. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	69
Table 25. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	70
Table 26. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	71
Table 27. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.	73
Table 28. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in Minnesota.	74
Table 29. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in Minnesota.	75
Table 30. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	77

Table 31. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	78
Table 32. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	79
Table 33. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	81
Table 34. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	82
Table 35. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	83
Table 36. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	85
Table 37. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	86
Table 38. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	87
Table 39. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	89
Table 40. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	90
Table 41. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the NW BMP region.	91
Table 42. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	93
Table 43. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	94
Table 44. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	95
Table 45. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.	97
Table 46. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in Minnesota.	98
Table 47. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in Minnesota.	99
Table 48. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	101
Table 49. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	102
Table 50. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	103
Table 51. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	105

Table 52. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	106
Table 53. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	107
Table 54. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	109
Table 55. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	110
Table 56. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	113
Table 57. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	114
Table 58. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	115
Table 59. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in in Minnesota.	117
Table 60. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in Minnesota.	118
Table 61. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in Minnesota.	119
Table 62. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	121
Table 63. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.	122
Table 64. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	124
Table 65. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.	125
Table 66. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	127
Table 67. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.	128
Table 68. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region. ...	131
Table 69. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	132
Table 70. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.	133
Table 71. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.	135

Table 72. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in Minnesota.	136
Table 73. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2012 crop year in Minnesota.	137
Table 74. Nitrogen fertilizer rates and associated corn yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.....	140
Table 75. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region. ...	142
Table 76. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.....	143
Table 77. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2012 crop year in the NW BMP region.....	144
Table 78. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region. ...	146
Table 79. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.....	147
Table 80. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.....	148
Table 81. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.	150
Table 82. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.	151
Table 83. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.	152
Table 84. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.....	153
Table 85. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region....	154
Table 86. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region...	155
Table 87. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.....	156
Table 88. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region....	157
Table 89. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region. .	158
Table 90. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.	159
Table 91. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region. .	160
Table 92. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SW BMP region.	161
Table 93. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.....	162

Table 94. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in NW BMP region. .	163
Table 95. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.	164
Table 96. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region. .	165
Table 97. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the IRR BMP region.	166
Table 98. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.	167
Table 99. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.	168
Table 100. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.	169
Table 101. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.	170
Table 102. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region. ...	171
Table 103. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region. ...	172
Table 104. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.	173
Table 105. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region.	174
Table 106. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region. .	175
Table 107. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.	176
Table 108. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region. .	177
Table 109. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SW BMP region.	178
Table 110. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.	179
Table 111. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.	180
Table 112. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region. .	181
Table 113. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the IRR BMP region.	182
Table 114. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.	183
Table 115. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.	184

Table 116. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.	185
Table 117. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.	186
Table 118. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region.	187
Table 119. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region.	188
Table 120. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region.	189
Table 121. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region.	190
Table 122. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.	191
Table 123. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region.	192
Table 124. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.	194
Table 125. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.	195
Table 126. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.	196
Table 127. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.	197
Table 128. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region. ...	198
Table 129. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.	199
Table 130. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.	200
Table 131. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.	202
Table 132. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region. .	203
Table 133. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.	204

Table 134. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota. .	205
Table 135. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.	207
Table 136. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.	208
Table 137. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	210
Table 138. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	211
Table 139. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	212
Table 140. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	213
Table 141. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	214
Table 142. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	215
Table 143. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	216
Table 144. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	217
Table 145. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	218
Table 146. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	219
Table 147. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	220
Table 148. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	222
Table 149. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	223
Table 150. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	224
Table 151. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	225
Table 152. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	226

Table 153. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	227
Table 154. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SE BMP region.	228
Table 155. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.	229
Table 156. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.	230
Table 157. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.	231
Table 158. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.	232
Table 159. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.	233
Table 160. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.	234
Table 161. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the IRR BMP region.	236
Table 162. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the IRR BMP region.	237
Table 163. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota	238
Table 164. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	239
Table 165. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	240
Table 166. Nitrogen rates and associated yields of corn following corn following alfalfa fields applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	241
Table 167. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	242
Table 168. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	244
Table 169. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	246

Table 170. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	247
Table 171. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	248
Table 172. Nitrogen rates and associated yields for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	249
Table 173. Nitrogen rates and associated yields for corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	250
Table 174. Nitrogen rates and associated yields for corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	251
Table 175. Nitrogen rates and associated yields for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	254
Table 176. Nitrogen rates and associated yields for corn following small grains applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	256
Table 177. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	259
Table 178. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	260
Table 179. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	261
Table 180. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SC BMP region.	263
Table 181. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	265
Table 182. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region. ...	266
Table 183. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	267
Table 184. Nitrogen rates and associated yields for corn following corn applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	268
Table 185. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	269
Table 186. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.	270
Table 187. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.	271

Table 188. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SW BMP region.	273
Table 189. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SW BMP region.	274
Table 190. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	276
Table 191. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	277
Table 192. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	278
Table 193. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	279
Table 194. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	280
Table 195. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.	281
Table 196. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.	282
Table 197. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	284
Table 198. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	285
Table 199. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.	286
Table 200. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	287
Table 201. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	288
Table 202. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	289
Table 203. Nitrogen rates and associated yields for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	294
Table 204. Nitrogen rates and associated yields for corn following soybeans applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	295

Table 205. Nitrogen rates and associated yields for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	298
Table 206. Nitrogen rates and associated yields for corn following corn applied with beef manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	299
Table 207. Nitrogen rates and associated yields for corn following corn applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	300
Table 208. Nitrogen rates and associated yields for corn following corn following alfalfa applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	303
Table 209. Nitrogen rates and associated yields for corn following corn following alfalfa applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	304
Table 210. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	311
Table 211. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	312
Table 212. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	313
Table 213. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	315
Table 214. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	316
Table 215. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	317
Table 216. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	318
Table 217. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	319
Table 218. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	320
Table 219. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	322
Table 220. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	323
Table 221. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	324
Table 222. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	326
Table 223. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	327

Table 224. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.	328
Table 225. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	329
Table 226. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.	330
Table 227. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	338
Table 228. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota. ...	339
Table 229. Nitrogen rates and associated yields for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	342
Table 230. Nitrogen rates and associated yields for corn following corn applied with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.	343
Table 231. Nitrogen rates and associated yields for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.	345
Table 232. Nitrogen rates and associated yields for corn following corn applied with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region. ...	347

List of Figures

Figure 1. Minnesota nitrogen BMP regions.	30
Figure 2. An example of analysis for the U of M recommended nitrogen application rate and ranges of nitrogen compared to farm field nitrogen rates.	44
Figure 3. The corn yield averaged 162 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre on fields with corn following soybeans in Minnesota.	48
Figure 4. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in Minnesota for 2012: 912 fields.	49
Figure 5. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in Minnesota for 2012: 550 fields.	50
Figure 6. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in Minnesota for 2012: 362 fields.	51
Figure 7. The corn yield averaged 173 bushels per acre and the nitrogen fertilizer rate averaged 150 pounds per acre in the SE BMP region.	52
Figure 8. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SE BMP region for 2012: 94 fields.	53
Figure 9. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SE BMP region for 2012: 52 fields.	54

Figure 10. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SE BMP region for 2012: 42 fields.	55
Figure 11. The corn yield averaged 172 bushels per acre and the nitrogen fertilizer rate averaged 152 pounds per acre in the SC BMP region.	56
Figure 12. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SC BMP region for 2012: 285 fields.	57
Figure 13. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SC BMP region for 2012: 175 fields.	58
Figure 14. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SC BMP region for 2012: 110 fields.	59
Figure 15. The corn yield averaged 164 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre in the SW BMP region.	60
Figure 16. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SW BMP region for 2012: 326 fields.	61
Figure 17. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SW BMP region for 2012: 184 fields.	62
Figure 18. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SW BMP region for 2012: 142 fields.	63
Figure 19. The corn yield averaged 138 bushels per acre and the nitrogen fertilizer rate averaged 132 pounds per acre in the NW BMP region.	64
Figure 20. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the NW BMP region for 2012: 47 fields.	65
Figure 21. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the NW BMP region for 2012: 36 fields.	66
Figure 22. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the NW BMP region for 2012: 11 fields.	67
Figure 23. The corn yield averaged 143 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre in the IRR BMP region.	68
Figure 24. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 160 fields.	69
Figure 25. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the IRR BMP region for 2012: 103 fields.	70

Figure 26. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the IRR BMP region for 2012: 57 fields.	71
Figure 27. The corn yield averaged 164 bushels per acre and the nitrogen fertilizer rate averaged 160 pounds per acre on fields with corn following corn in Minnesota.	72
Figure 28. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in Minnesota for 2012: 589 fields.	73
Figure 29. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in Minnesota for 2012: 349 fields.	74
Figure 30. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in Minnesota for 2012: 240 fields.	75
Figure 31. The corn yield averaged 172 bushels per acre and the nitrogen fertilizer rate averaged 166 pounds per acre in the SE BMP region.	76
Figure 32. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SE BMP region for 2012: 70 fields.	77
Figure 33. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SE BMP region for 2012: 49 fields.	78
Figure 34. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SE BMP region for 2012: 21 fields.	79
Figure 35. The corn yield averaged 175 bushels per acre and the nitrogen fertilizer rate averaged 172 pounds per acre in the SC BMP region.	80
Figure 36. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SC BMP region for 2012: 185 fields.	81
Figure 37. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SC BMP region for 2012: 106 fields.	82
Figure 38. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SC BMP region for 2012: 79 fields.	83
Figure 39. The corn yield averaged 166 bushels per acre and the nitrogen fertilizer rate averaged 163 pounds per acre in the SW BMP region.	84
Figure 40. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SW BMP region for 2012: 178 fields.	85
Figure 41. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SW BMP region for 2012: 91 fields.	86
Figure 42. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SW BMP region for 2012: 87 fields.	87
Figure 43. The corn yield averaged 146 bushels per acre and the nitrogen fertilizer rate averaged 140 pounds per acre in the NW BMP region.	88
Figure 44. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the NW BMP region for 2012: 23 fields.	89

Figure 45. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the NW BMP region for 2012: 15 fields.	90
Figure 46. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the NW BMP region for 2012: 8 fields.	91
Figure 47. The corn yield averaged 144 bushels per acre and the nitrogen fertilizer rate averaged 139 pounds per acre in the IRR BMP region.	92
Figure 48. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 133 fields.	93
Figure 49. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the IRR BMP region for 2012: 88 fields.	94
Figure 50. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the IRR BMP region for 2012: 45 fields. ...	95
Figure 51. The corn yield averaged 157 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre on fields with corn following corn following alfalfa in Minnesota.	96
Figure 52. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2012: 89 fields.	97
Figure 53. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2012: 57 fields.	98
Figure 54. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2012: 32 fields.	99
Figure 55. The corn yield averaged 174 bushels per acre and the nitrogen fertilizer rate averaged 140 pounds per acre in the SE BMP region.	100
Figure 56. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2012: 30 fields.	101
Figure 57. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2012: 17 Fields.	102
Figure 58. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SE BMP region for 2012: 13 Fields.	103
Figure 59. The corn yield averaged 166 bushels per acre and the nitrogen fertilizer rate averaged 135 pounds per acre in the SC BMP region.	104
Figure 60. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SC BMP region for 2012: 15 fields.	105
Figure 61. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SC BMP region for 2012: 7 fields.	106

Figure 62. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SC BMP region for 2012: 8 fields.	107
Figure 63. The corn yield averaged 163 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre in the SW BMP region.	108
Figure 64. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2012: 14 fields.	109
Figure 65. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SW BMP region for 2012: 11 fields.	110
Figure 66. The corn yield averaged 132 bushels per acre and the nitrogen fertilizer rate averaged 115 pounds per acre in the IRR BMP region.	112
Figure 67. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 30 fields.	113
Figure 68. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2012: 22 fields.	114
Figure 69. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2012: 8 fields.	115
Figure 70. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 98 pounds per acre on fields with corn following alfalfa in Minnesota.	116
Figure 71. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2012: 52 fields.	117
Figure 72. Percentage of fields within U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2012: 41 fields.	118
Figure 73. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2012: 11 fields.	119
Figure 74. The corn yield averaged 159 bushels per acre and the nitrogen fertilizer rate averaged 106 pounds per acre in the SE BMP region.	120
Figure 75. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2012: 9 fields.	121
Figure 76. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2012: 7 fields.	122
Figure 77. The corn yield averaged 156 bushels per acre and the nitrogen fertilizer rate averaged 107 pounds per acre in the SC BMP region.	123
Figure 78. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SC BMP region for 2012: 8 fields.	124

Figure 79. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SC BMP region for 2012: 5 fields.	125
Figure 80. The corn yield averaged 144 bushels per acre and the nitrogen fertilizer rate averaged 119 pounds per acre in the SW BMP region.	126
Figure 81. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2012: 9 fields.	127
Figure 82. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SW BMP region for 2012: 8 fields.	128
Figure 83. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 81 pounds per acre in the IRR BMP region.	130
Figure 84. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 22 fields.	131
Figure 85. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2012: 17 fields.	132
Figure 86. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2012: 5 fields.	133
Figure 87. The corn yield averaged 129 bushels per acre and the nitrogen fertilizer rate averaged 127 pounds per acre on fields with corn following small grains in Minnesota.	134
Figure 88. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in Minnesota for 2012: 39 fields.	135
Figure 89. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in Minnesota for 2012: 22 fields.	136
Figure 90. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in Minnesota for 2012: 17 fields.	137
Figure 91. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 143 pounds per acre in the SW BMP region.	139
Figure 92. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the SW BMP region for 2012: 7 fields.	140
Figure 93. The corn yield averaged 120 bushels per acre and the nitrogen fertilizer rate averaged 123 pounds per acre in the NW BMP region.	141
Figure 94. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the NW BMP region for 2012: 15 fields.	142
Figure 95. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the NW BMP region for 2012: 7 fields.	143
Figure 96. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in the NW BMP region for 2012: 8 fields.	144

Figure 97. The corn yield averaged 121 bushels per acre and the nitrogen fertilizer rate averaged 118 pounds per acre in the IRR BMP region.	145
Figure 98. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 15 fields.	146
Figure 99. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the IRR BMP region for 2012: 9 fields.	147
Figure 100. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the IRR BMP region for 2012: 6 fields.	148
Figure 101. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in Minnesota for 2012: 292 fields.	150
Figure 102. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in Minnesota for 2012: 338 fields.	151
Figure 103. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in Minnesota for 2012: 282 fields. ...	152
Figure 104. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SE BMP region for 2012: 16 fields.	153
Figure 105. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 38 fields.	154
Figure 106. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SE BMP region for 2012: 40 fields.	155
Figure 107. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SC BMP region for 2012: 50 fields.	156
Figure 108. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 114 fields.	157
Figure 109. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SC BMP region for 2012: 121 fields.	158
Figure 110. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SW BMP region for 2012: 90 fields.	159
Figure 111. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 143 fields.	160
Figure 112. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SW BMP region for 2012: 93 fields.	161

Figure 113. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the NW BMP for 2012: 38 fields.	162
Figure 114. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the NW BMP region for 2012: 7 fields.	163
Figure 115. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the IRR BMP region for 2012: 98 fields.	164
Figure 116. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 36 fields.	165
Figure 117. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the IRR BMP region for 2012: 26 fields.	166
Figure 118. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in Minnesota for 2012: 188 fields.	167
Figure 119. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in Minnesota for 2012: 206 fields.	168
Figure 120. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in Minnesota for 2012: 195 fields.	169
Figure 121. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SE BMP region for 2012: 9 fields.	170
Figure 122. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 30 fields.	171
Figure 123. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SE BMP region for 2012: 31 fields.	172
Figure 124. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SC BMP region for 2012: 30 fields. ...	173
Figure 125. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 71 fields.	174
Figure 126. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SC BMP region for 2012: 84 fields.	175
Figure 127. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SW BMP region for 2012: 47 fields. ...	176
Figure 128. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 79 fields.	177
Figure 129. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SW BMP region for 2012: 52 fields.	178
Figure 130. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the NW BMP region for 2012: 18 fields.	179

Figure 131. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the IRR BMP region for 2012: 84 fields....	180
Figure 132. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 23 fields.	181
Figure 133. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the IRR BMP region for 2012: 26 fields.	182
Figure 134. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2012: 40 fields.	183
Figure 135. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2012: 22 fields.	184
Figure 136. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2012: 27 fields.	185
Figure 137. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SE BMP region for 2012: 7 fields.	186
Figure 138. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 8 fields.	187
Figure 139. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SE BMP region for 2012: 15 fields.	188
Figure 140. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 6 fields.	189
Figure 141. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SC BMP region for 2012: 5 fields.	190
Figure 142. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SW BMP region for 2012: 5 fields.	191
Figure 143. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 5 fields.	192
Figure 144. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2012: 24 fields.	194
Figure 145. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2012: 28 fields.	195
Figure 146. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2012: 18 fields.	196

Figure 147. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2012: 6 fields.....	197
Figure 148. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 5 fields.	198
Figure 149. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the SC BMP region for 2012: 5 fields. ...	199
Figure 150. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the SC BMP region for 2012: 5 fields. ...	200
Figure 151. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2012: 12 fields.	202
Figure 152. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 6 fields.	203
Figure 153. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in Minnesota for 2012: 31 fields.....	204
Figure 154. Percentage of fields within the U of M recommended N range for corn following small grains with yields of 155 through 175 bushels per acre in Minnesota for 2012: 5 fields.	205
Figure 155. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the NW BMP region for 2012: 15 fields.	207
Figure 156. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the IRR BMP region for 2012: 13 fields.	208
Figure 157. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 75 fields.	210
Figure 158. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 28 fields.	211
Figure 159. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 47 fields.	212
Figure 160. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 8 fields.....	213
Figure 161. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.....	214
Figure 162. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 29 fields.....	215
Figure 163. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 14 fields.....	216

Figure 164. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 15 fields.	217
Figure 165. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 29 fields.	218
Figure 166. . Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 10 fields.	219
Figure 167. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 19 fields.	220
Figure 168. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 9 fields.	222
Figure 169. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 7 fields.	223
Figure 170. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 82 fields.	224
Figure 171. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 23 fields.	225
Figure 172. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 59 fields.	226
Figure 173. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 14 fields.	227
Figure 174. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 11 fields.	228
Figure 175. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 17 fields.	229
Figure 176. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 7 fields.	230
Figure 177. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 10 fields.	231
Figure 178. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 29 fields.	232

Figure 179. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.	233
Figure 180 Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 20 fields.	234
Figure 181. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 21 fields.	236
Figure 182. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 17 fields.	237
Figure 183. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 33 fields.	238
Figure 184. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.	239
Figure 185. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 21 fields.	240
Figure 186. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in SE BMP region for 2012: 11 fields.	241
Figure 187. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in SE BMP region for 2012: 7 fields.	242
Figure 188. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in SW BMP region for 2012: 5 fields.	244
Figure 189. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in IRR BMP region for 2012: 14 fields.	246
Figure 190. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer in IRR BMP region for 2012: 6 fields.	247
Figure 191. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in IRR BMP region for 2012: 8 fields.	248
Figure 192. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 15 fields.	249
Figure 193. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 7 fields.	250

Figure 194. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.	251
Figure 195. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 8 fields.	254
Figure 196. Percentage of fields within the U of M recommended N range for corn following small grains applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	256
Figure 197. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 17 fields.	259
Figure 198. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.	260
Figure 199. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.	261
Figure 200. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SC BMP for 2012: 7 fields.	263
Figure 201. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2012: 9 fields.	265
Figure 202. . Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2012: 5 fields.	266
Figure 203. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 29 fields.	267
Figure 204. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	268
Figure 205. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 23 fields.	269
Figure 206. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 7 fields.	270
Figure 207. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.	271
Figure 208. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.	273

Figure 209. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 6 fields.	274
Figure 210. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 12 fields.	276
Figure 211. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 10 fields.	277
Figure 212. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 25 fields.	278
Figure 213. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 10 fields.	279
Figure 214. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 15 fields.	280
Figure 215. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 10 fields.	281
Figure 216. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.	282
Figure 217. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 10 fields.	284
Figure 218. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.	285
Figure 219. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.	286
Figure 220. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.	287
Figure 221. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	288
Figure 222. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	289
Figure 223. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 9 fields.	294

Figure 224. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.	295
Figure 225. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 18 fields.	298
Figure 226. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and no commercial nitrogen fertilizer in Minnesota for 2012: 7 fields.	299
Figure 227. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 11 fields.	300
Figure 228. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	303
Figure 229. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.	304
Figure 230. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 36 fields.	311
Figure 231. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2012: 16 fields.	312
Figure 232. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 20 fields.	313
Figure 233. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 17 fields.	315
Figure 234. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 9 fields.	316
Figure 235. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 8 fields.	317
Figure 236. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 14 fields.	318
Figure 237. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 6 fields.	319
Figure 238. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 8 fields.	320

Figure 239. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 27 fields.	322
Figure 240. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.	323
Figure 241. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 19 fields.	324
Figure 242. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 14 fields.	326
Figure 243. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 5 fields.	327
Figure 244. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 9 fields.	328
Figure 245. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.	329
Figure 246. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 8 fields.	330
Figure 247. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 9 fields.	338
Figure 248. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.	339
Figure 249. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.	342
Figure 250. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.	343
Figure 251. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.	345
Figure 252. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.	347
Figure 253. The Minnesota Pollution Control Agency’s description on how to use the Maximum Return to Nitrogen (MRTN) on corn.	354

Introduction

The Minnesota Department of Agriculture (MDA) is responsible for the development and promotion of nitrogen Best Management Practices (BMPs) which optimize production and profitability while protecting the state's water resources. The MDA is also responsible for monitoring nitrogen use and the adoption of the nitrogen BMPs. The MDA conducts two types of surveys, which were designed and conducted in partnership with the National Agricultural Statistics Service (NASS). Additional information is available at:

<http://www.mda.state.mn.us/en/protecting/cleanwaterfund/gwdwprotection/nutrientmgmtsurvey.aspx>

On even crop years, an in-depth and detailed survey analysis measures nitrogen use in regard to rate, source, and timing on corn following the five most common crop rotations. A link to the most recent survey, [2012 Survey of Fertilizer and Manure Selection and Management Practices on Corn in Minnesota](#), is available at the webpage listed above.

On odd crop years, surveys are conducted for BMPs regarding fall and spring nitrogen applications to determine if farmers are following BMPs recommended by the University of Minnesota (U of M) and the MDA. A link to the most recent survey, [2011 Survey of Nitrogen Fertilizer BMPs on Corn in Minnesota](#), is also available on the MDA webpage listed above. Fertilizer type, timing, and nitrogen inhibitor use are among the BMPs that are documented during odd crop years. Rate is not a focus of this report.

This is a companion report comparing the rates of nitrogen applications on fertilized corn acres to the U of M guidelines for nitrogen fertilizer. They can be found at: <http://www.extension.umn.edu/agriculture/nutrient-management/fertilizer-management/fertilizing-corn-in-minnesota/index.html>

Survey Design and Implementation

Five nitrogen BMP regions (noted as “BMP regions” throughout the report) were previously developed by MDA staff. Counties were clustered based on similarities in geology, soils, and crops. More information about BMP regions can be found at: <http://www.mda.state.mn.us/protecting/bmps/nitrogenbmps.aspx>. Regional nitrogen use information is used to help design and implement specific water quality monitoring and nitrogen educational programs for each BMP region.

Minnesota Nitrogen Best Management Practices Regions

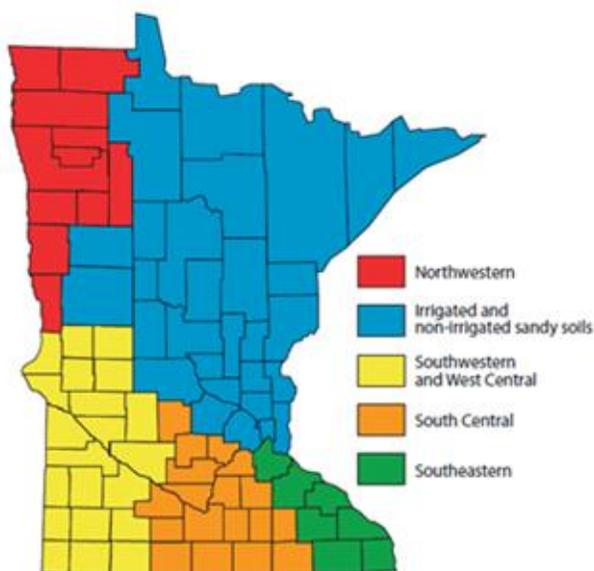


Figure 1. Minnesota nitrogen BMP regions.

For the purpose of this report the Minnesota nitrogen BMP regions will be defined as follows: Northwestern as NW, Irrigated and non-irrigated sandy soils as IRR, Southwestern and West Central As SW, South Central as SC, and Southeastern as SE.

NASS developed a sampling population of 7,600 farms by randomly drawing from its entire database of all corn growers in Minnesota. There were 1,600 farmers that raised corn and completed the survey in 2012. The definition of “corn” for purposes of this report includes both grain and silage and excludes sweet corn and popcorn.

Due to the low intensity of row crop agriculture in portions of northern Minnesota, survey results were not listed when there were less than five responses in any category for corn or manure.

2012 Commercial Nitrogen and Manure Use Practices Summary and Highlights

The Commercial Nitrogen and Manure Fertilizer Applications on Corn Acres Compared to the U of M Nitrogen Guidelines Crop Year 2012 and the *2012 Survey of Fertilizer and Manure Selection and Management Practices on Corn in Minnesota*, are companion reports. This report summarized survey results for a number of important practices associated with nitrogen and manure applications on Minnesota's 2012 corn acres. Over 1,600 corn producers participated in the telephone survey and information was collected for 434,592 corn acres, representing five percent of Minnesota's 8,330,000 corn acres. Survey questions focused on the 97 percent of the respondents that fertilized corn with manure and/or nitrogen. This was the third fertilizer survey performed by the MDA and NASS to collect information on nitrogen use and management practices on Minnesota corn acres.

Statewide Commercial Fertilizer Nitrogen and Manure Applications and Management on Corn

Information on nitrogen management and manure was gathered for a typical corn field in the 2012 growing season. Information about management on all crop acres was not collected in this survey¹. All yield data shown in this report is for corn.

Farmers in the survey were first asked “Did you grow corn on your operation in 2012?” Then farmers were asked “How many corn acres were planted with field corn in 2012?” Table 1 details the farmers who responded they grew corn and the corresponding acres of corn grown.

Table 1. Statewide summary of respondents and corresponding corn acres by county and BMP region with and without manure.

County	BMP Region	Number of Respondents	Number of Corn Acres
Clay	NW	12	7,540
Clearwater	NW	**	**
Kittson	NW	**	**
Mahnomen	NW	**	**
Marshall	NW	7	900
Norman	NW	12	5,186
Pennington	NW	**	**
Polk	NW	9	3,993
Red Lake	NW	5	964
Roseau	NW	5	1,450
Wilkin	NW	10	4,527
Totals	NW	72	27,646
Aitkin	IRR	**	**
Anoka	IRR	**	**
Becker	IRR	21	4,044
Beltrami	IRR	7	534
Benton	IRR	26	2,319
Carlton	IRR	**	**
Cass	IRR	7	1,342
Chisago	IRR	9	1,547
Crow Wing	IRR	6	1,456
Hennepin	IRR	10	1,890
Hubbard	IRR	**	**
Isanti	IRR	10	1,988
Itasca	IRR	**	**
Kanabec	IRR	8	614
Mille Lacs	IRR	15	2,079
Morrison	IRR	62	6,161
Otter Tail	IRR	50	12,150
Pine	IRR	14	1,370

¹ Information was field specific. Farmers can manage fields differently depending on soil type, manure applications, and crop history for a particular field.

County	BMP Region	Number of Respondents	Number of Corn Acres
Sherburne	IRR	8	1,688
Stearns	IRR	94	11,945
Todd	IRR	43	5,198
Wadena	IRR	14	2,340
Washington	IRR	7	1,513
Wright	IRR	32	6,641
Totals	IRR	458	67,759
Big Stone	SW	13	4,930
Chippewa	SW	15	7,762
Cottonwood	SW	29	9,693
Douglas	SW	14	1,653
Grant	SW	7	3,779
Jackson	SW	23	6,057
Kandiyohi	SW	18	4,788
Lac qui Parle	SW	16	6,607
Lincoln	SW	20	6,127
Lyon	SW	28	11,926
Murray	SW	26	9,003
Nobles	SW	22	5,576
Pipestone	SW	21	4,771
Pope	SW	18	3,870
Redwood	SW	40	18,814
Renville	SW	37	14,474
Rock	SW	24	8,123
Stevens	SW	18	6,585
Swift	SW	21	11,548
Traverse	SW	13	6,875
Yellow Medicine	SW	25	17,331
Totals	SW	448	170,292
Blue Earth	SC	25	8,404
Brown	SC	45	9,375
Carver	SC	22	2,981
Dodge	SC	19	3,879
Faribault	SC	20	11,941
Freeborn	SC	33	9,955
Le Sueur	SC	17	4,754
Martin	SC	20	8,879
McLeod	SC	32	7,843
Meeker	SC	29	9,161
Mower	SC	28	4,903
Nicollet	SC	18	2,836
Rice	SC	36	5,919
Scott	SC	17	3,043
Sibley	SC	38	9,031
Steele	SC	19	6,269
Waseca	SC	18	3,838
Watonwan	SC	19	9,318
Totals	SC	455	122,329
Dakota	SE	21	7,678
Fillmore	SE	34	8,353
Goodhue	SE	38	8,871
Houston	SE	22	3,377
Olmsted	SE	23	6,478
Wabasha	SE	41	7,341

County	BMP Region	Number of Respondents	Number of Corn Acres
Winona	SE	40	4,468
Totals	SE	219	46,566
Totals	State	1,652	434,592

** Less than five responses

§ BMP region totals may not add up due to some counties having less than five responses, but are included in the BMP region total

Commercial Fertilizer Applications in Minnesota

Farmers in the survey were then asked, “Do you have a corn field without manure applied in the last five years?” Table 2 details the farmers who answered yes to this question and the corresponding acres of corn grown. All analysis on the commercial fertilizer section includes nitrogen applications from commercial fertilizer only.

Table 2. Statewide summary of respondents and corresponding corn acres by county and BMP region for all corn fields without manure.

County	BMP Region	Number of Respondents	Number of Corn Acres
Clay	NW	12	7,540
Clearwater	NW	**	**
Kittson	NW	**	**
Mahnomen	NW	**	**
Marshall	NW	7	900
Norman	NW	12	5,186
Polk	NW	8	3,923
Red Lake	NW	**	**
Roseau	NW	**	**
Wilkin	NW	10	4,527
Totals	NW	67	27,341
Aitkin	IRR	**	**
Anoka	IRR	**	**
Becker	IRR	13	3,423
Beltrami	IRR	**	**
Benton	IRR	13	1,100
Cass	IRR	**	**
Chisago	IRR	8	1,477
Crow Wing	IRR	5	1,416
Hennepin	IRR	6	1,700
Hubbard	IRR	**	**
Isanti	IRR	7	1,587
Itasca	IRR	**	**
Kanabec	IRR	**	**
Mille Lacs	IRR	11	1,877
Morrison	IRR	30	3,038
Otter Tail	IRR	40	11,085
Pine	IRR	11	1,064
Sherburne	IRR	7	1,672
Stearns	IRR	38	5,845
Todd	IRR	24	3,186
Wadena	IRR	10	2,252
Washington	IRR	5	1,442
Wright	IRR	24	5,176
Totals	IRR	270	50,051
Big Stone	SW	11	4,280
Chippewa	SW	14	7,707
Cottonwood	SW	25	8,666
Douglas	SW	8	1,200
Grant	SW	7	3,779

County	BMP Region	Number of Respondents	Number of Corn Acres
Jackson	SW	18	5,652
Kandiyohi	SW	13	3,287
Lac qui Parle	SW	13	5,507
Lincoln	SW	14	4,708
Lyon	SW	26	11,711
Murray	SW	16	7,093
Nobles	SW	16	3,963
Pipestone	SW	14	2,481
Pope	SW	12	3,548
Redwood	SW	33	16,885
Renville	SW	31	13,019
Rock	SW	18	6,798
Stevens	SW	17	6,335
Swift	SW	19	10,868
Traverse	SW	12	6,860
Yellow Medicine	SW	21	16,405
Totals	SW	358	150,752
Blue Earth	SC	19	6,729
Brown	SC	30	7,055
Carver	SC	12	1,743
Dodge	SC	11	3,110
Faribault	SC	18	11,727
Freeborn	SC	27	8,744
Le Sueur	SC	11	4,225
Martin	SC	14	5,691
McLeod	SC	25	7,580
Meeker	SC	23	8,876
Mower	SC	22	3,743
Nicollet	SC	13	2,146
Rice	SC	26	4,477
Scott	SC	12	2,751
Sibley	SC	28	8,384
Steele	SC	14	5,711
Waseca	SC	15	3,583
Watonwan	SC	17	8,913
Totals	SC	337	105,188
Dakota	SE	18	7,375
Fillmore	SE	23	5,976
Goodhue	SE	22	6,754
Houston	SE	15	2,445
Olmsted	SE	15	5,550
Wabasha	SE	26	5,681
Winona	SE	20	2,463
Totals	SE	139	36,244
State	Without Manure	1,171	369,576

** Less than five responses

§ BMP region totals may not add up due to some counties having less than five responses, but are included in the BMP region total

Table 3 details the percent of farmers who had a corn field without manure applied by BMP region.

Table 3. Percent of respondents with a corn field without manure applied.

BMP Region	Corn Field Without Manure Applied	Percentage of Respondents
Northwestern	Yes	91
Northwestern	No	9
Irrigated and non-irrigated sandy soils	Yes	55
Irrigated and non-irrigated sandy soils	No	45
South Western and West Central	Yes	72
South Western and West Central	No	28
South Central	Yes	67
South Central	No	33
Southeastern	Yes	60
Southeastern	No	40
Statewide	Yes	65
Statewide	No	35

Table 4 details the previous crop planted before the current corn crop by BMP region and the corresponding yield.

Table 4. Percent of acres by previous crop and the corresponding yields.

BMP Region	Previous Crop	Percentage of Fields	Average Corn Yield Bushels per Acre
Northwestern	Soybeans	46	138
Northwestern	Corn	23	140
Northwestern	Corn/Alfalfa	**	**
Northwestern	Alfalfa	**	**
Northwestern	Small Grains	15	120
Northwestern	Other	13	148
Irrigated and non-irrigated sandy soils	Soybeans	42	143
Irrigated and non-irrigated sandy soils	Corn	35	144
Irrigated and non-irrigated sandy soils	Corn/Alfalfa	8	132
Irrigated and non-irrigated sandy soils	Alfalfa	6	152
Irrigated and non-irrigated sandy soils	Small Grains	4	121
Irrigated and non-irrigated sandy soils	Other	5	124
South Western and West Central	Soybeans	60	164
South Western and West Central	Corn	33	166
South Western and West Central	Corn/Alfalfa	3	163
South Western and West Central	Alfalfa	2	144
South Western and West Central	Small Grains	1	152
South Western and West Central	Other	2	149
South Central	Soybeans	56	172
South Central	Corn	37	175
South Central	Corn/Alfalfa	3	166
South Central	Alfalfa	2	156
South Central	Small Grains	**	**
South Central	Other	2	162
Southeastern	Soybeans	46	173
Southeastern	Corn	34	172
Southeastern	Corn/Alfalfa	15	174
Southeastern	Alfalfa	4	159
Southeastern	Small Grains	**	**
Southeastern	Other	**	**
Statewide	Soybeans	53	162
Statewide	Corn	34	164
Statewide	Corn/Alfalfa	5	157
Statewide	Alfalfa	3	152
Statewide	Small Grains	2	129
Statewide	Other	3	142

** Less than five responses

Table 5 details the percentage of non-manured corn fields with nitrogen applied.

Table 5. Commercial fertilizer applications applied to non-manured corn fields.

BMP Region	Fertilizer Applied	Percentage of Respondents
Northwestern	Yes	100
Northwestern	No	0
Irrigated and non-irrigated sandy soils	Yes	94
Irrigated and non-irrigated sandy soils	No	6
Southwestern and West Central	Yes	98
Southwestern and West Central	No	2
South Central	Yes	97
South Central	No	3
Southeastern	Yes	95
Southeastern	No	5
Statewide	Yes	96
Statewide	No	4

Table 6 details the percentage of the method of nitrogen application for each BMP region, either by variable rate or by one rate.

Table 6. Variable rate nitrogen applications by BMP region.

BMP Region	Variable Rate Nitrogen Application	Percentage of Respondents
Northwestern	Variable rate	29
Northwestern	One rate	71
Irrigated and non-irrigated sandy soils	Variable rate	34
Irrigated and non-irrigated sandy soils	One rate	66
Southwestern and West Central	Variable rate	44
Southwestern and West Central	One rate	56
South Central	Variable rate	40
South Central	One rate	60
Southeastern	Variable rate	38
Southeastern	One rate	62
Statewide	Variable rate	39
Statewide	One rate	61

Table 7 details the nitrogen rates and corresponding yields by BMP region. These are nitrogen rates and yields in all corn acres, regardless of previous crop. Nitrogen rates are from commercial nitrogen fertilizer only.

Table 7. Nitrogen rates and average yields by BMP region.

BMP Region	Average Nitrogen Rate Pounds per Acre	Average Corn Yield Bushels Per Acre
Northwestern	134	137
Irrigated and non-irrigated sandy soils	128	141
Southwestern and West Central	150	164
South Central	158	172
Southeastern	152	172
Statewide	147	161

Table 8 details the nitrogen fertilizer rates and corn yields by BMP region on corn following various crops.

Table 8. Average amount of nitrogen applied and corresponding yield by BMP region and previous crop.

BMP Region	Previous Crop	Average Nitrogen Rate Pounds per Acre	Average Corn Yield Bushels per Acre
Northwestern	Soybeans	132	138
Northwestern	Corn	146	140
Northwestern	Corn/Alfalfa	**	**
Northwestern	Alfalfa	**	**
Northwestern	Small Grains	123	120
Northwestern	Other	139	148
Irrigated and non-irrigated sandy soils	Soybeans	129	143
Irrigated and non-irrigated sandy soils	Corn	139	144
Irrigated and non-irrigated sandy soils	Corn/Alfalfa	115	132
Irrigated and non-irrigated sandy soils	Alfalfa	81	152
Irrigated and non-irrigated sandy soils	Small Grains	118	121
Irrigated and non-irrigated sandy soils	Other	123	124
Southwestern and West Central	Soybeans	144	164
Southwestern and West Central	Corn	163	166
Southwestern and West Central	Corn/Alfalfa	129	163
Southwestern and West Central	Alfalfa	119	144
Southwestern and West Central	Small Grains	143	152
Southwestern and West Central	Other	149	149
South Central	Soybeans	152	172
South Central	Corn	172	175
South Central	Corn/Alfalfa	135	166
South Central	Alfalfa	107	156
South Central	Small Grains	**	**
South Central	Other	157	162
Southeastern	Soybeans	150	173
Southeastern	Corn	166	172
Southeastern	Corn/Alfalfa	140	174
Southeastern	Alfalfa	106	159
Southeastern	Small Grains	**	**
Southeastern	Other	**	**
Statewide	Soybeans	144	162
Statewide	Corn	160	164
Statewide	Corn/Alfalfa	129	157
Statewide	Alfalfa	98	152
Statewide	Small Grains	127	129
Statewide	Other	139	142

** Less than five responses.

The U of M has developed Best Management Practices for nitrogen use in Minnesota. A core part of the BMPs are based on following the standard nitrogen guidelines for fertilizing corn in Minnesota. A consideration of soil productivity, price/value ratio, and previous crop are used to arrive at the fertilizer nitrogen guidelines for corn. The following analysis is a comparison of the fertilizer applied by corn farmers in 2012 to those U of M guidelines for corn. For more information on the guidelines:

<http://www.extension.umn.edu/agriculture/nutrient-management/fertilizer-management/fertilizing-corn-in-minnesota/index.html>

The figures in this report compare on-farm nitrogen fertilizer rates to those recommended by the U of M². The U of M guidelines are based on a ratio of the nitrogen price in dollars per pound to corn price (crop value) in dollars per bushel. The publication provides four nitrogen price to crop value ratios and acceptable nitrogen fertilizer rates for each.

A single ratio of 0.05 nitrogen price to crop value ratio was used in this analysis for the following reasons:

- To allow the comparison of commercial nitrogen to manure applications since manure is less expensive than commercial fertilizer.
- For consistency because nitrogen and corn prices vary from year to year.
- The survey did not ask how much a farmer paid for nitrogen or what future corn price was expected.

Corn charts are divided into 4 categories:

- Blue: below the U of M recommended N range.
- Green: within the U of M recommended N range.
- Yellow: 1 – 15 pounds above the U of M recommended N range.
- Red: greater than 15 pounds above the U of M recommended N range.

² Fertilizing Corn in Minnesota, 2006

Figure 2 details the distribution of nitrogen fertilizer rate compared to the U of M guidelines for corn following a variety of crops in 2012 using a “nitrogen to corn price ratio” of 0.05. This format will be used for all chart analysis in this report.

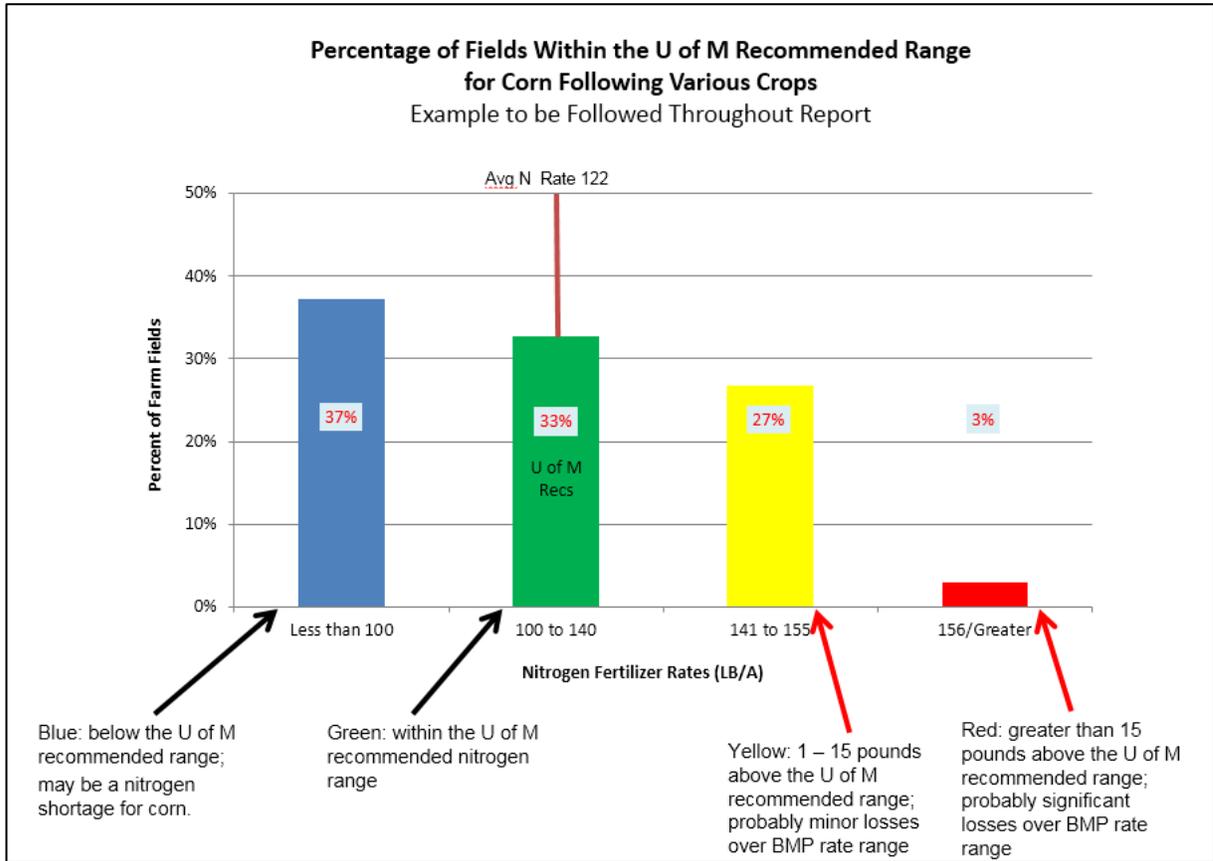


Figure 2. An example of analysis for the U of M recommended nitrogen application rate and ranges of nitrogen compared to farm field nitrogen rates.

Within this document:

- LB/A will be pounds per acre.
- Avg Bu./Acre will be bushels per acre.
- Avg N Rate LB/A will be average nitrogen rate in pounds per acre.
- MRTN will be maximum return to nitrogen.

Nitrogen rate comparison will be based on several scenarios for corn acres in Minnesota. Nitrogen guidelines can be found at:

<http://www.extension.umn.edu/agriculture/nutrient-management/fertilizer-management>

The nitrogen rate for corn will be compared to U of M nitrogen guidelines for corn based on crop history. Below are the previous crops grown to the 2012 corn crop. Each previous crop requires a different credit and recommended rate of nitrogen. All corn is assumed to be grown on highly productive soils. Highly productive soils are not detailed in the U of M nitrogen guidelines, and it is left to the farmer to determine what a highly productive soil is. The following crop rotations will be examined for comparison of nitrogen rates per acre to the U of M guidelines. Corn following other crops will not be analyzed because the nitrogen requirements of corn following unknown crops are not determined. There are various nitrogen credits for previous crops grown before corn and without this knowledge comparisons cannot be made to the U of M nitrogen guidelines.

- **Corn following soybeans** is the most dominant crop rotation. A nitrogen price/crop value ratio of 0.05 will be used for the U of M guidelines. Typically, a ratio of 0.10 is often a ratio that represents the price of corn and the price of nitrogen in Minnesota.
- **Corn following corn** is the second most dominant crop rotation. This rotation does not include alfalfa in the previous two years, 2011 or 2010.
- **Corn following alfalfa** is a common rotation in Minnesota. Nitrogen credits are assumed to be 100 pounds per acre for a medium stand of alfalfa seeded at a rate of 2-3 plants per square foot.
- **Corn following corn following alfalfa** is also a common rotation in Minnesota. Nitrogen credits for the second year following alfalfa are assumed to be 50 pounds per acre, for a medium stand of alfalfa seeded at a rate of 2-3 plants per square foot.
- **Corn following small grains** is the last rotation for comparison in Minnesota. It would have the same nitrogen application rates as corn following corn.

The previous crop rotations will be examined for comparison of nitrogen rates per acre to the U of M guidelines based on the following criteria:

- 1) The first section of the report analyzes the nitrogen fertilizer rate by variable and non-variable rate (single rate) applications.
- 2) The second section of the report analyzes the nitrogen fertilizer rate by yields:
 - Less than 155 bushels per acre.
 - Between and including 155 and 175 bushels per acre.
 - Greater than 175 bushels per acre.

3) The third section of the report analyzes nitrogen rate applications on manured corn acres. Analysis will be in the following categories:

- **All sources of manure** will include all types of manure.
- **Dairy manure** is the most common type of manure reported during the 2012 survey.
- **Beef manure** is the second most common type of manure reported during the 2012 survey.
- **Hog manure** is also a fairly common type of manure source reported during the 2012 survey.
- **Poultry manure** is the final type of manure reported during the 2012 survey.

The analysis will be based on either statewide survey results or BMP region results. In the case of the regional maps, the region will be colored either green or yellow. Green represents five responses or more for that particular crop rotation within the BMP region. Yellow represents **less** than five responses for that particular crop rotation.

Analysis of Nitrogen Fertilizer Rate by Variable and Non-variable Rate Application

This section demonstrates how farmers are applying nitrogen using variable and non-variable rates when applying commercial nitrogen fertilizer without manure for the 2012 corn crop.

The categories of analysis are grouped into nitrogen applied:

- Both with and without a variable rate.
- Without a variable rate³.
- With a variable rate.⁴

Nitrogen recommendations are detailed to the five most common crop histories:

- Corn following soybeans.
- Corn following corn.
- Corn following corn following alfalfa.
- Corn following alfalfa.
- Corn following small grains.

³Without variable rate means that all applications of commercial nitrogen fertilizer applied to the field were applied at a single rate each application as opposed to a rate that varied rate across the field.

⁴ Variable rate means that at least one of the applications of commercial nitrogen fertilizer was applied at a rate that varied across the field.

Statewide: Corn Following Soybeans

Statewide, fifty-five percent of the fields reported corn following soybeans (Figure 3). There were 912 fields surveyed in Minnesota.

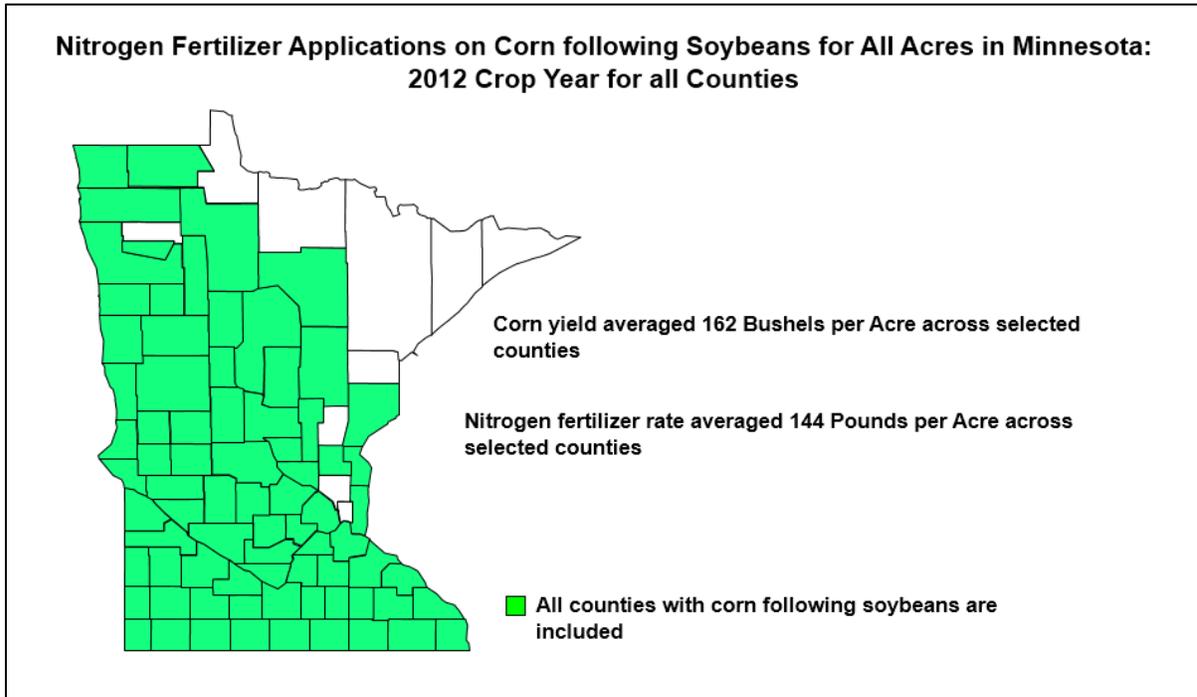


Figure 3. The corn yield averaged 162 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre on fields with corn following soybeans in Minnesota.

Figure 4 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price” ratio of 0.05. Table 9 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 4.

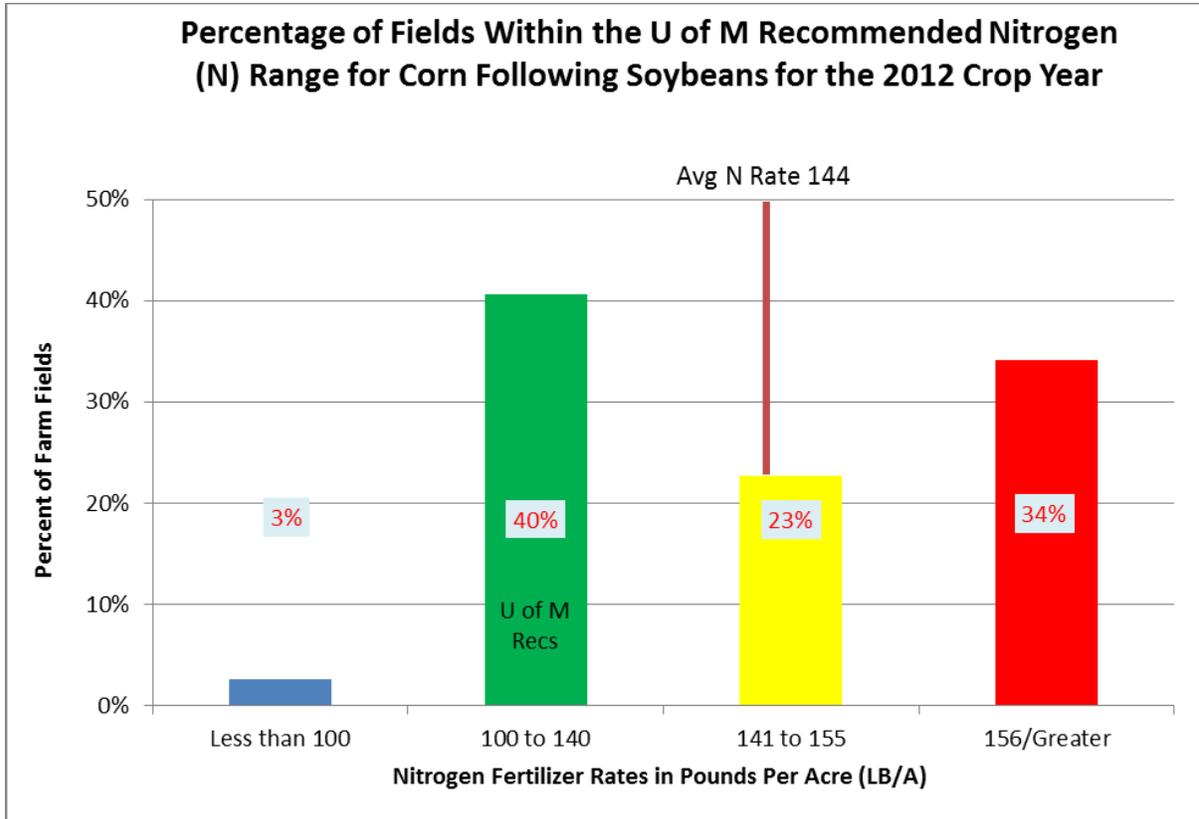


Figure 4. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in Minnesota for 2012: 912 fields.

Table 9. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bushels (Bu.)/Acre	113	150	167	178
Avg Nitrogen(N)-Rate LB/Acre (A)	76	126	149	168

Figure 5 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 10 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 5.

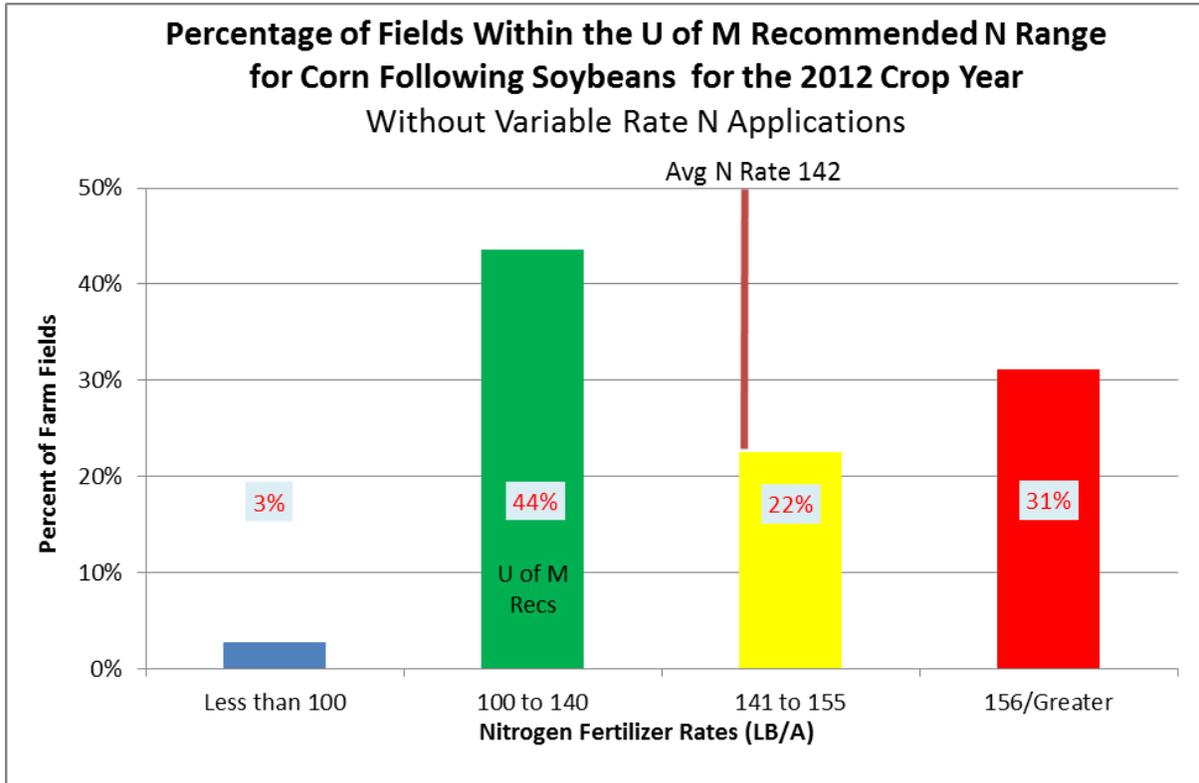


Figure 5. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in Minnesota for 2012: 550 fields.

Table 10. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	113	147	166	175
Avg N Rate LB/A	70	125	149	168

Figure 6 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 11 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 6.

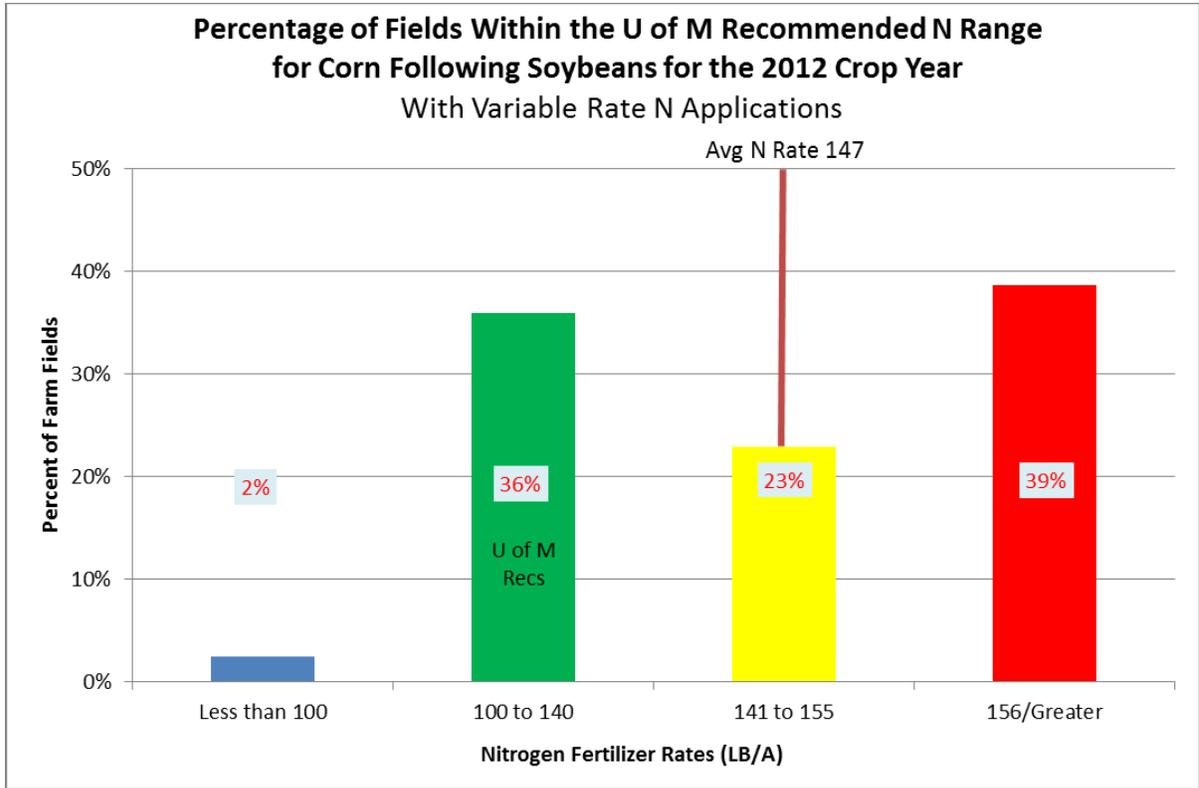


Figure 6. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in Minnesota for 2012: 362 fields.

Table 11. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	113	155	170	181
Avg N Rate LB/A	85	127	149	169

Southeastern Region: Corn Following Soybeans

There were 94 fields that were included in the SE BMP region corn following soybeans analysis. Figure 7 details the location, average rate of nitrogen fertilizer and average yield for corn following soybeans in the SE BMP region.

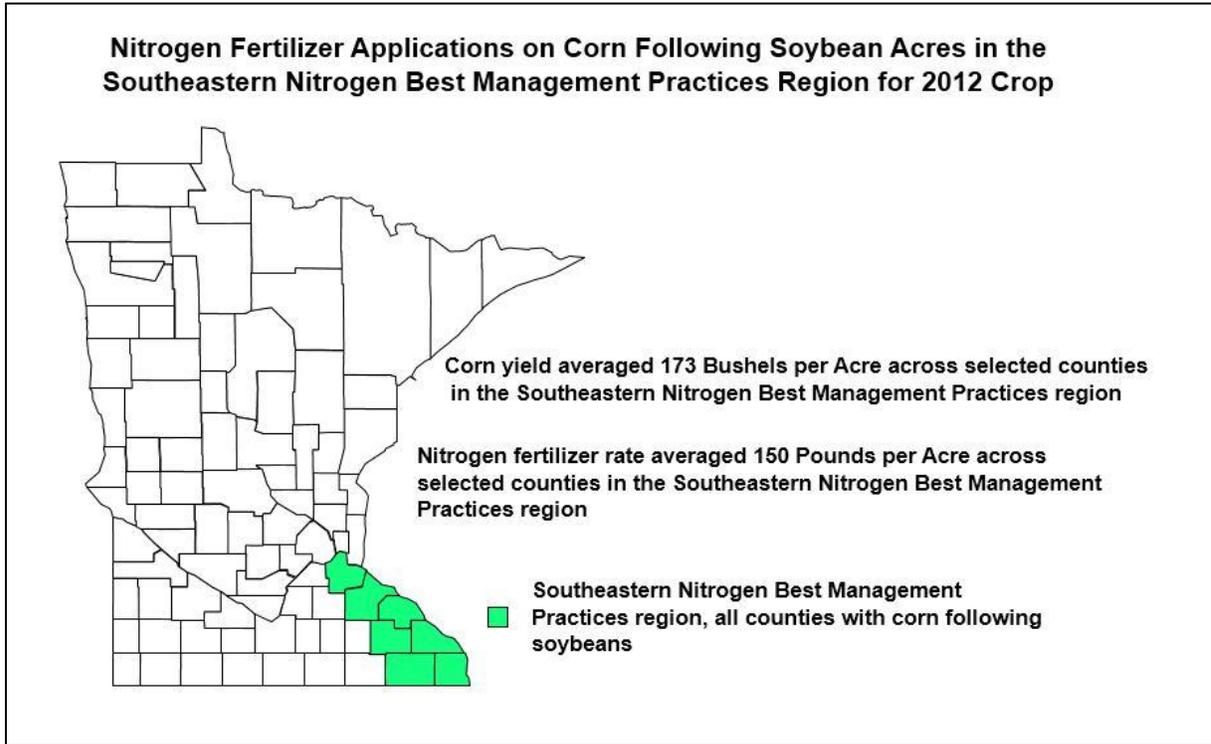


Figure 7. The corn yield averaged 173 bushels per acre and the nitrogen fertilizer rate averaged 150 pounds per acre in the SE BMP region.

Figure 8 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 12 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 8.

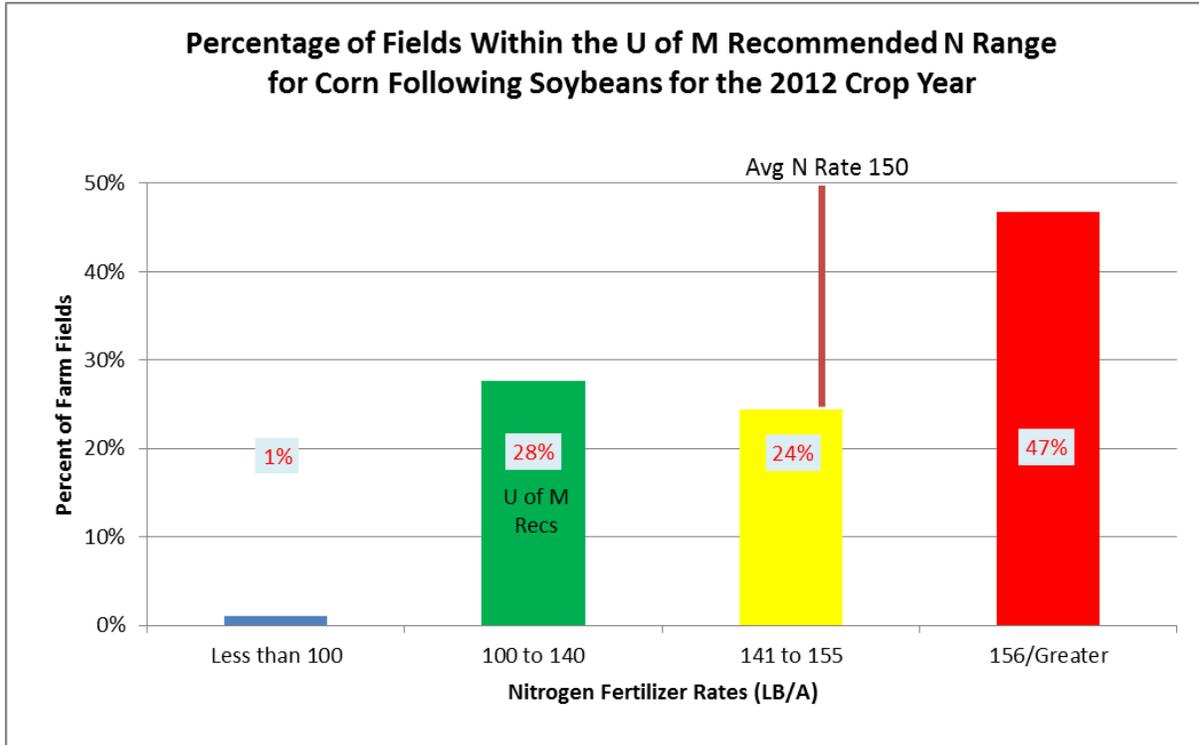


Figure 8. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SE BMP region for 2012: 94 fields.

Table 12. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	110	158	179	180
Avg N Rate LB/A	70	127	149	167

Figure 9 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 13 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 9.

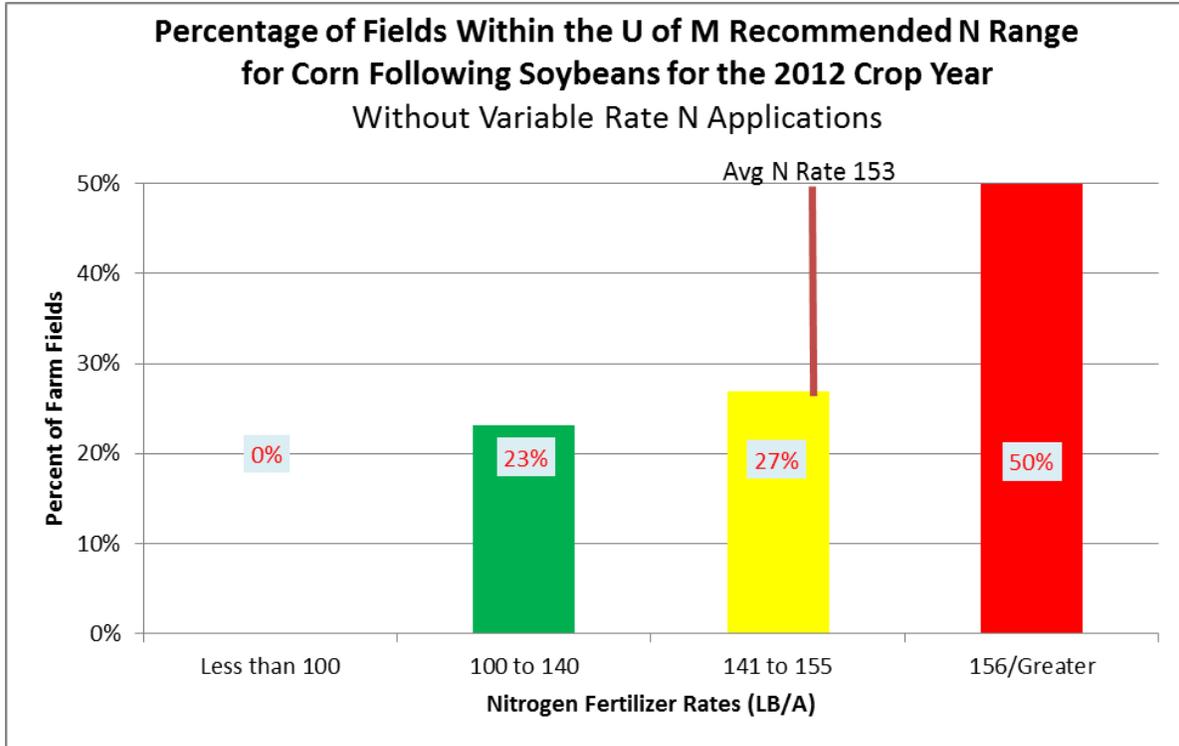


Figure 9. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SE BMP region for 2012: 52 fields.

Table 13. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	159	179	179
Avg N Rate LB/A	No Data	127	149	166

Figure 10 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 14 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 10.

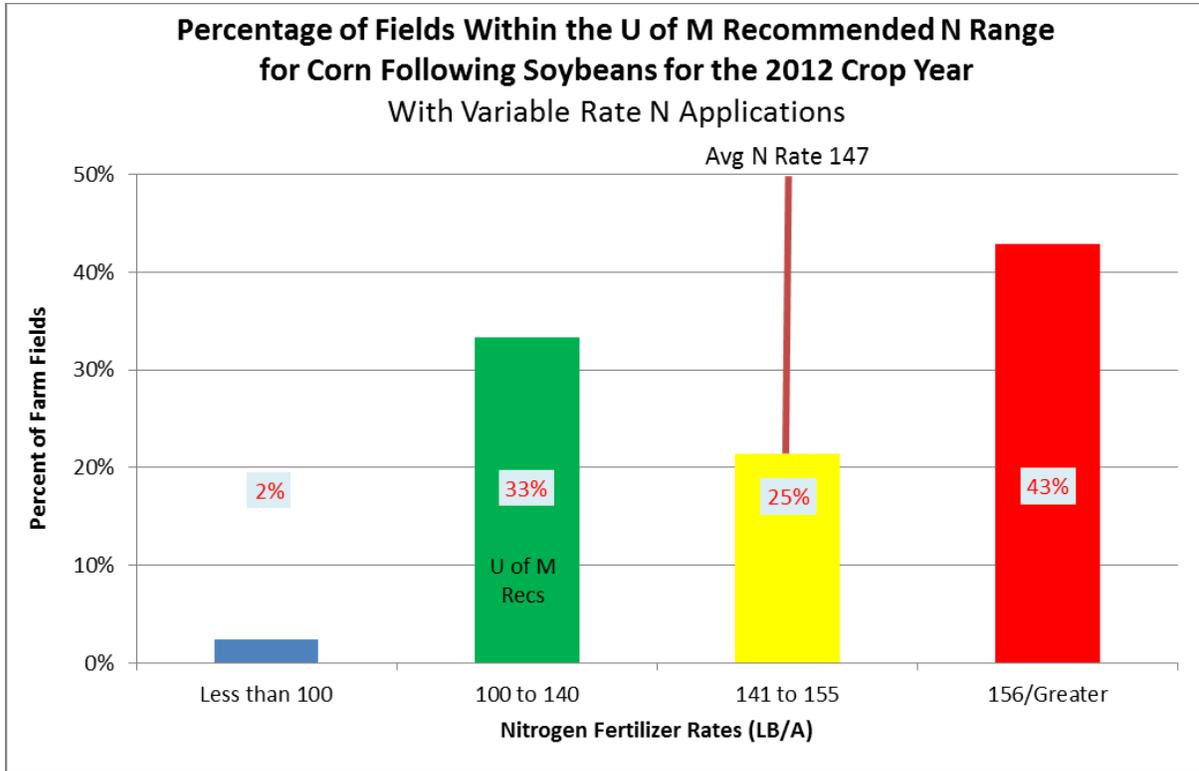


Figure 10. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SE BMP region for 2012: 42 fields.

Table 14. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	110	157	178	180
Avg N Rate LB/A	70	127	149	167

South Central Region: Corn Following Soybeans

There were 285 fields that were included in the SC BMP region corn following soybeans analysis. Figure 11 details the location, average rate of nitrogen fertilizer and average yield for corn following soybeans in the SC BMP region.

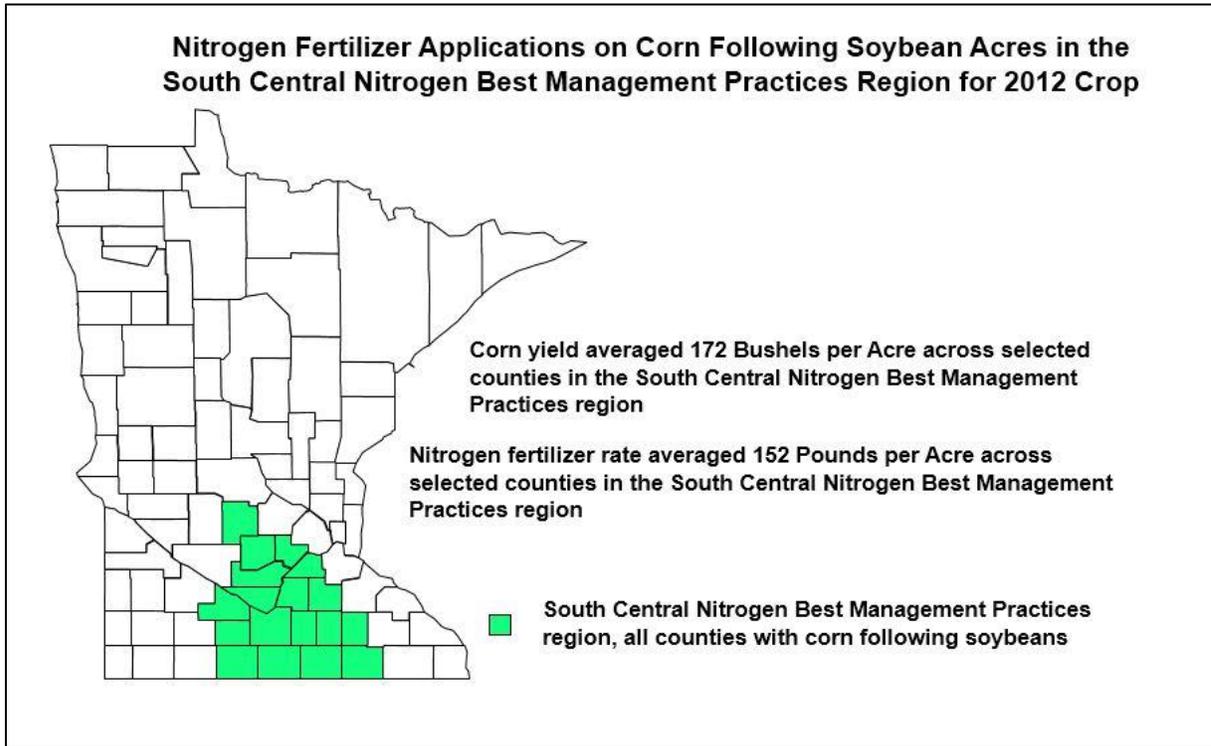


Figure 11. The corn yield averaged 172 bushels per acre and the nitrogen fertilizer rate averaged 152 pounds per acre in the SC BMP region.

Figure 12 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 15 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 12.

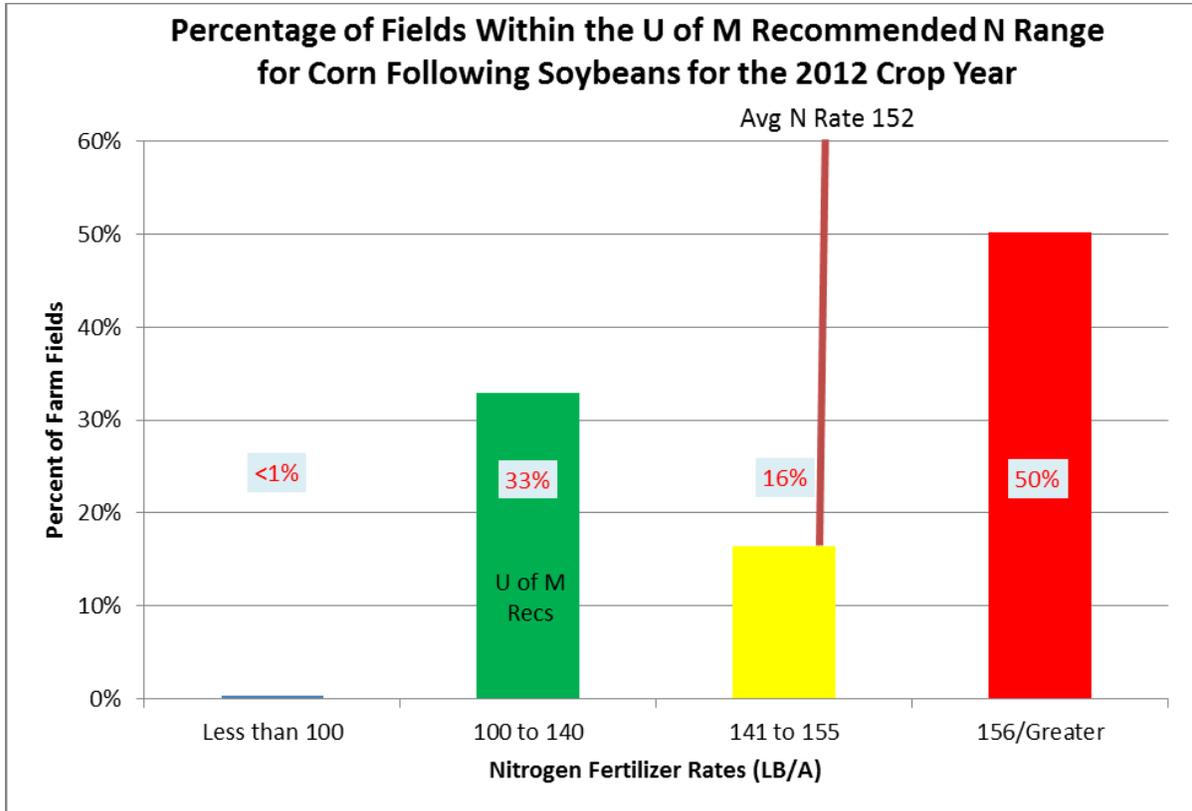


Figure 12. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SC BMP region for 2012: 285 fields.

Table 15. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	120	163	173	178
Avg N Rate LB/A	93	130	150	168

Figure 13 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 16 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 13.

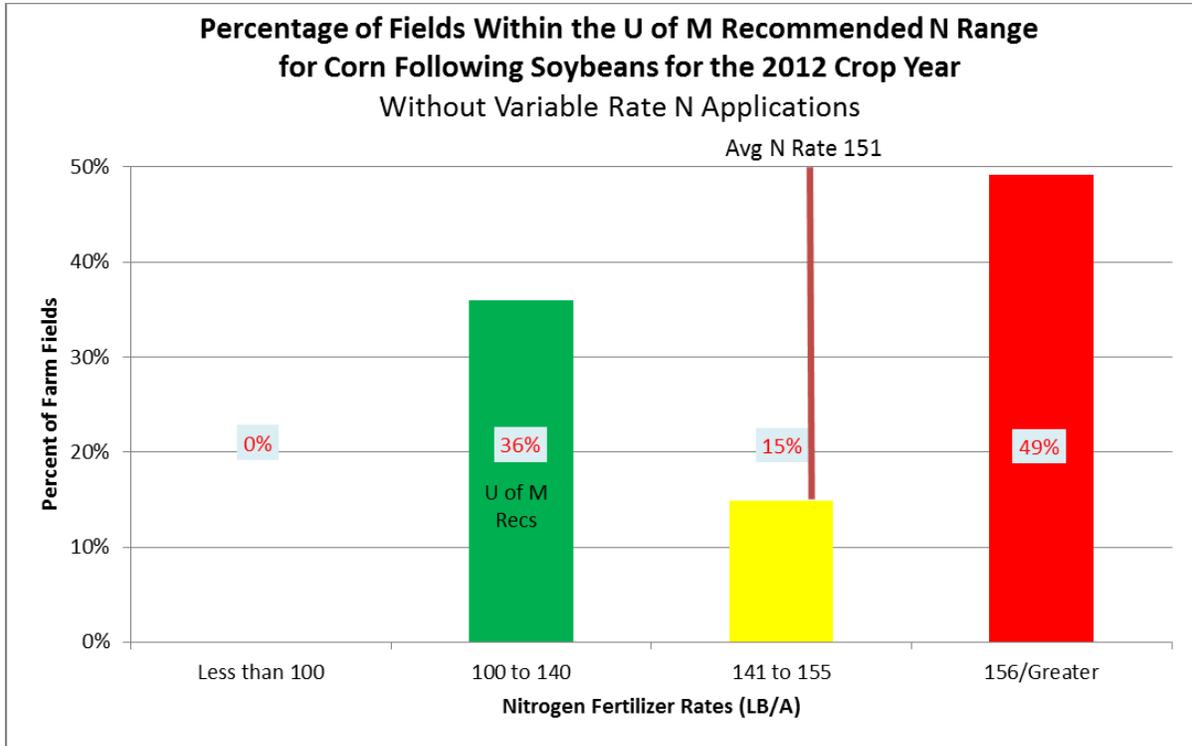


Figure 13. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SC BMP region for 2012: 175 fields.

Table 16. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	162	170	175
Avg N Rate LB/A	No Data	129	150	168

Figure 14 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 17 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 14.

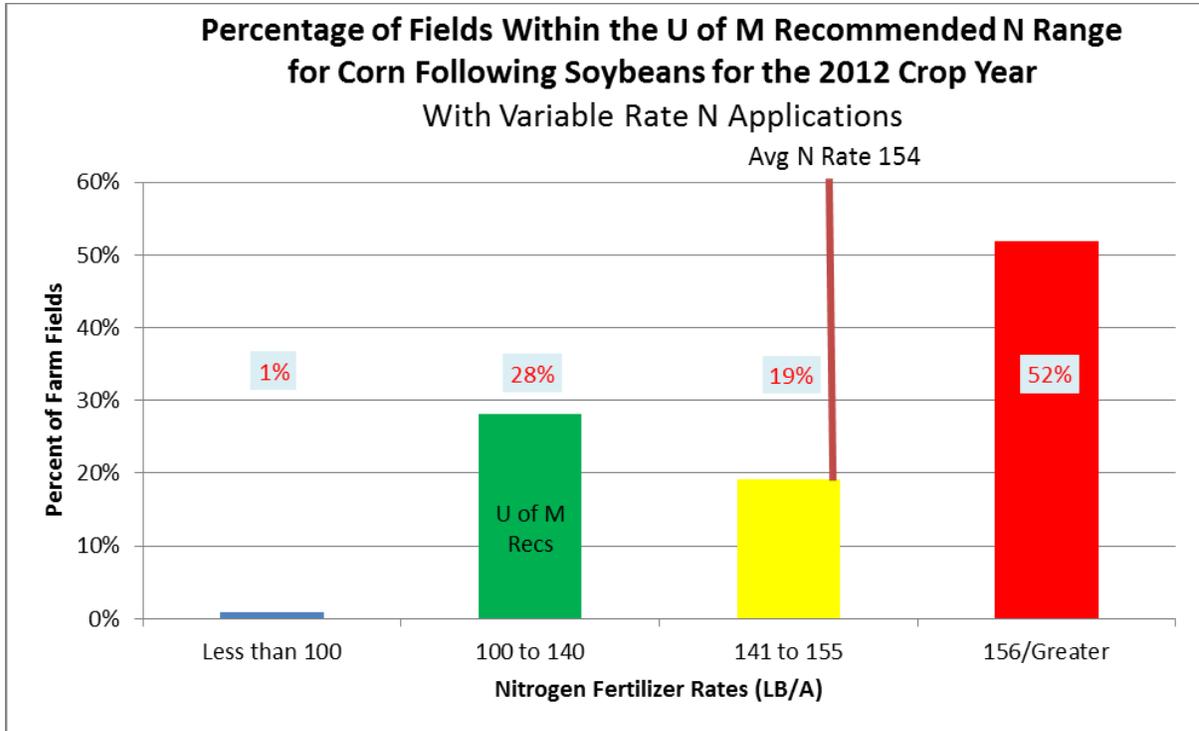


Figure 14. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SC BMP region for 2012: 110 fields.

Table 17. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	120	164	176	181
Avg N Rate LB/A	93	131	149	169

Southwestern and West Central Region: Corn Following Soybeans

There were 326 fields that were included in the SW BMP region corn following soybeans analysis. Figure 15 details the location, average rate of nitrogen fertilizer and average yield for corn following soybeans in the SW BMP region.

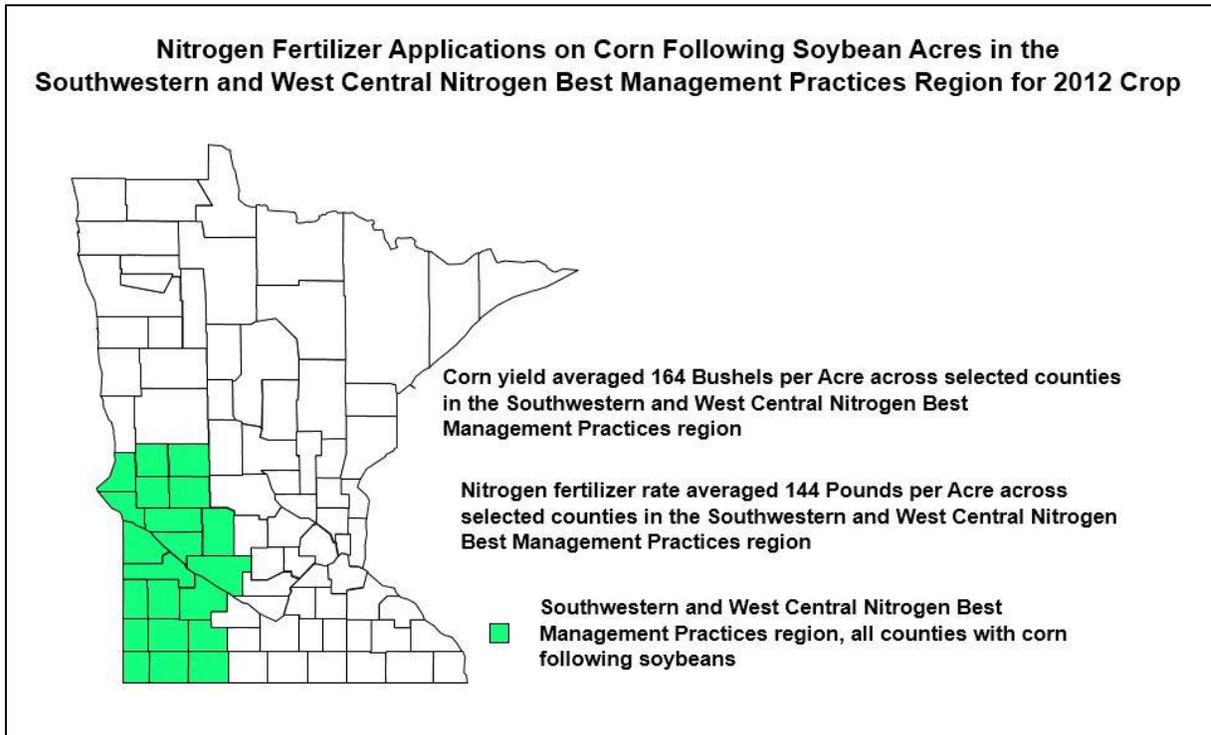


Figure 15. The corn yield averaged 164 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre in the SW BMP region.

Figure 16 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 18 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 16.

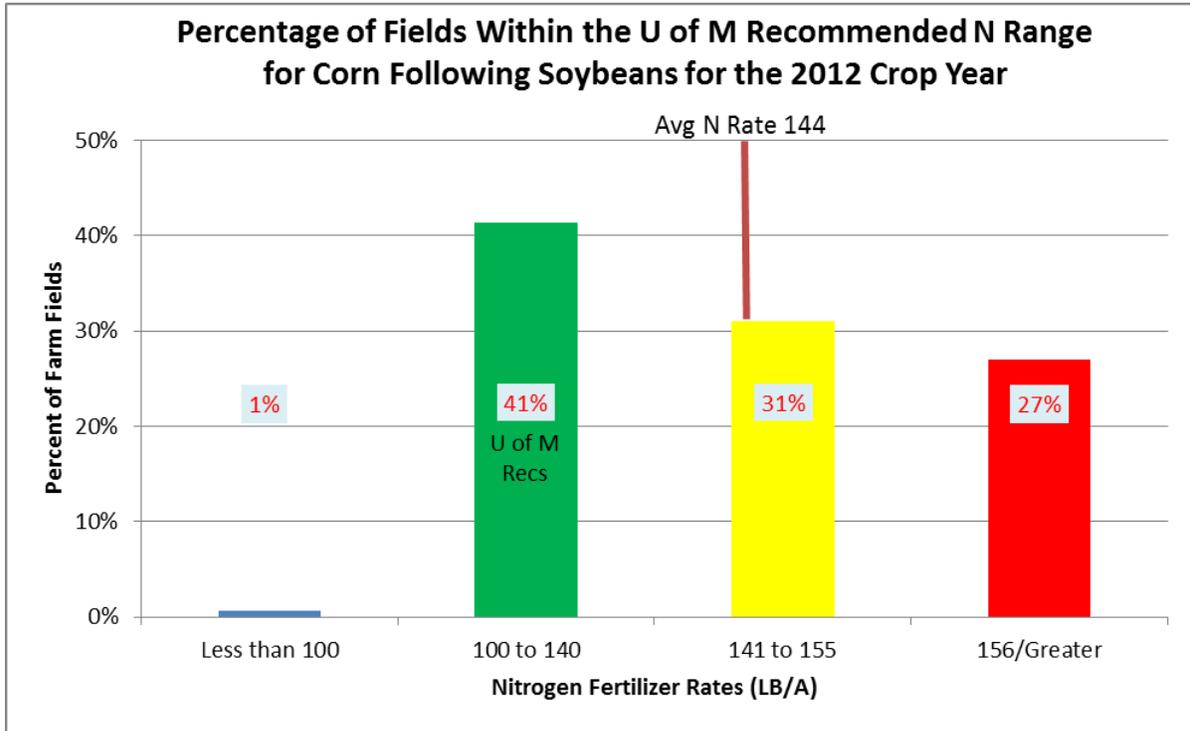


Figure 16. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SW BMP region for 2012: 326 fields.

Table 18. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	105	154	168	177
Avg N Rate LB/A	50	126	149	169

Figure 17 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 19 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 17.

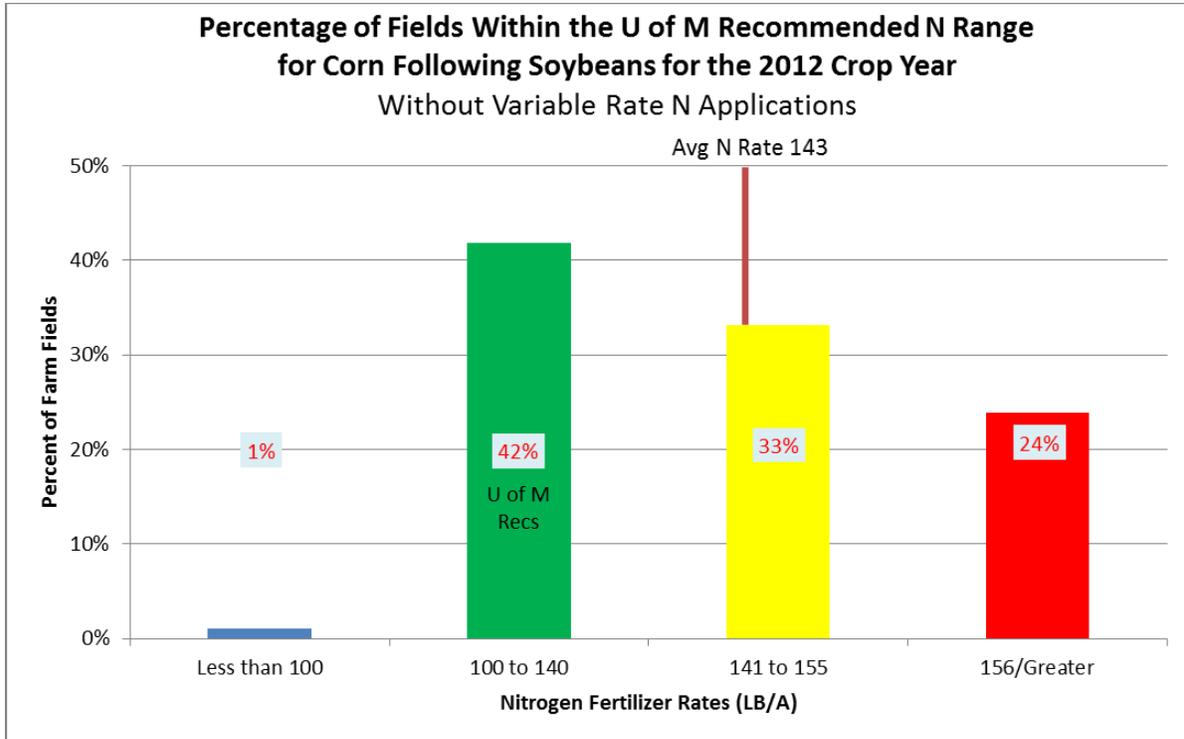


Figure 17. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SW BMP region for 2012: 184 fields.

Table 19. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	105	149	166	174
Avg N Rate LB/A	50	127	149	167

Figure 18 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 20 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 18.

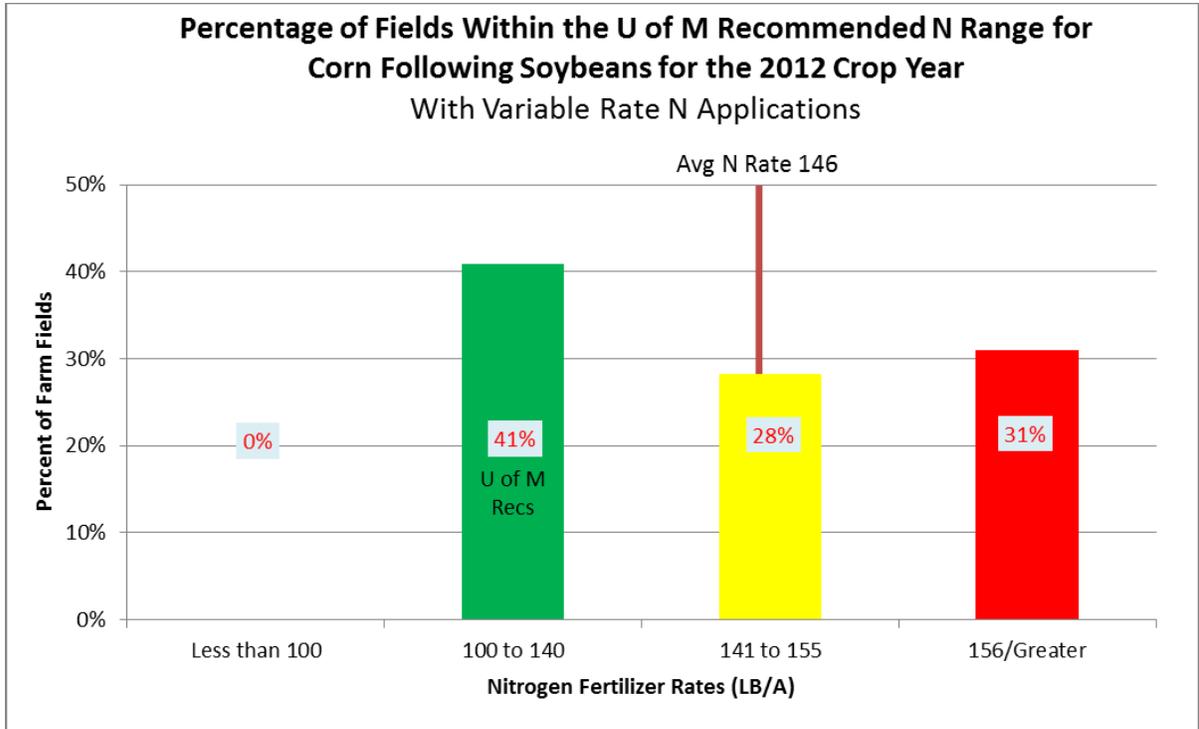


Figure 18. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SW BMP region for 2012: 142 fields.

Table 20. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	160	171	180
Avg N Rate LB/A	No Data	126	149	170

Northwestern Region: Corn Following Soybeans

There were 47 fields that were included in the NW BMP region corn following soybeans analysis. Figure 19 details the location, average rate of nitrogen fertilizer and average yield for corn following soybeans in the NW BMP region.

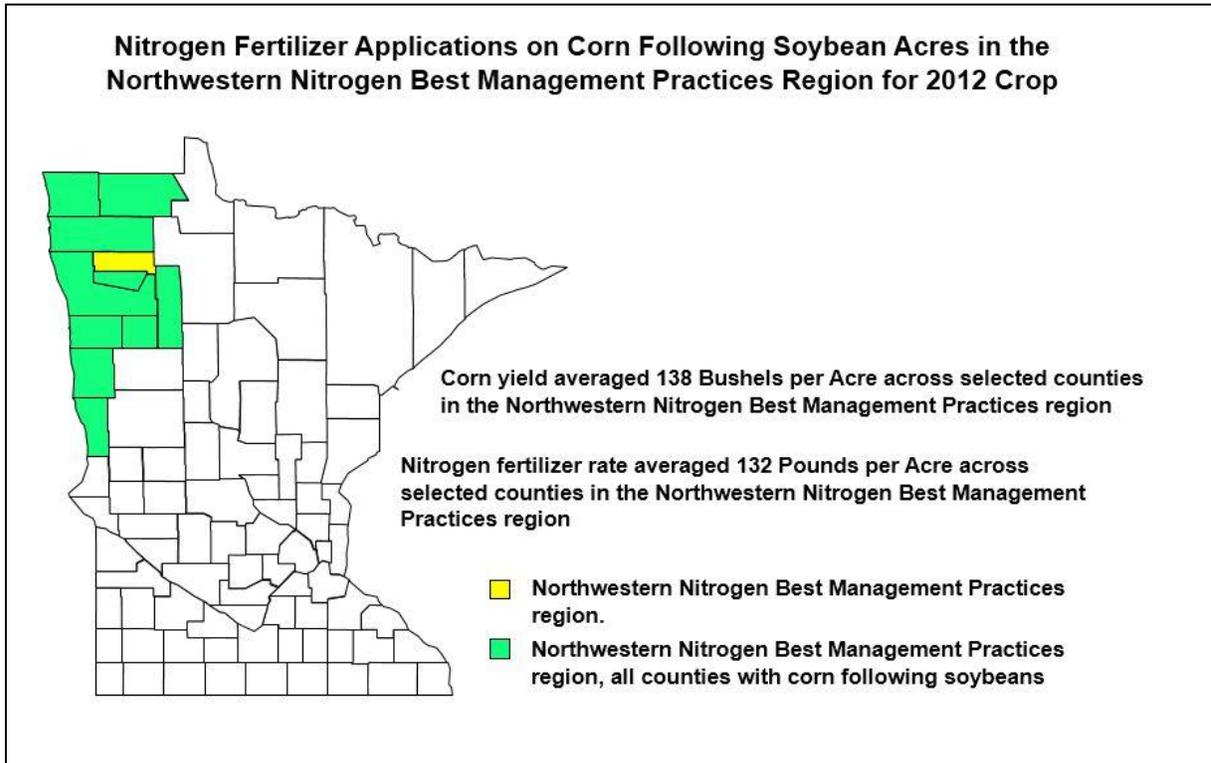


Figure 19. The corn yield averaged 138 bushels per acre and the nitrogen fertilizer rate averaged 132 pounds per acre in the NW BMP region.

Figure 20 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 21 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 20.

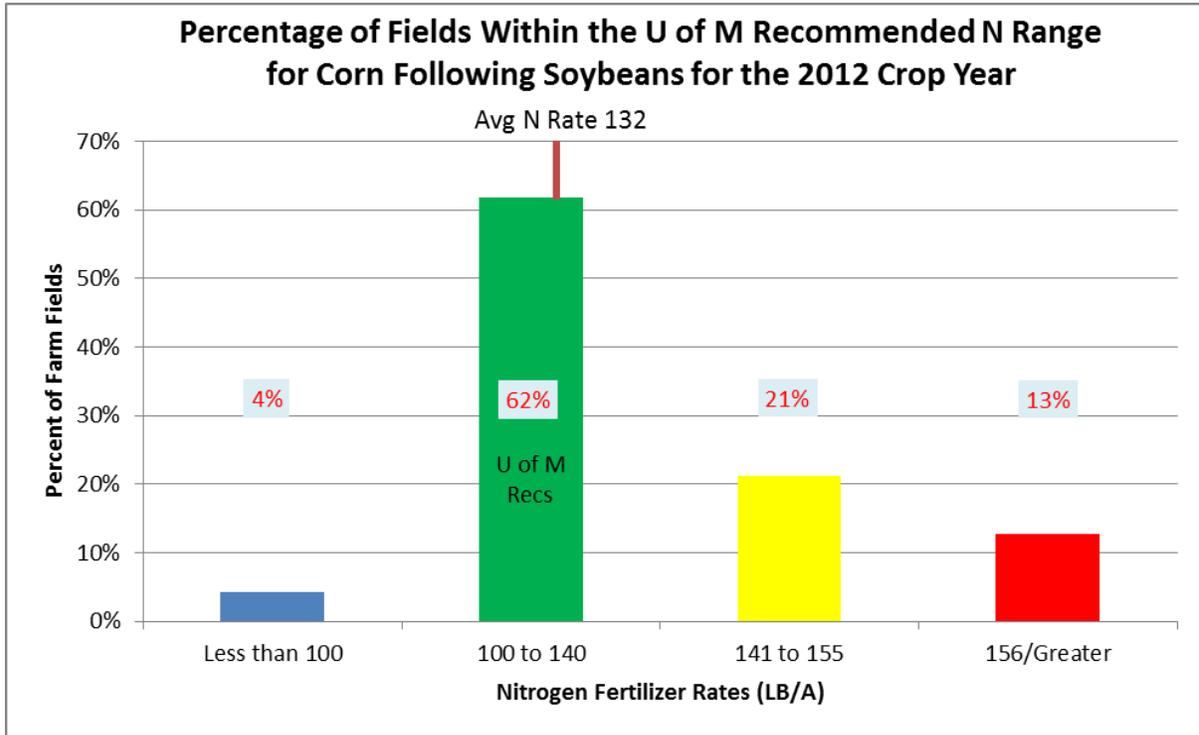


Figure 20. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the NW BMP region for 2012: 47 fields.

Table 21. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	123	128	151	167
Avg N Rate LB/A	79	123	148	169

Figure 21 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 22 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 21.

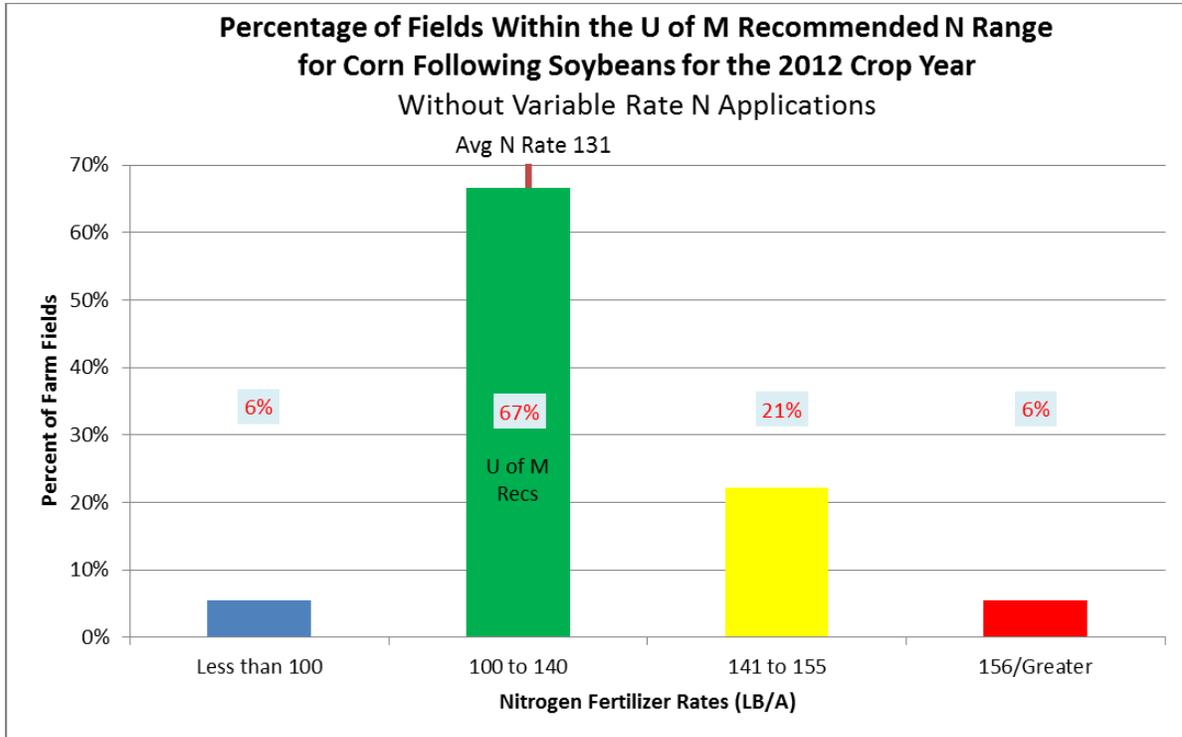


Figure 21. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the NW BMP region for 2012: 36 fields.

Table 22. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	123	129	152	175
Avg N Rate LB/A	79	125	149	184

Figure 22 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 23 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 22.

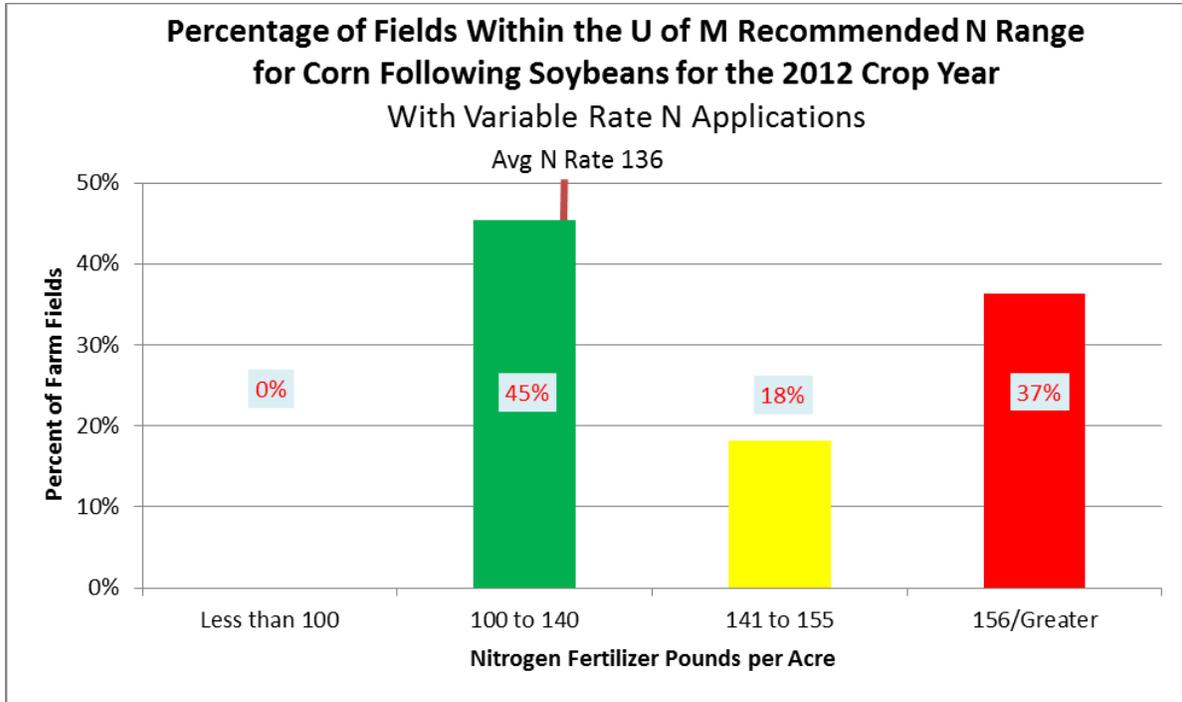


Figure 22. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the NW BMP region for 2012: 11 fields.

Table 23. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	126	145	163
Avg N Rate LB/A	No Data	112	145	161

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

There were 160 fields that were included in the IRR BMP region corn following soybeans analysis. Figure 23 details the location, average rate of nitrogen fertilizer and average yield for corn following soybeans in the IRR BMP region.

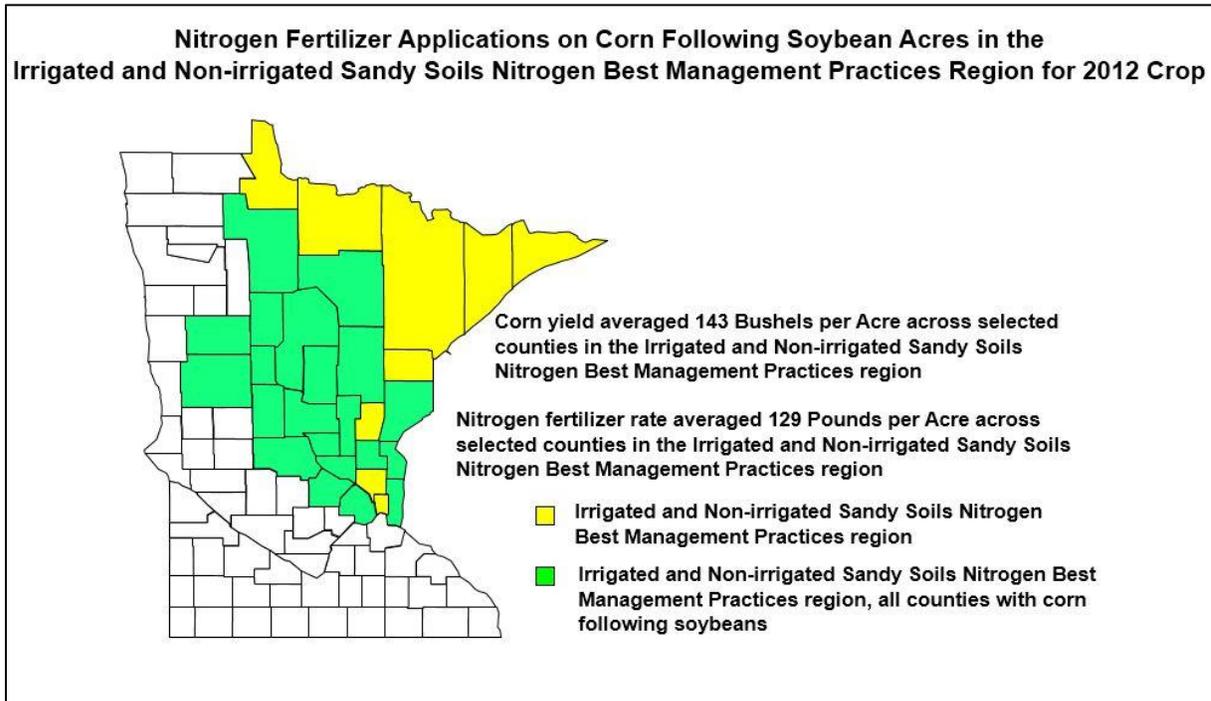


Figure 23. The corn yield averaged 143 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre in the IRR BMP region.

Figure 24 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 24 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 24.

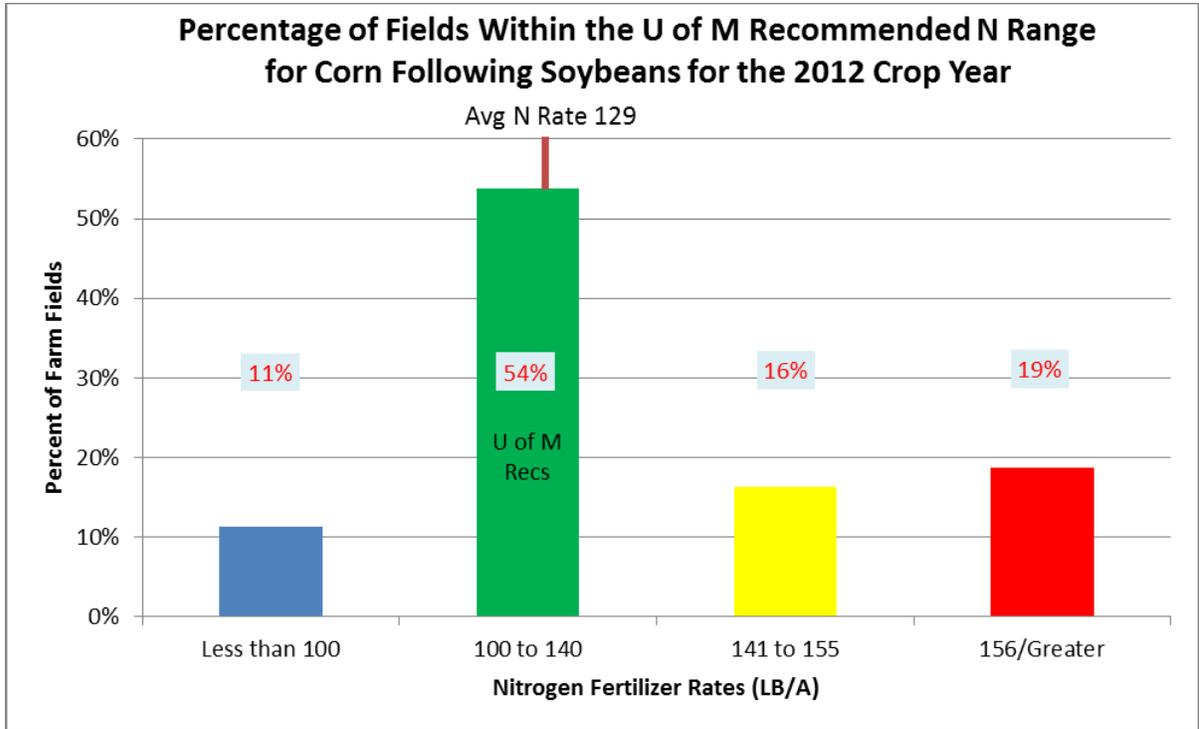


Figure 24. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 160 fields.

Table 24. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	112	134	152	179
Avg N Rate LB/A	77	120	150	168

Figure 25 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 25 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 25.

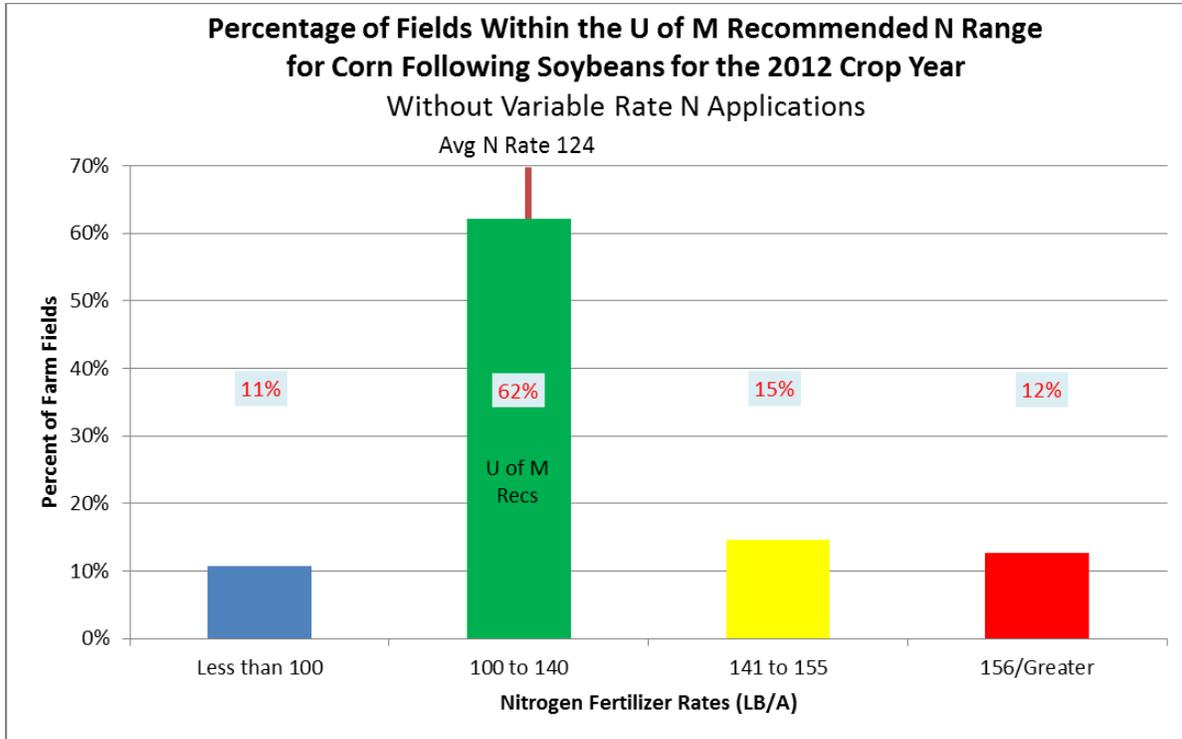


Figure 25. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the IRR BMP region for 2012: 103 fields.

Table 25. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	112	134	153	167
Avg N Rate LB/A	72	119	150	168

Figure 26 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 26 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 26.

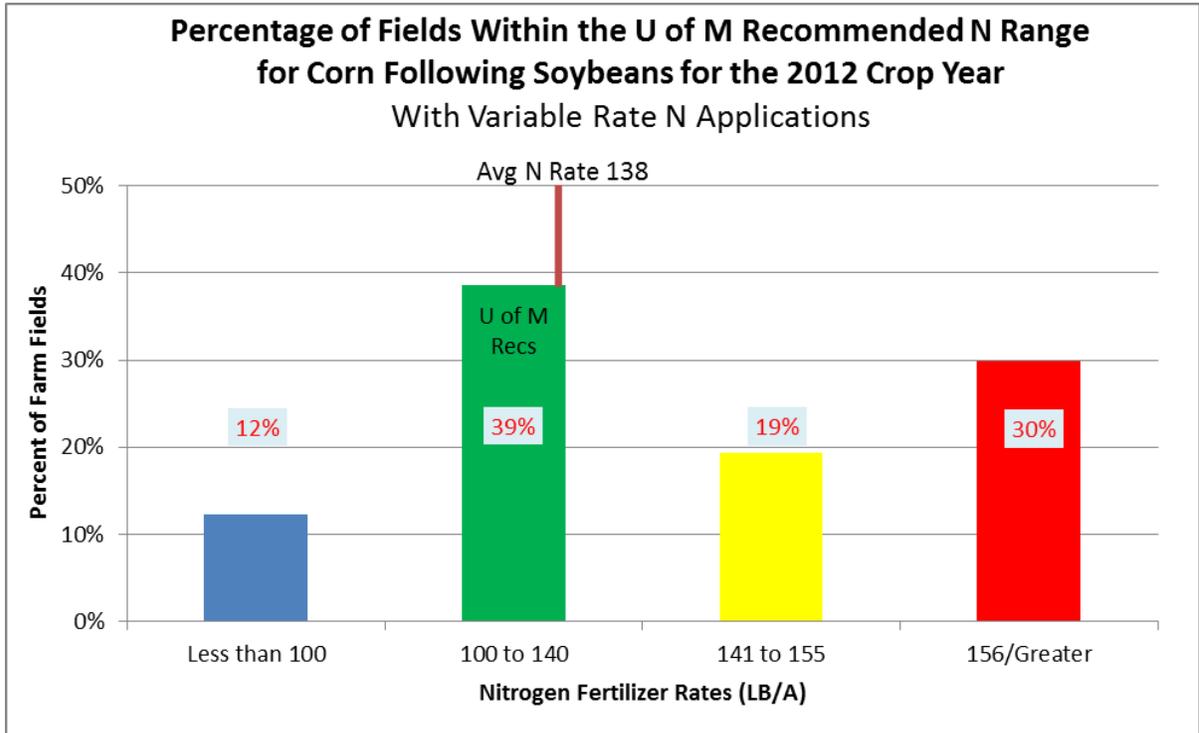


Figure 26. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the IRR BMP region for 2012: 57 fields.

Table 26. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	112	134	151	188
Avg N Rate LB/A	86	124	150	169

Statewide: Corn Following Corn

Statewide, thirty-five percent of the fields reported corn following corn (Figure 27). There were 589 fields surveyed in Minnesota.

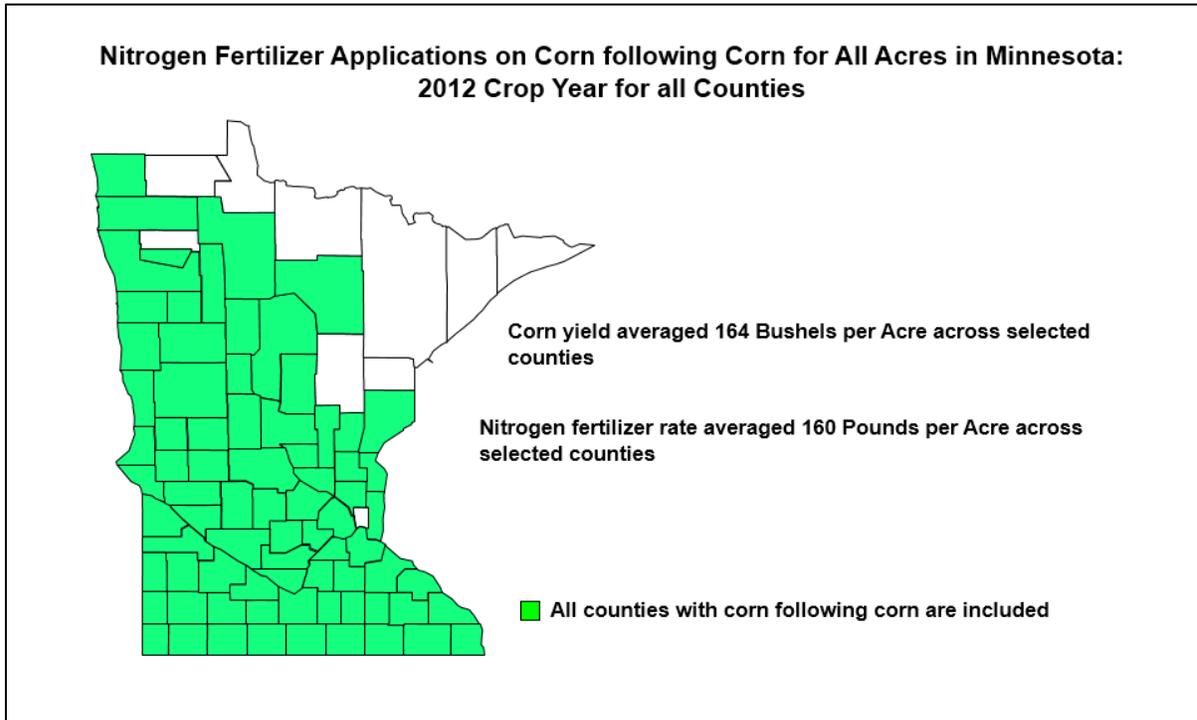


Figure 27. The corn yield averaged 164 bushels per acre and the nitrogen fertilizer rate averaged 160 pounds per acre on fields with corn following corn in Minnesota.

Figure 28 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 27 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 28.

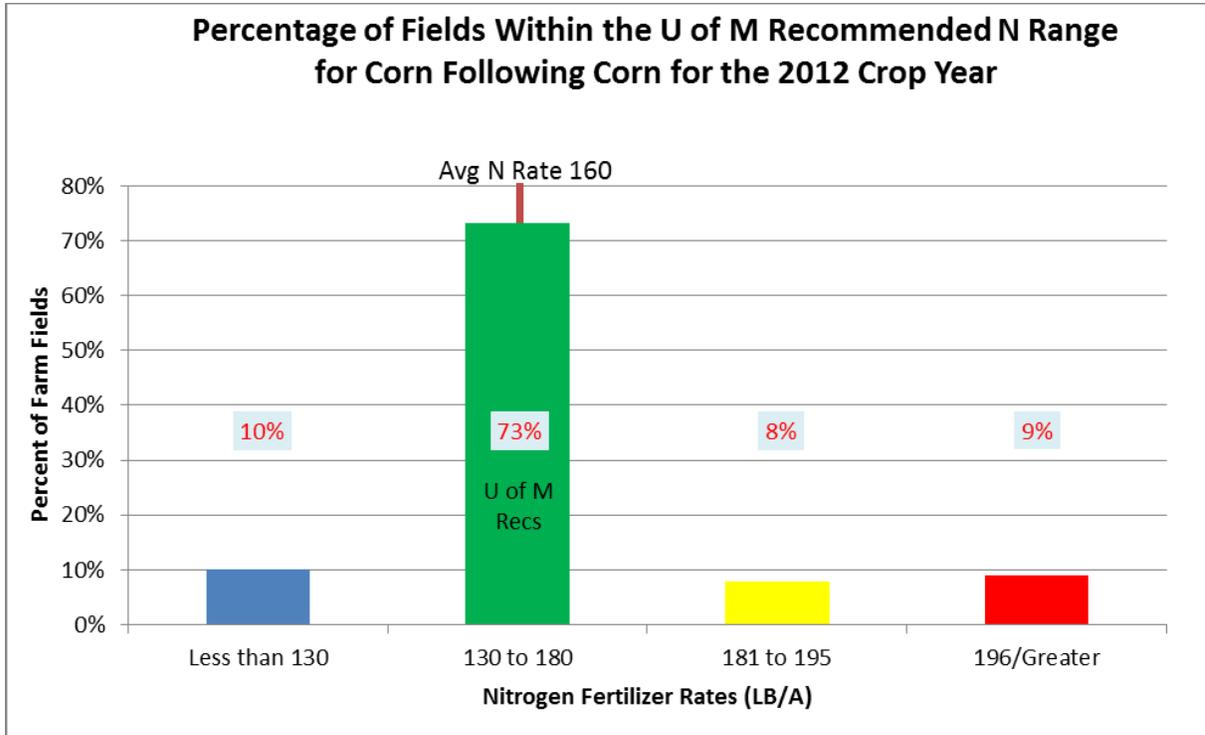


Figure 28. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in Minnesota for 2012: 589 fields.

Table 27. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	125	164	177	190
Avg N Rate LB/A	106	159	188	201

Figure 29 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 28 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 29.

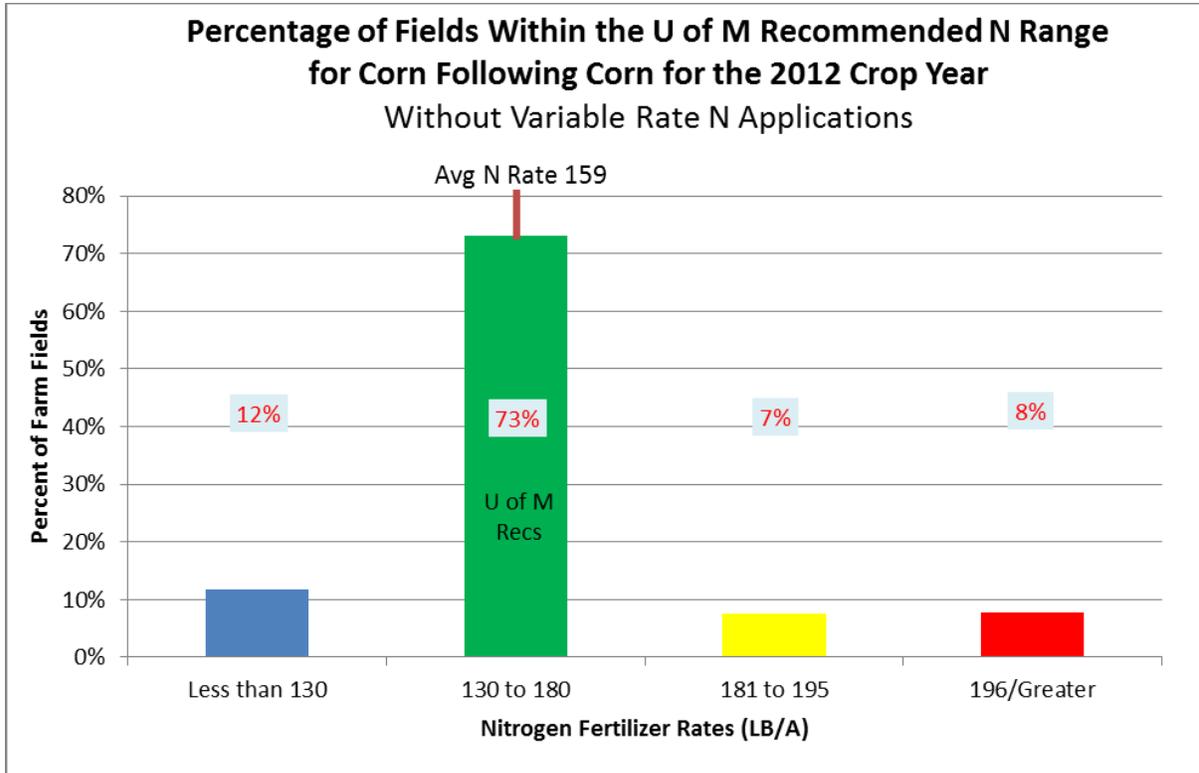


Figure 29. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in Minnesota for 2012: 349 fields.

Table 28. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	123	162	178	188
Avg N Rate LB/A	107	159	187	201

Figure 30 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 29 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 30.

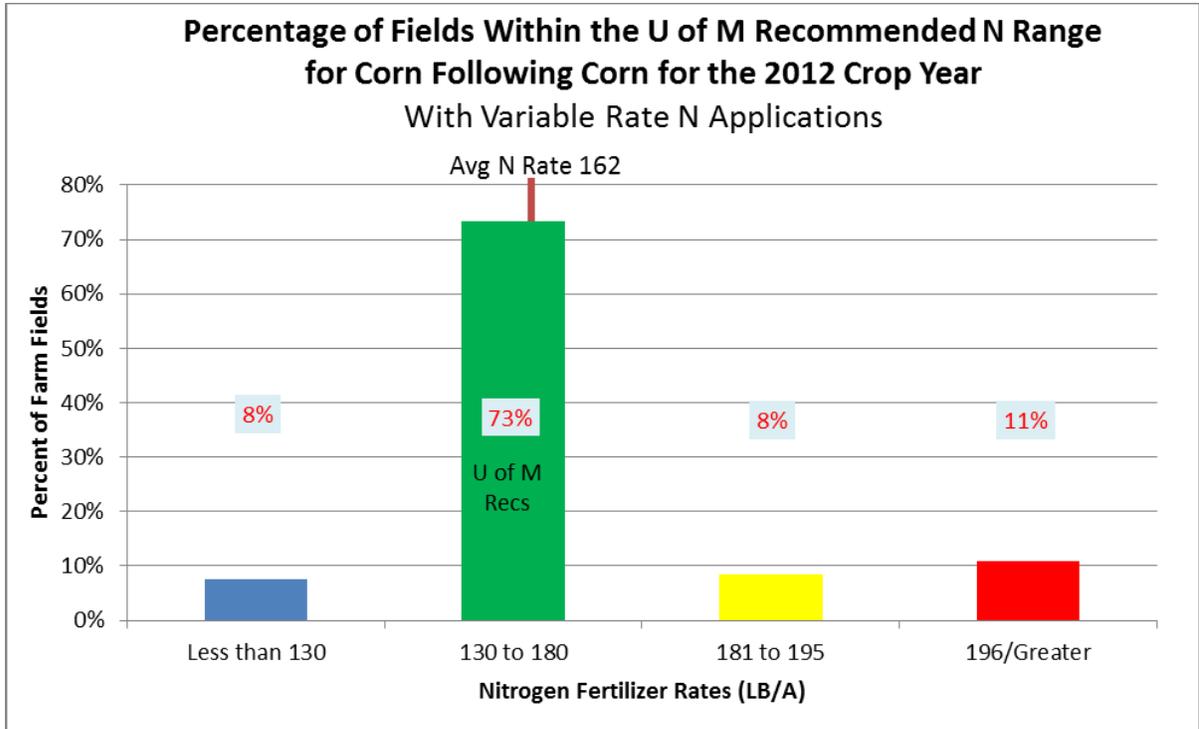


Figure 30. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in Minnesota for 2012: 240 fields.

Table 29. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	131	167	177	192
Avg N Rate LB/A	103	159	189	202

Southeastern Region: Corn Following Corn

There were 70 fields that were included in the SE BMP region corn following corn analysis. Figure 31 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the SE BMP region.

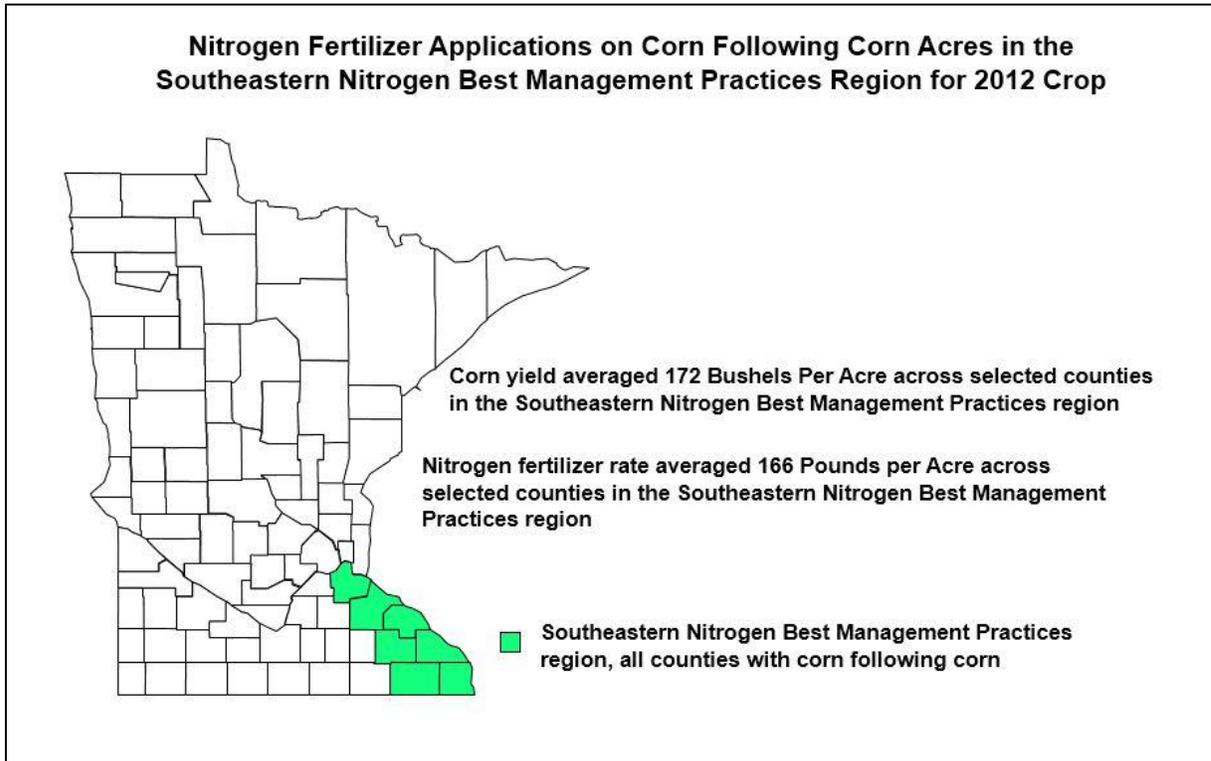


Figure 31. The corn yield averaged 172 bushels per acre and the nitrogen fertilizer rate averaged 166 pounds per acre in the SE BMP region.

Figure 32 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 30 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 32.

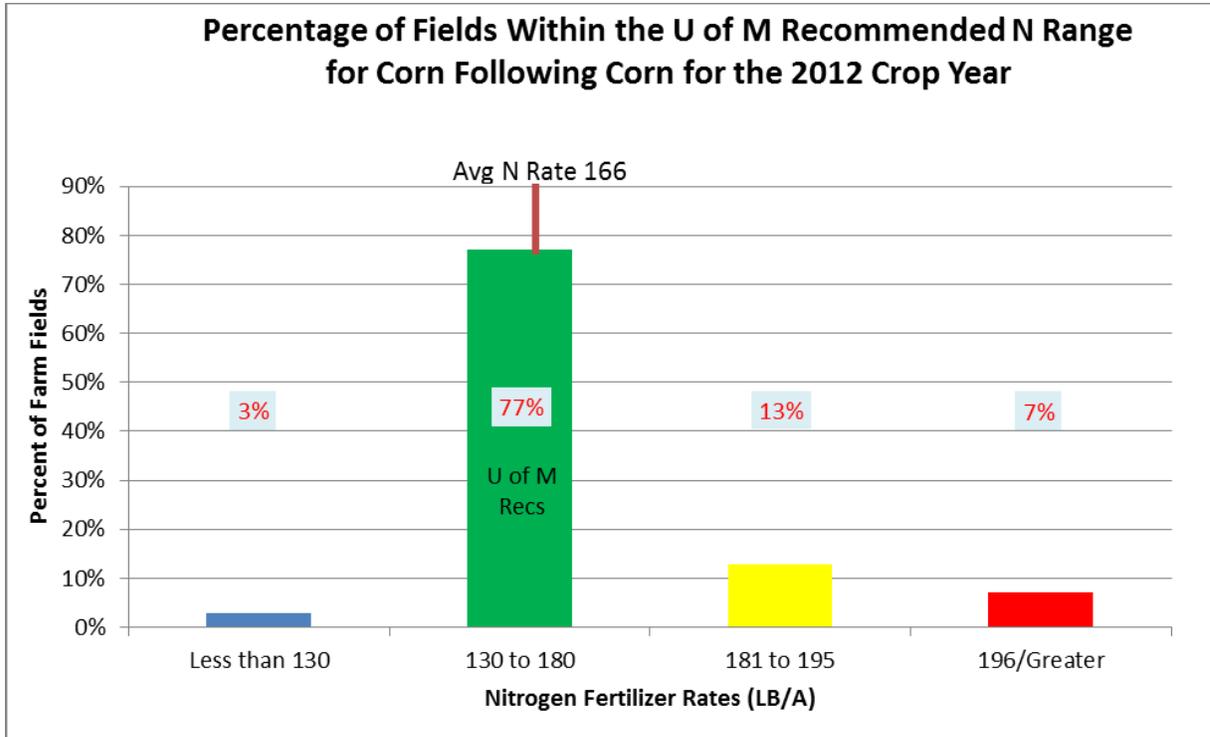


Figure 32. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SE BMP region for 2012: 70 fields.

Table 30. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	145	169	193	182
Avg N Rate LB/A	105	162	186	199

Figure 33 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 31 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 33.

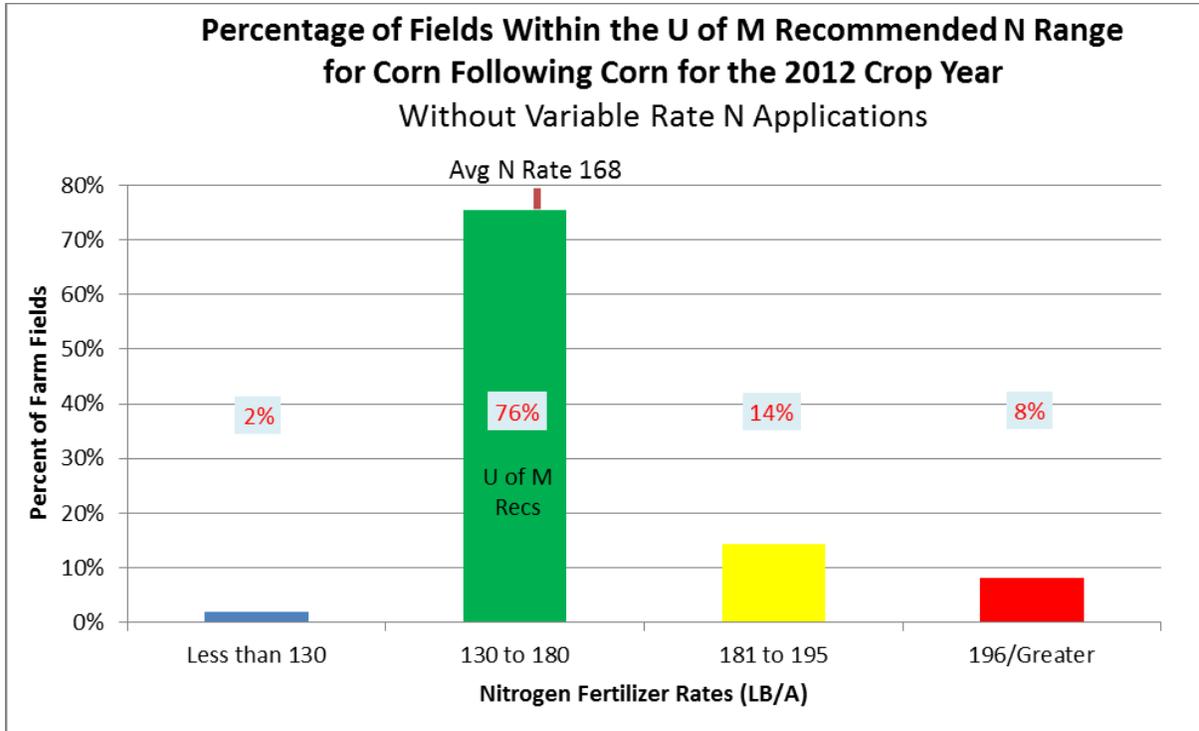


Figure 33. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SE BMP region for 2012: 49 fields

Table 31. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	110	167	194	178
Avg N Rate LB/A	110	162	185	199

Figure 34 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 32 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 34.

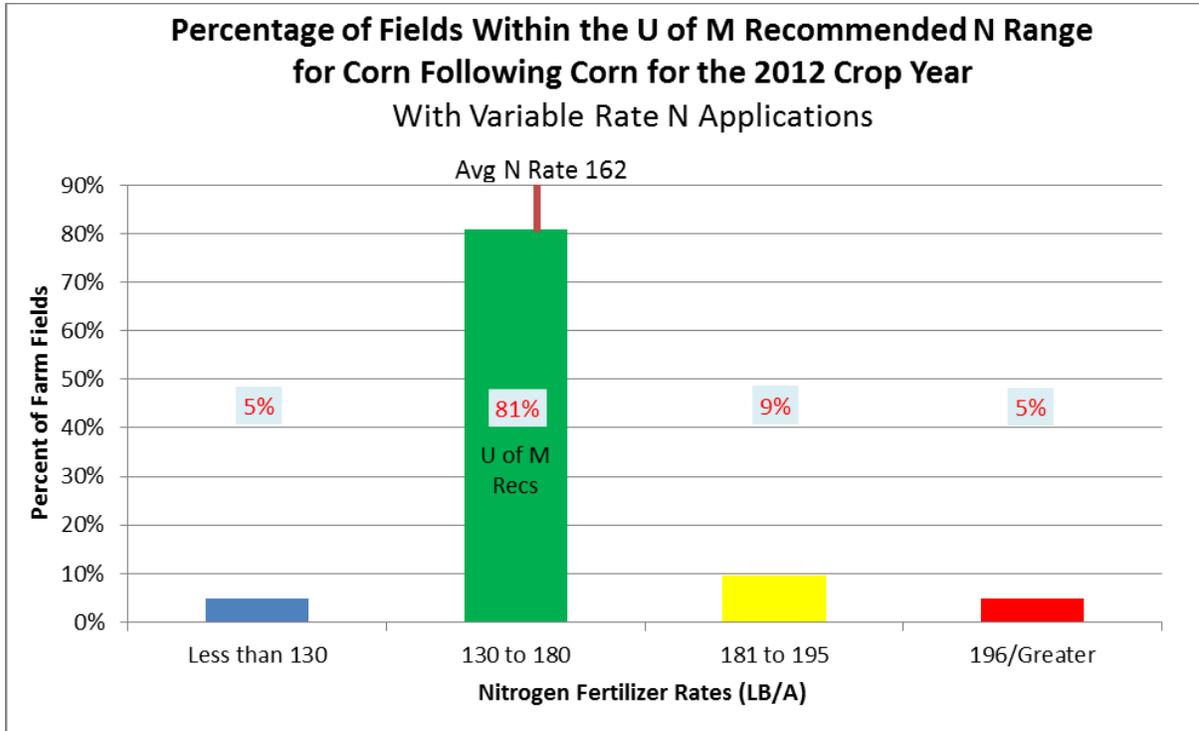


Figure 34. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SE BMP region for 2012: 21 fields.

Table 32. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	180	172	192	200
Avg N Rate LB/A	100	161	187	200

South Central Region: Corn Following Corn

There were 185 fields that were included in the SC BMP region corn following corn analysis. Figure 35 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the SC BMP region.

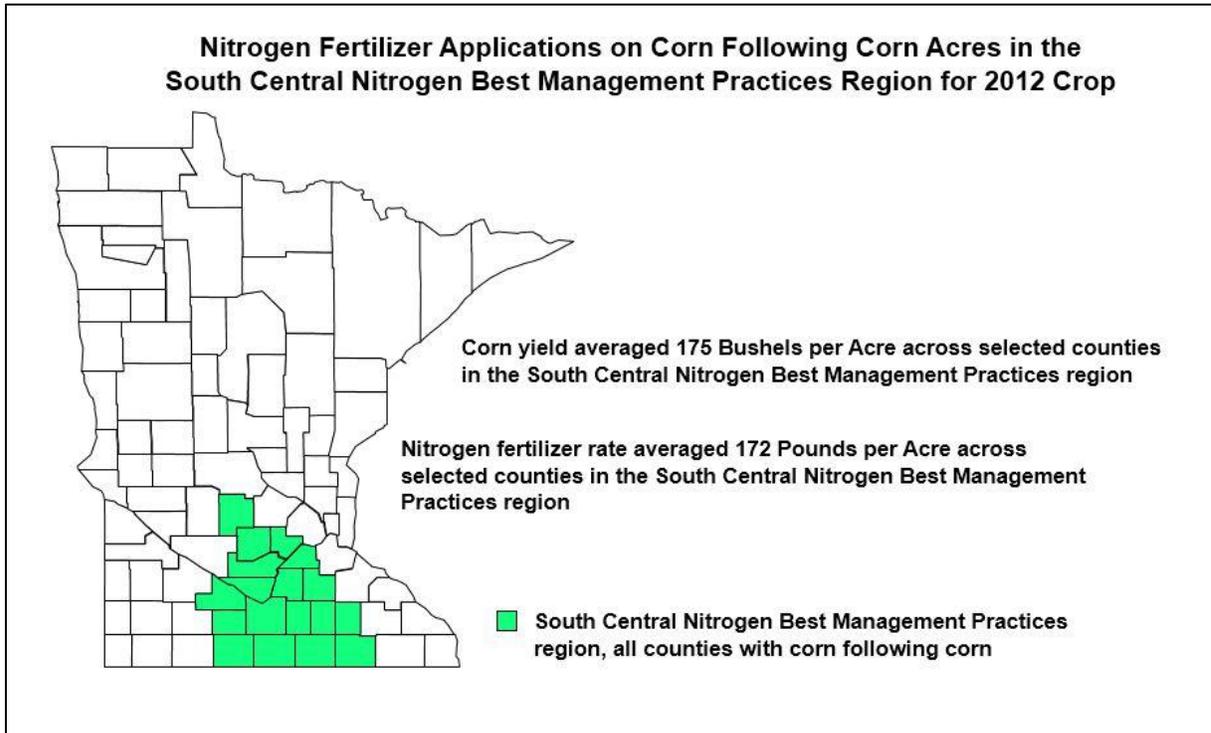


Figure 35. The corn yield averaged 175 bushels per acre and the nitrogen fertilizer rate averaged 172 pounds per acre in the SC BMP region.

Figure 36 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 33 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 36.

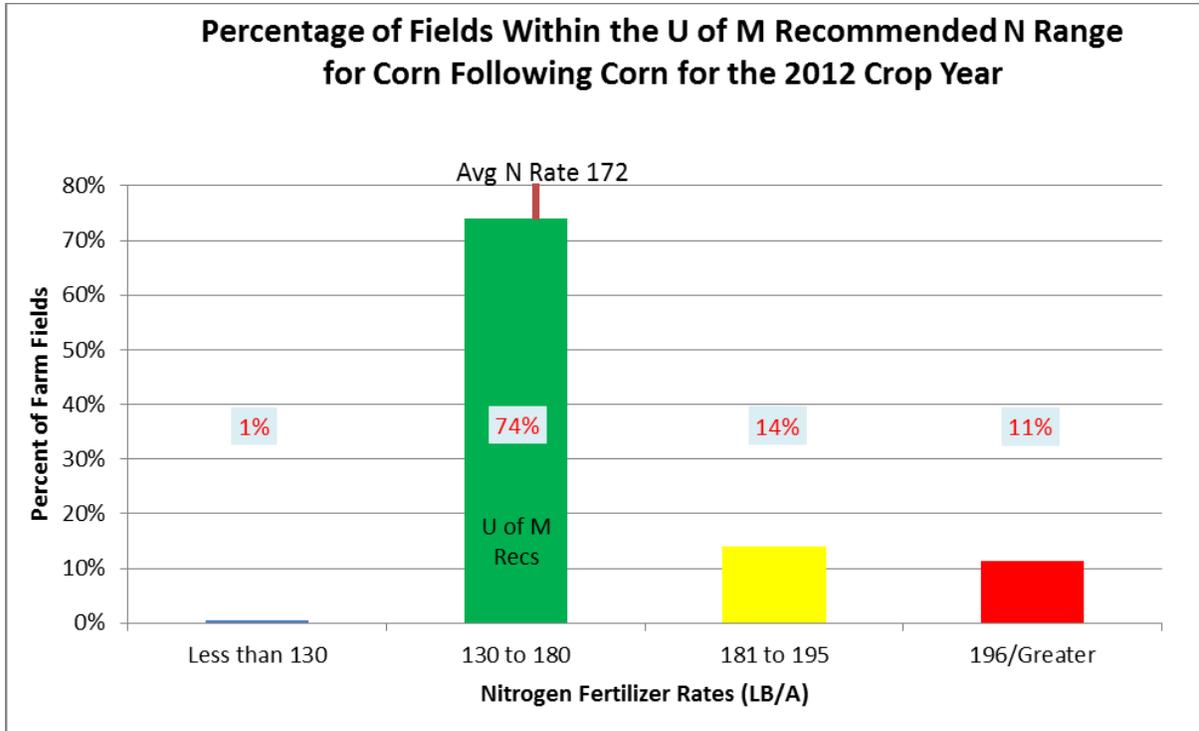


Figure 36. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SC BMP region for 2012: 185 fields.

Table 33. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	174	172	187
Avg N Rate LB/A	124	164	189	203

Figure 37 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 34 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 37.

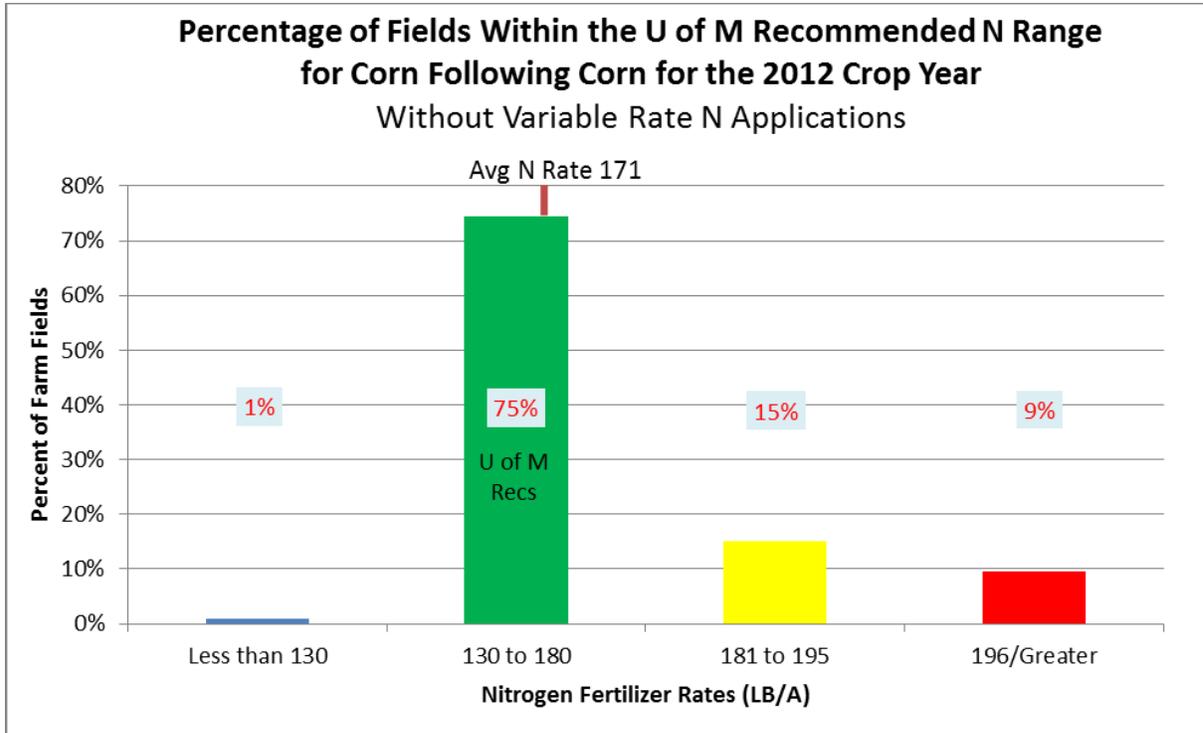


Figure 37. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SC BMP region for 2012: 106 fields.

Table 34. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	172	173	185
Avg N Rate LB/A	124	165	188	201

Figure 38 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 35 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 38.

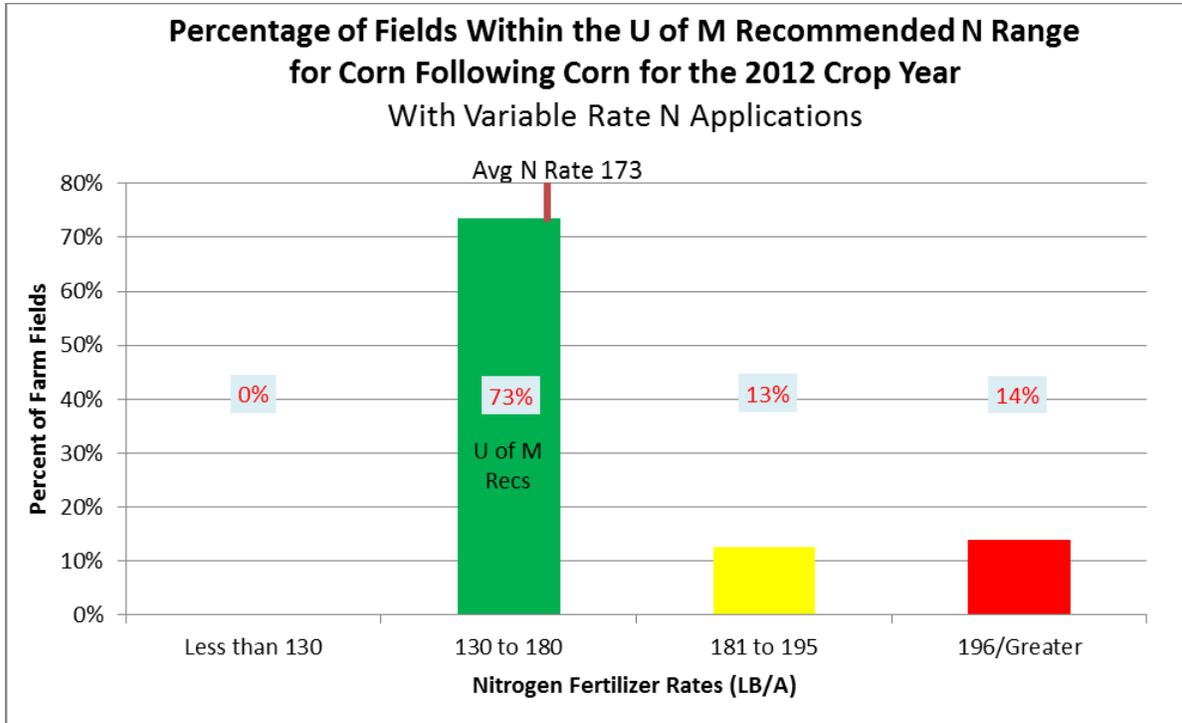


Figure 38. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SC BMP region for 2012: 79 fields.

Table 35. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	177	171	189
Avg N Rate LB/A	No Data	164	190	205

Southwestern and West Central Region: Corn Following Corn

There were 178 fields that were included in the SW BMP region corn following corn analysis. Figure 39 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the SW BMP region.

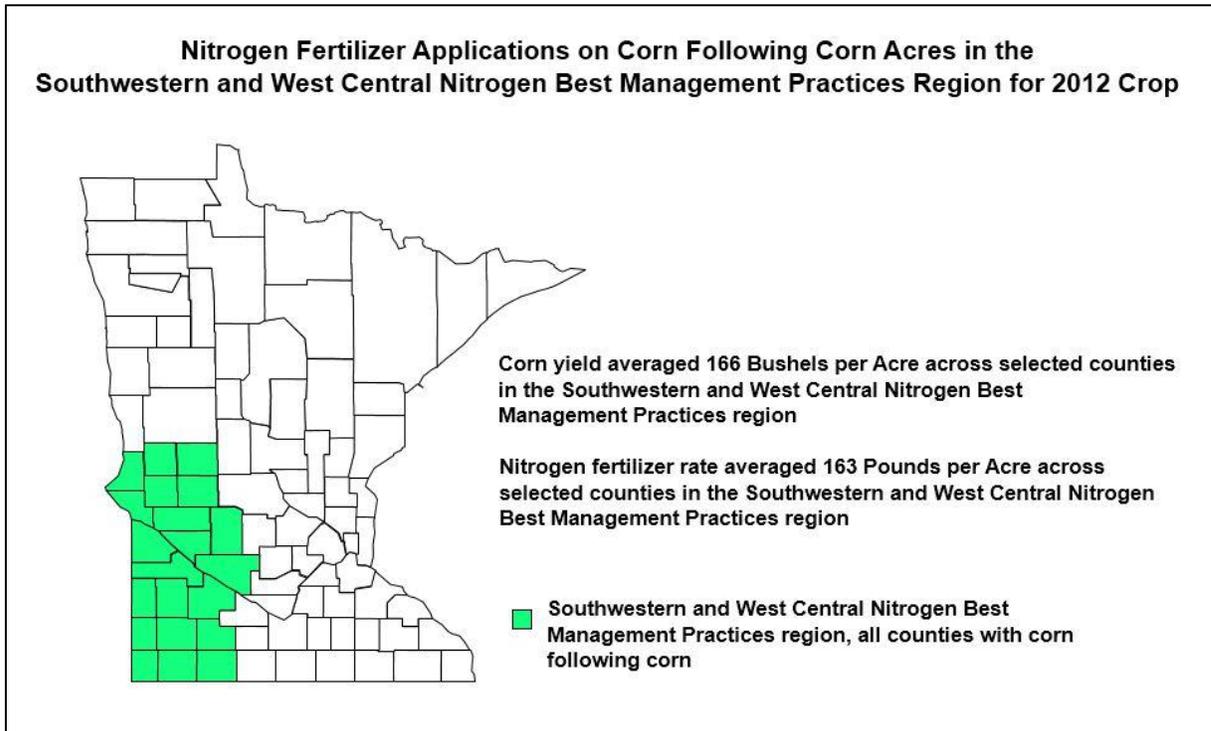


Figure 39. The corn yield averaged 166 bushels per acre and the nitrogen fertilizer rate averaged 163 pounds per acre in the SW BMP region.

Figure 40 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 36 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 40.

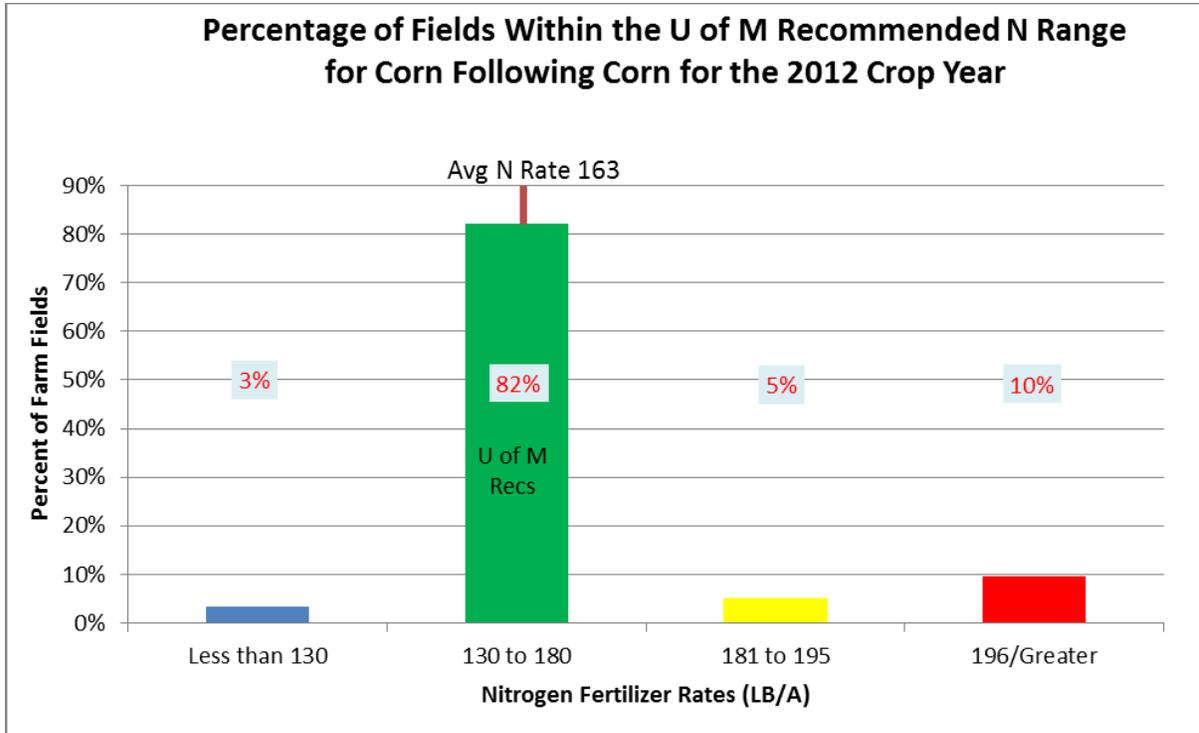


Figure 40. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SW BMP region for 2012: 178 fields.

Table 36. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	140	164	178	191
Avg N Rate LB/A	118	158	188	200

Figure 41 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 37 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 41.

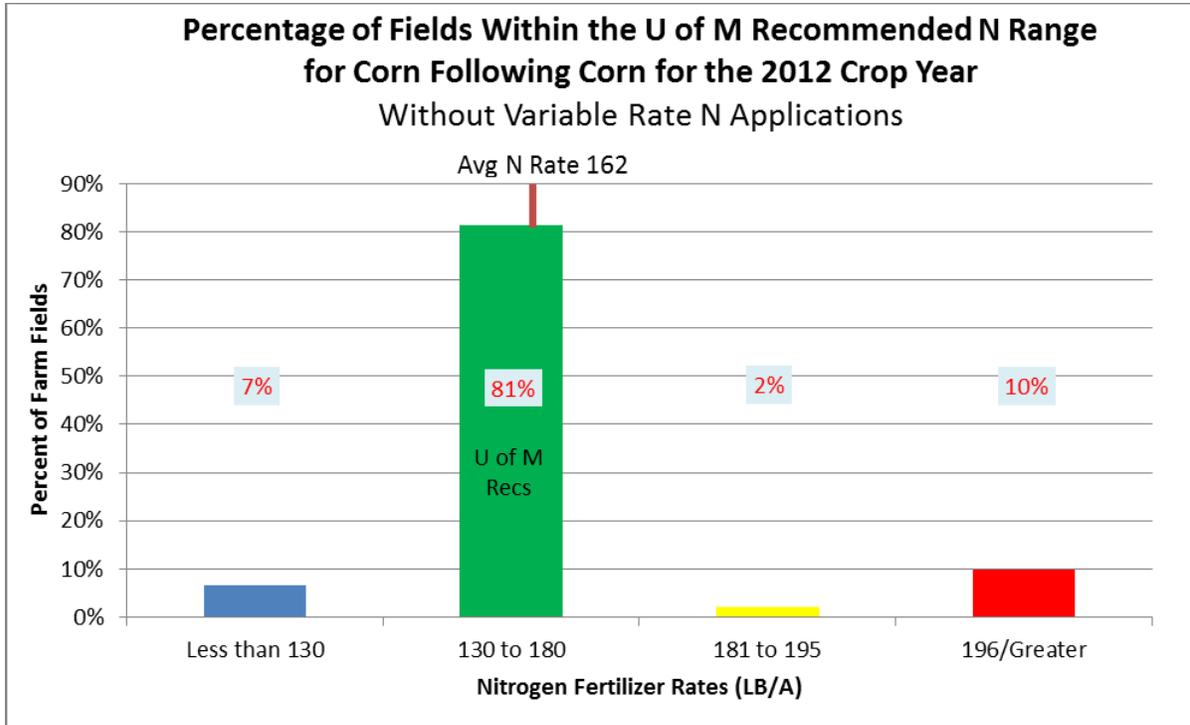


Figure 41. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SW BMP region for 2012: 91 fields.

Table 37. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	140	162	169	195
Avg N Rate LB/A	118	160	185	200

Figure 42 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 38 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 42.

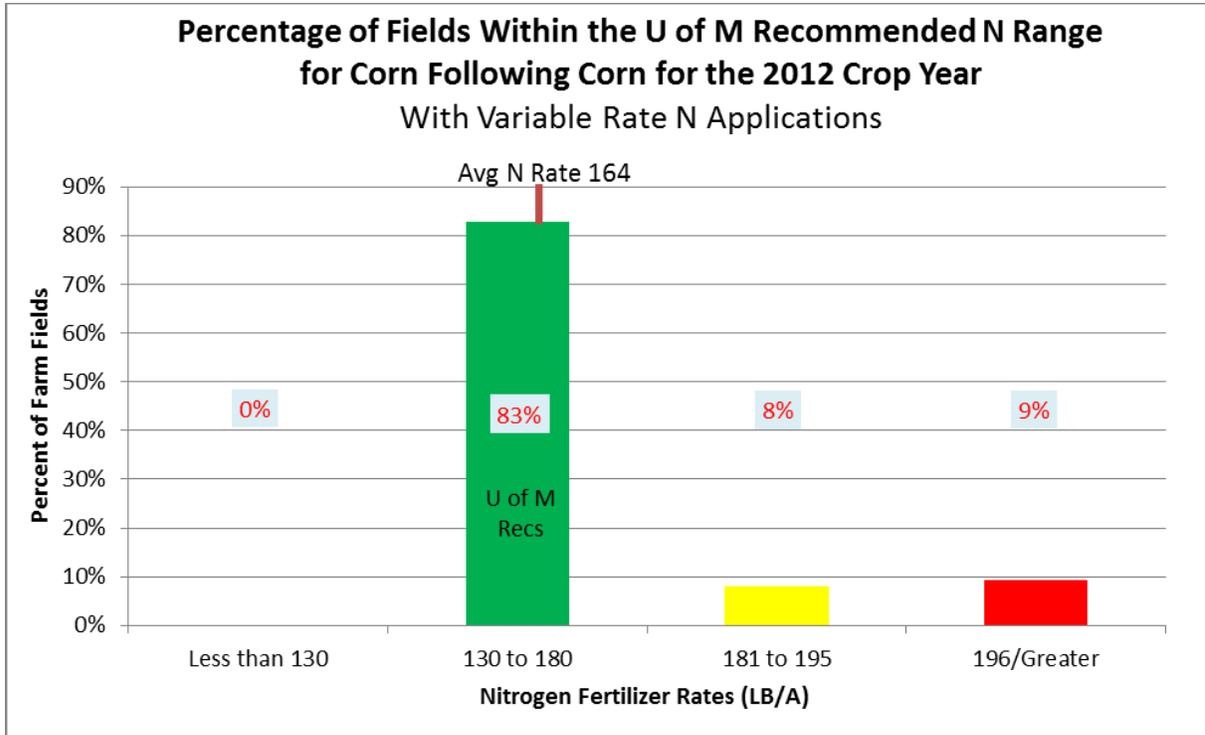


Figure 42. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SW BMP region for 2012: 87 fields.

Table 38. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	166	180	187
Avg N Rate LB/A	No Data	157	188	200

Northwestern Region: Corn Following Corn

There were 23 fields that were included in the NW BMP region corn following corn analysis. Figure 43 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the NW BMP region.

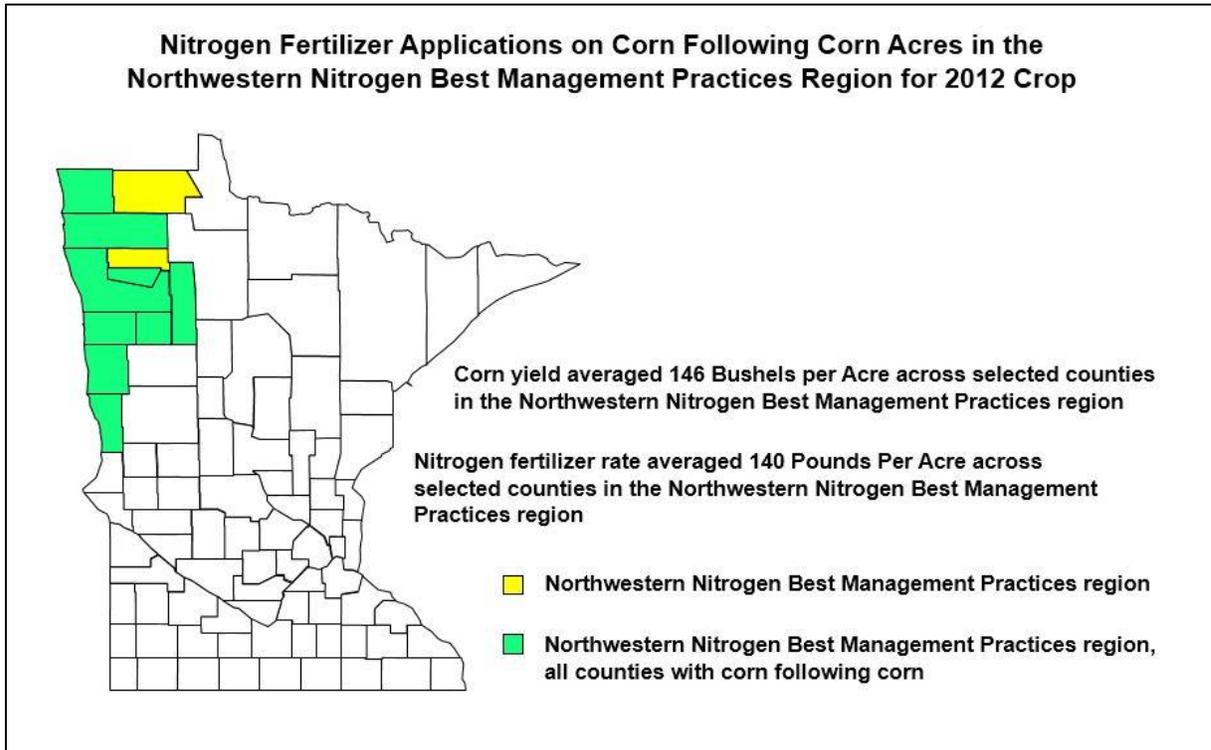


Figure 43. The corn yield averaged 146 bushels per acre and the nitrogen fertilizer rate averaged 140 pounds per acre in the NW BMP region.

Figure 44 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 39 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 44.

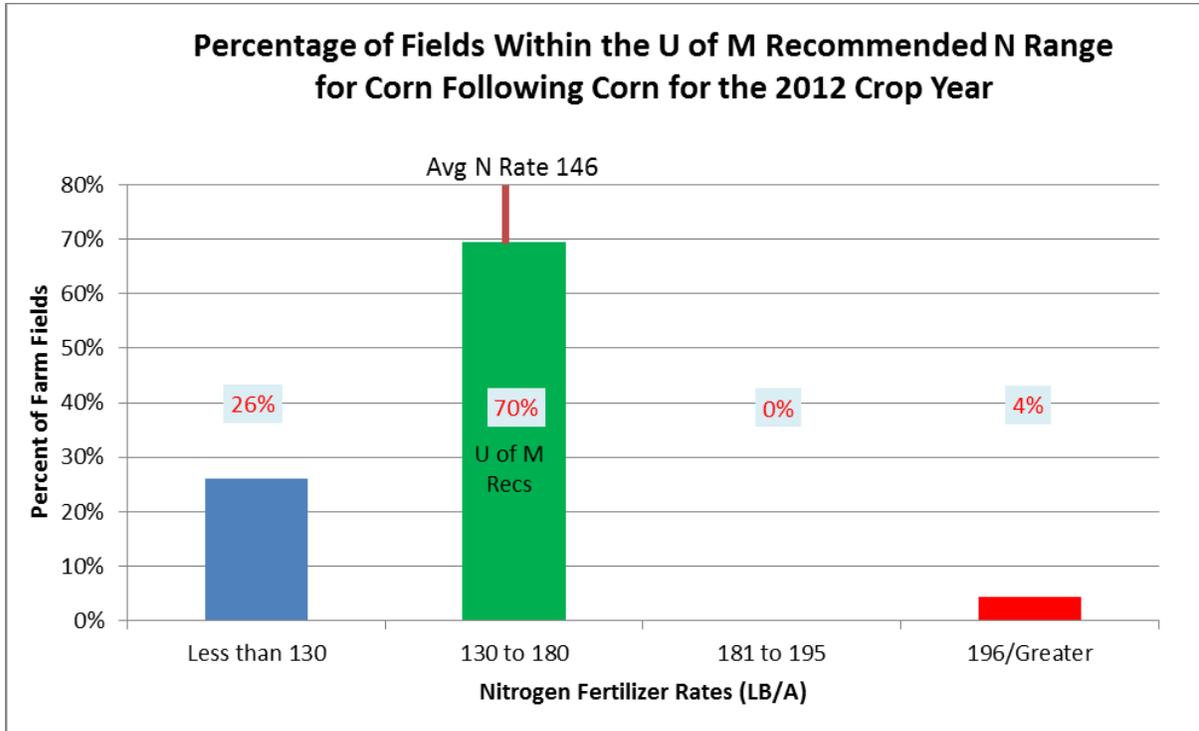


Figure 44. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the NW BMP region for 2012: 23 fields.

Table 39. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	112	147	No Data	196
Avg N Rate LB/A	107	157	No Data	208

Figure 45 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 40 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 45.

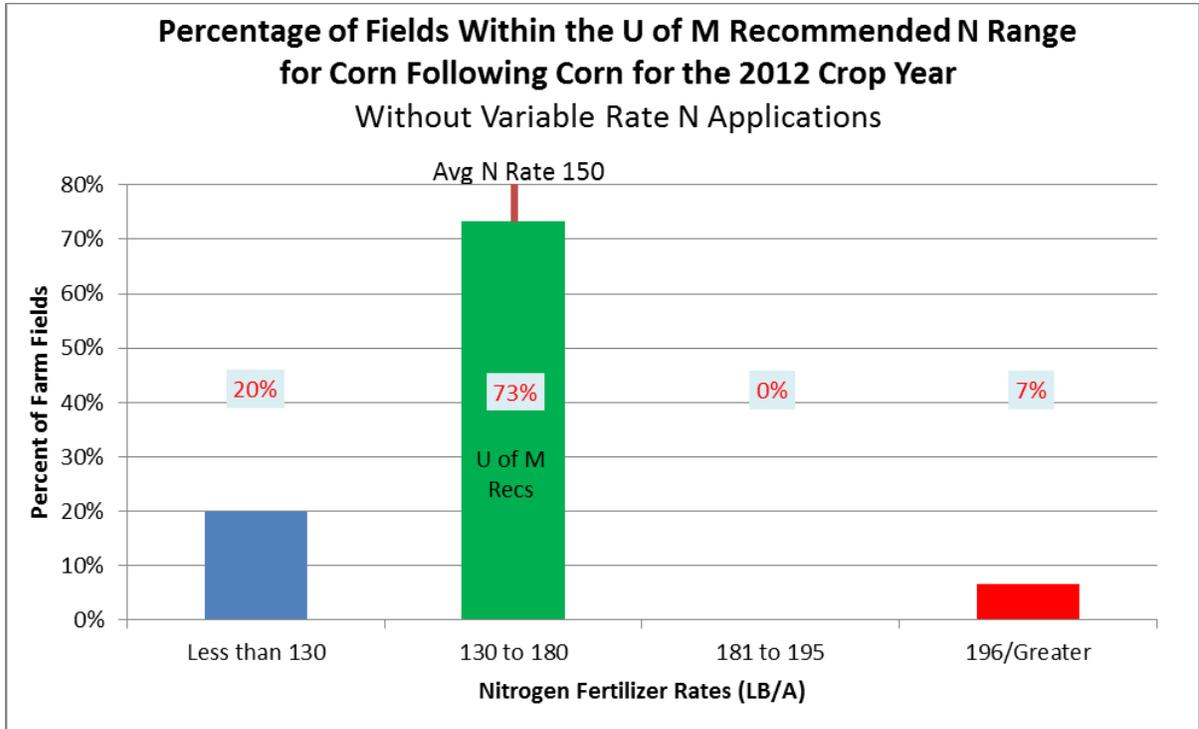


Figure 45. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the NW BMP region for 2012: 15 fields.

Table 40. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	118	150	No Data	196
Avg N Rate LB/A	111	155	No Data	208

Figure 46 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 41 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 46.

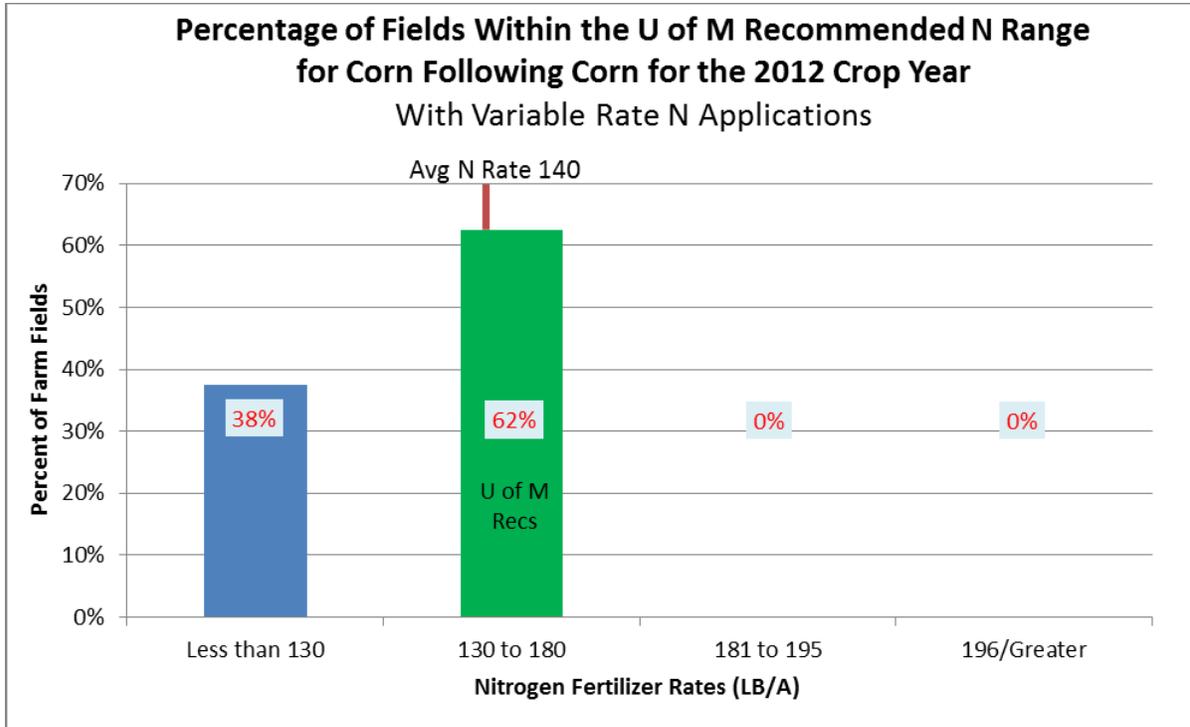


Figure 46. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the NW BMP region for 2012: 8 fields.

Table 41. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	107	140	No Data	No Data
Avg N Rate LB/A	104	161	No Data	No Data

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

There were 133 fields that were included in the IRR BMP region corn following corn analysis. Figure 47 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the IRR BMP region.

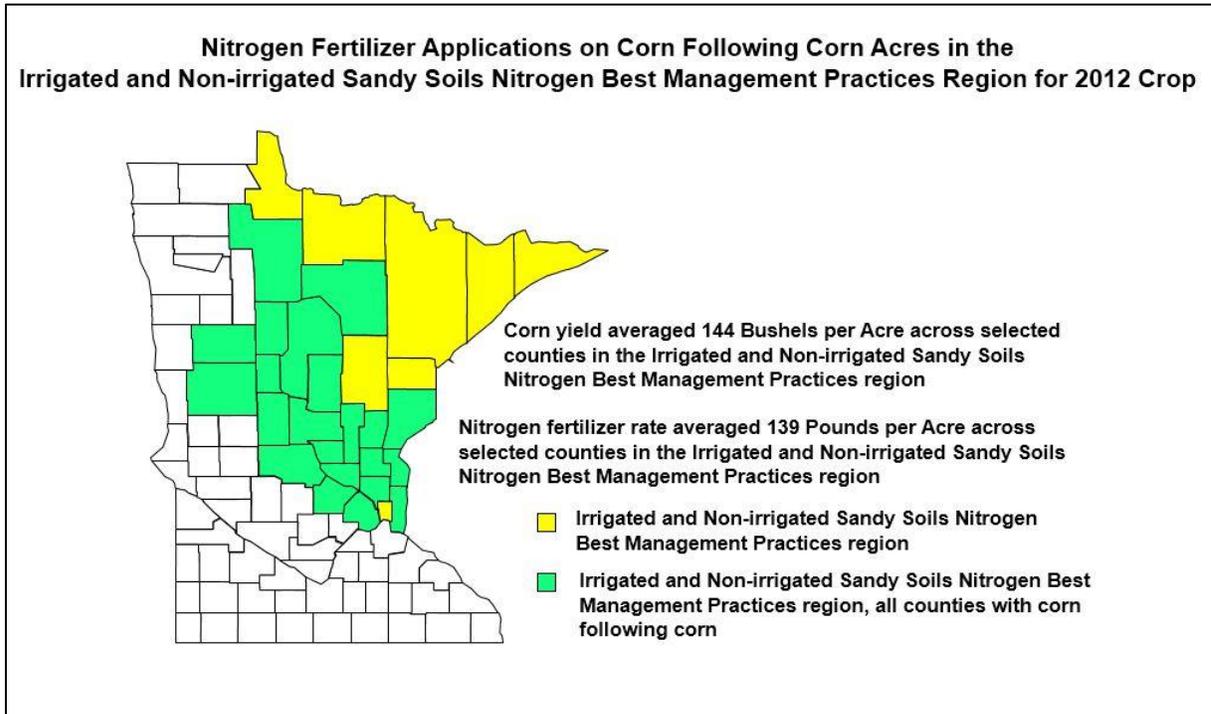


Figure 47. The corn yield averaged 144 bushels per acre and the nitrogen fertilizer rate averaged 139 pounds per acre in the IRR BMP region.

Figure 48 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 42 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 48.

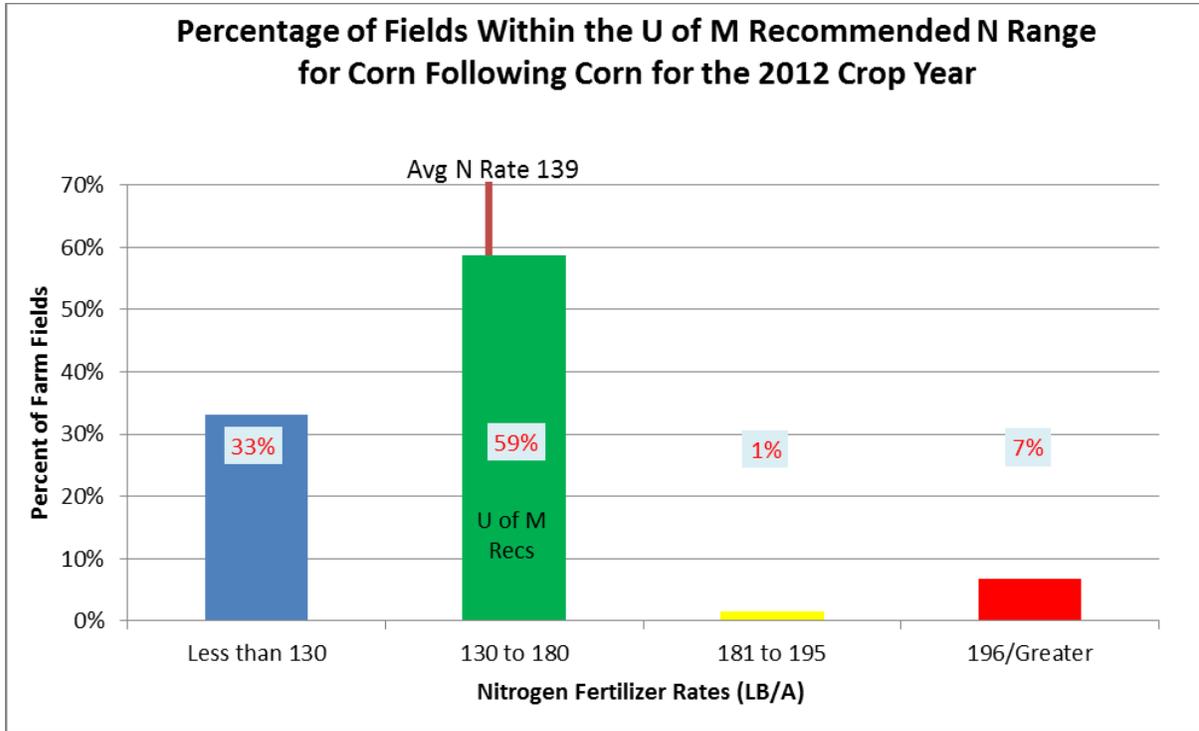


Figure 48. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 133 fields.

Table 42. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./acre	123	149	173	198
Avg N Rate LB/A	104	151	189	201

Figure 49 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 43 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 49.

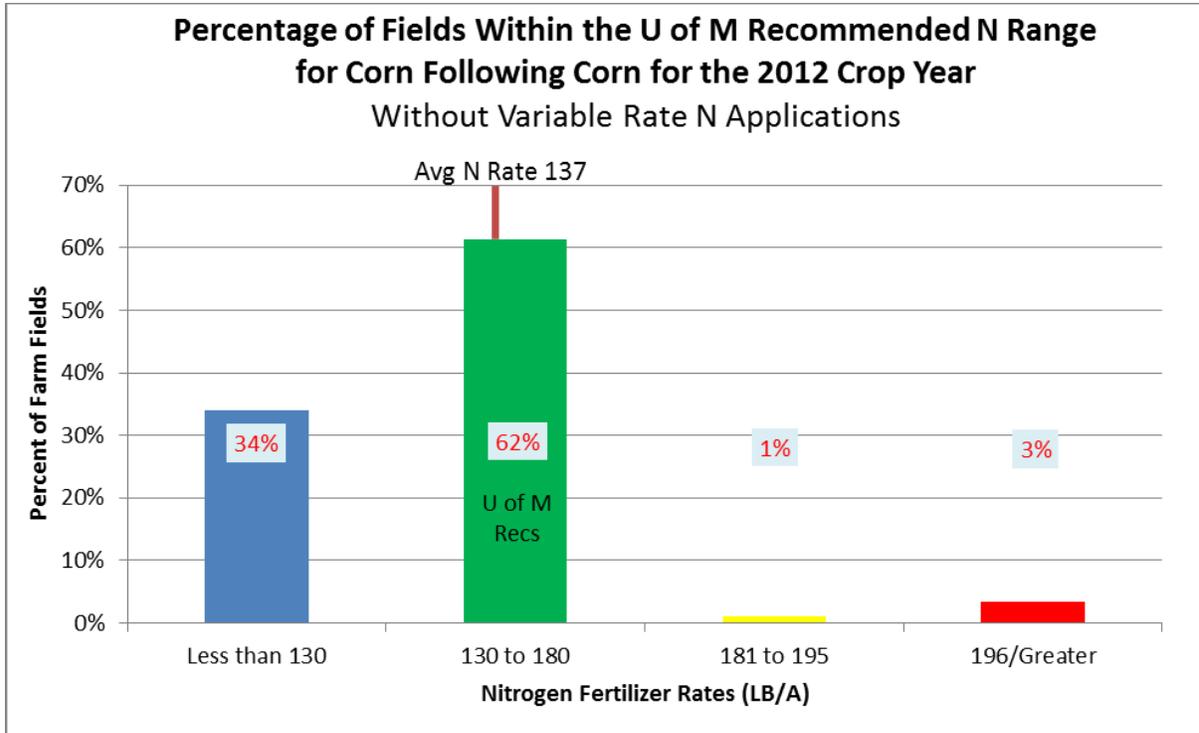


Figure 49. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the IRR BMP region for 2012: 88 fields.

Table 43. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	119	149	170	193
Avg N Rate LB/A	104	150	187	200

Figure 50 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 44 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 50.

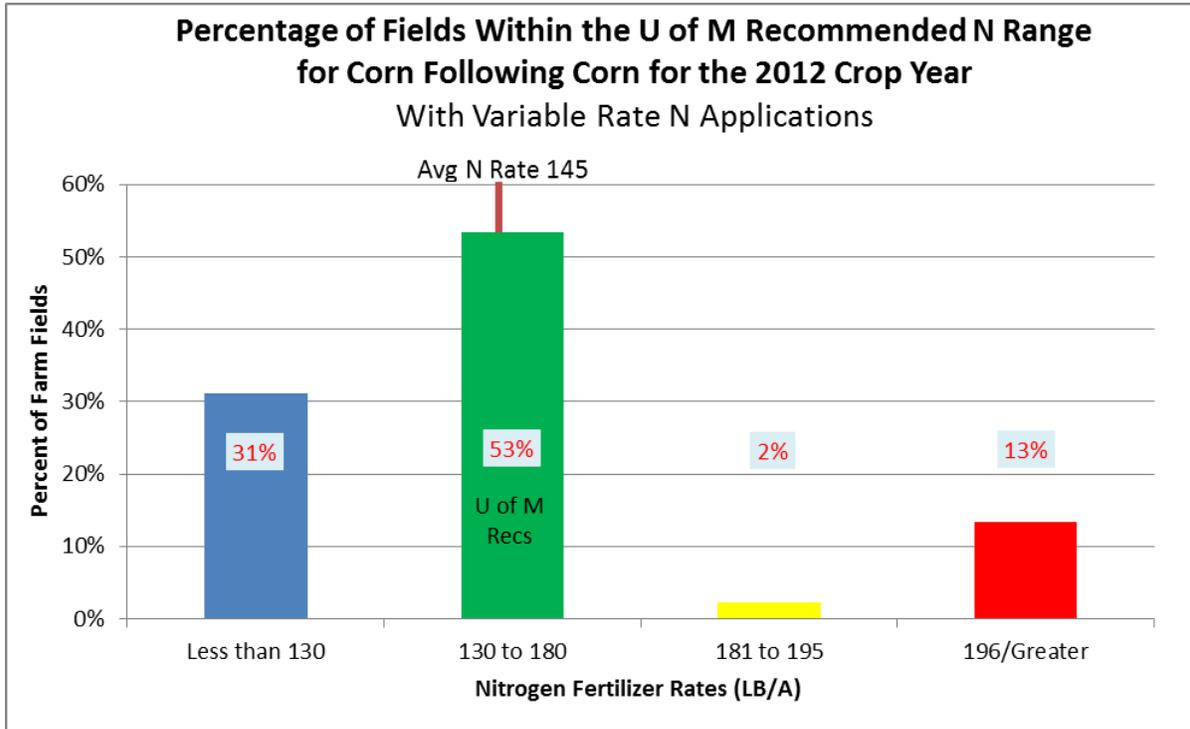


Figure 50. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the IRR BMP region for 2012: 45 fields.

Table 44. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	133	151	175	200
Avg N Rate LB/A	103	153	190	201

Statewide: Corn Following Corn Following Alfalfa

Statewide, five percent of the fields reports corn following corn following alfalfa (Figure 51). There were 89 fields surveyed in Minnesota.

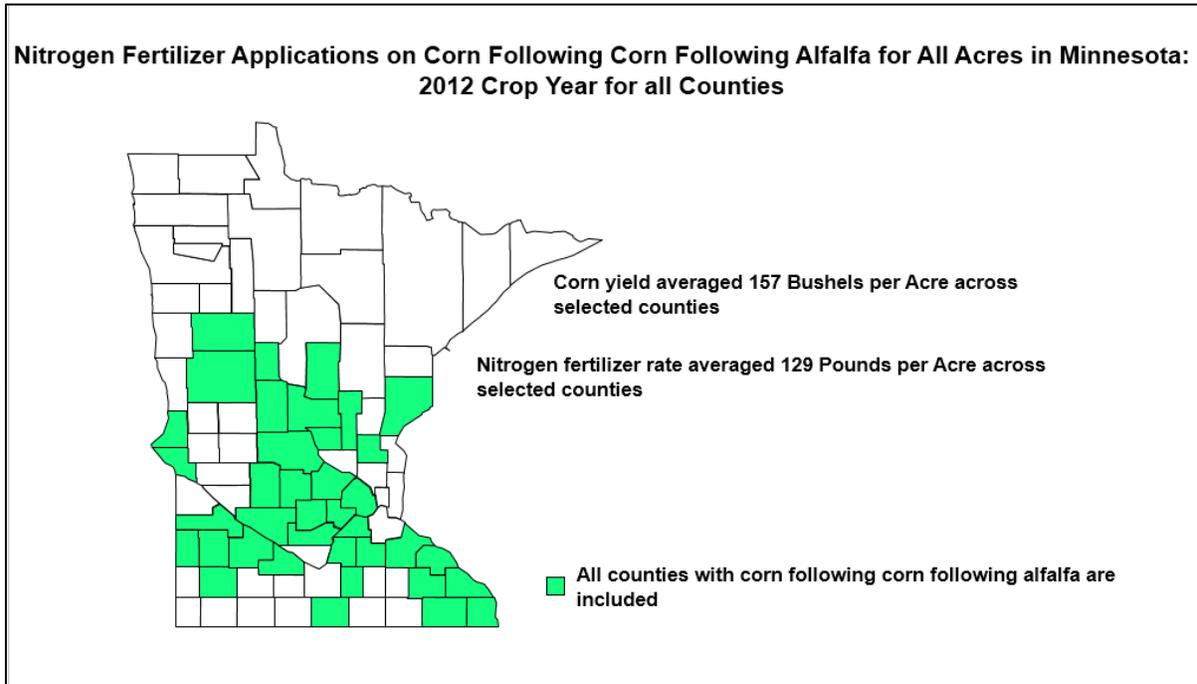


Figure 51. The corn yield averaged 157 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre on fields with corn following corn following alfalfa in Minnesota.

Figure 52 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 45 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 52.

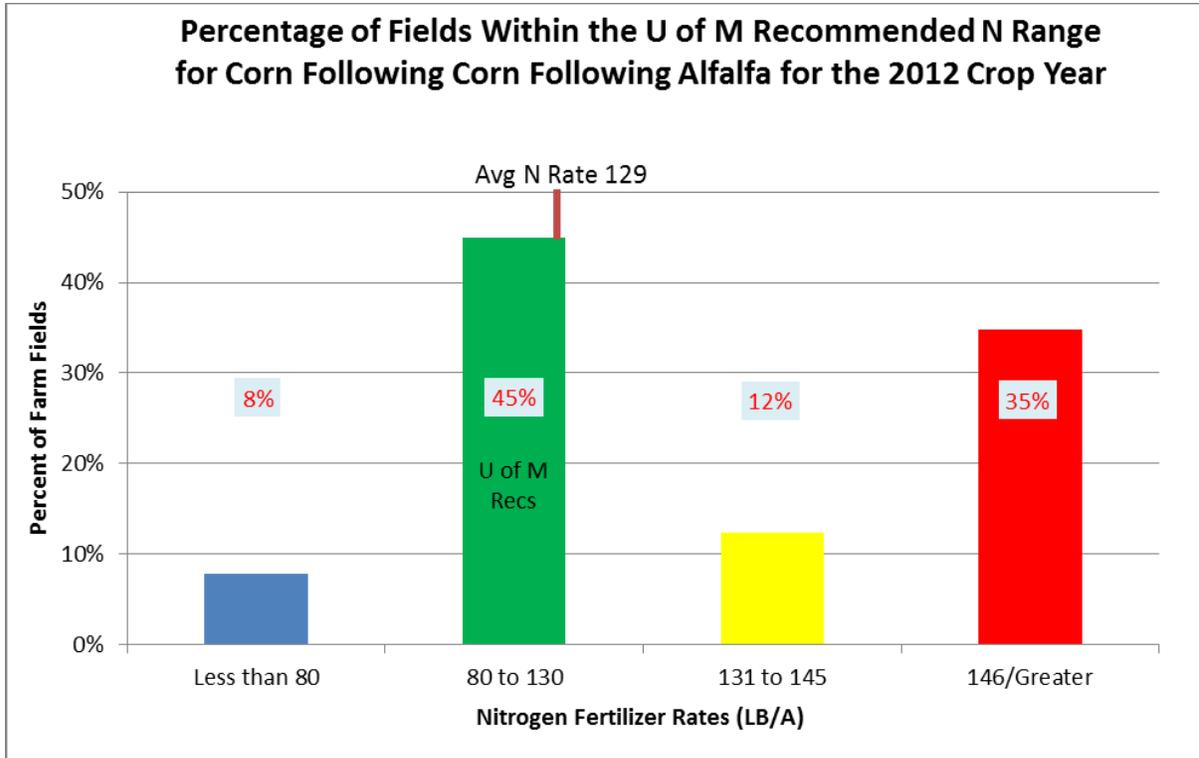


Figure 52. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2012: 89 fields.

Table 45. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	124	143	168	177
Avg N Rate LB/A	47	114	138	163

Figure 53 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 46 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 53.

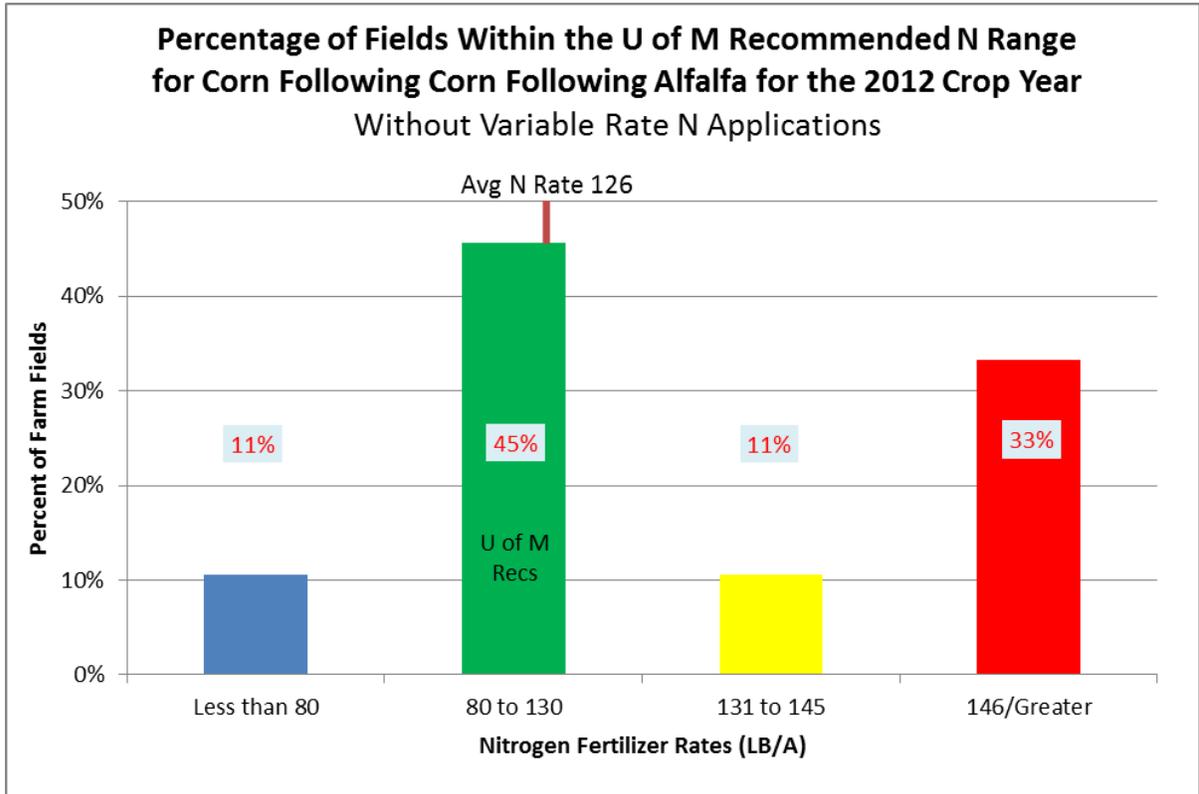


Figure 53. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2012: 57 fields.

Table 46. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	123	144	152	179
Avg N Rate LB/A	46	115	138	163

Figure 54 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 47 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 54.

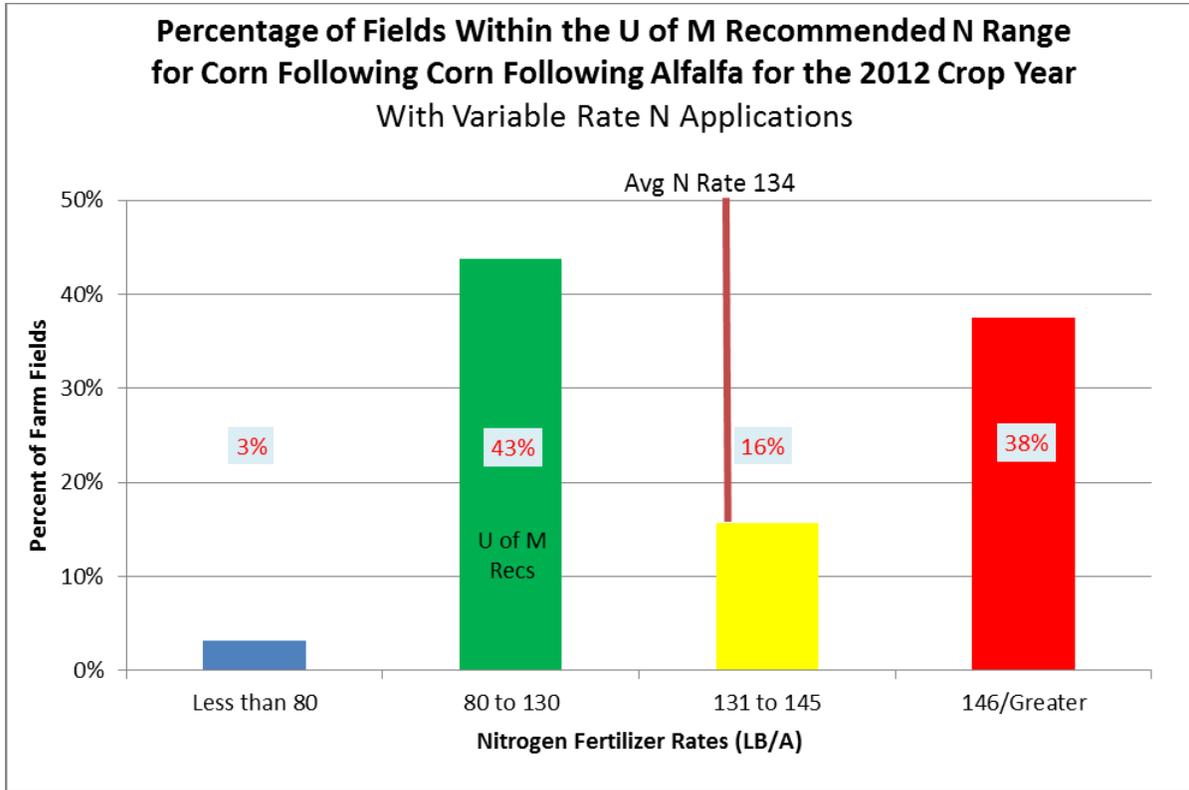


Figure 54. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2012: 32 fields.

Table 47. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	135	141	187	175
Avg N Rate LB/A	55	112	138	164

Southeastern Region: Corn Following Corn Following Alfalfa

There were 30 fields that were included in the SE BMP region corn following corn following alfalfa analysis. Figure 55 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SE BMP region.

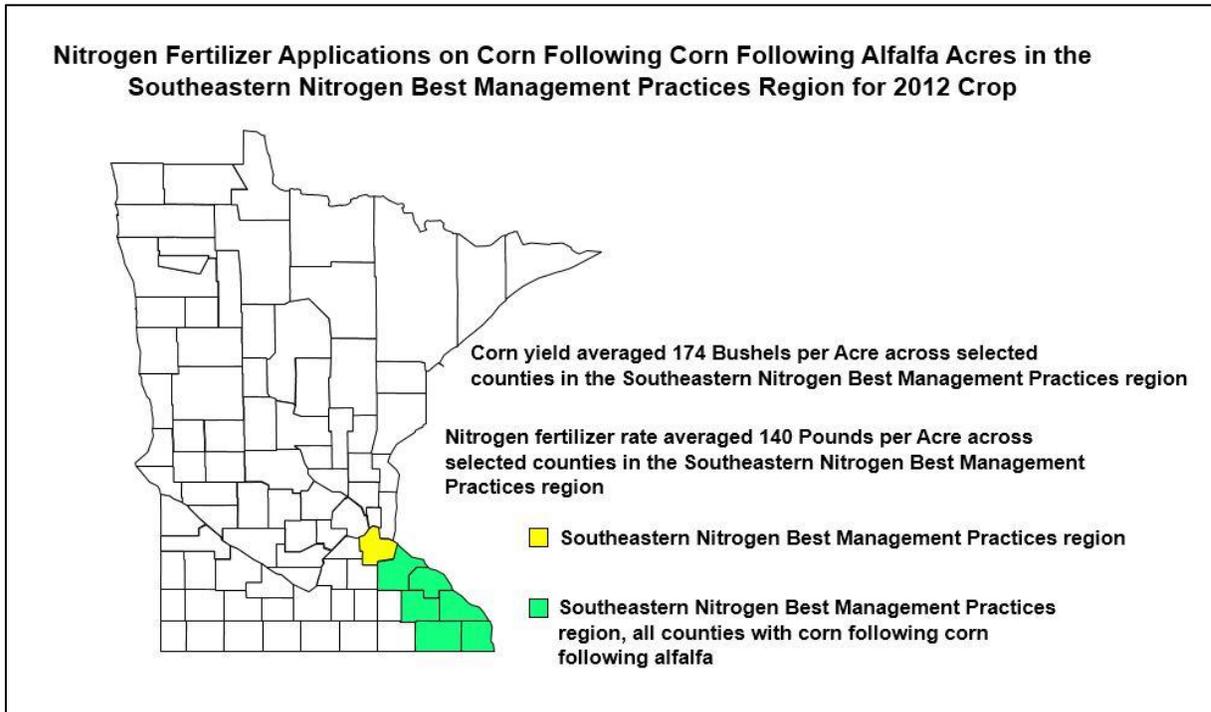


Figure 55. The corn yield averaged 174 bushels per acre and the nitrogen fertilizer rate averaged 140 pounds per acre in the SE BMP region.

Figure 56 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 48 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 56.

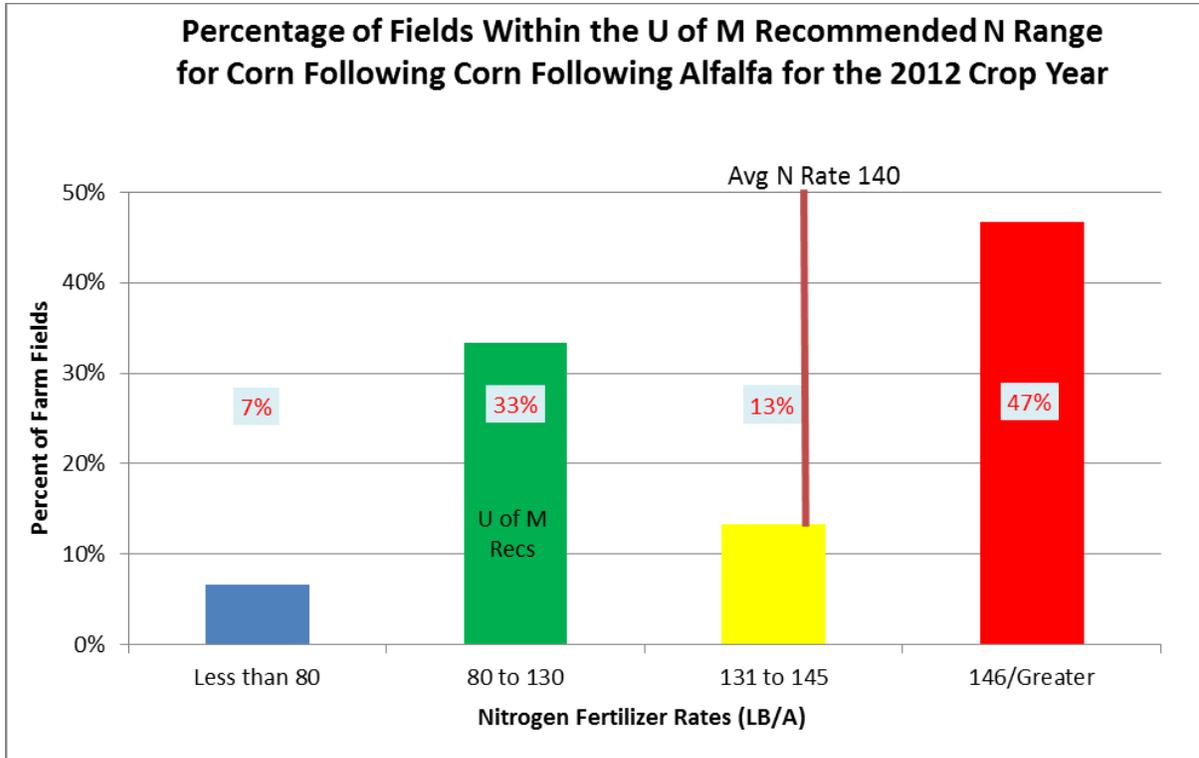


Figure 56. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2012: 30 fields.

Table 48. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	158	160	189	183
Avg N Rate LB/A	57	118	138	169

Figure 57 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 49 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 57.

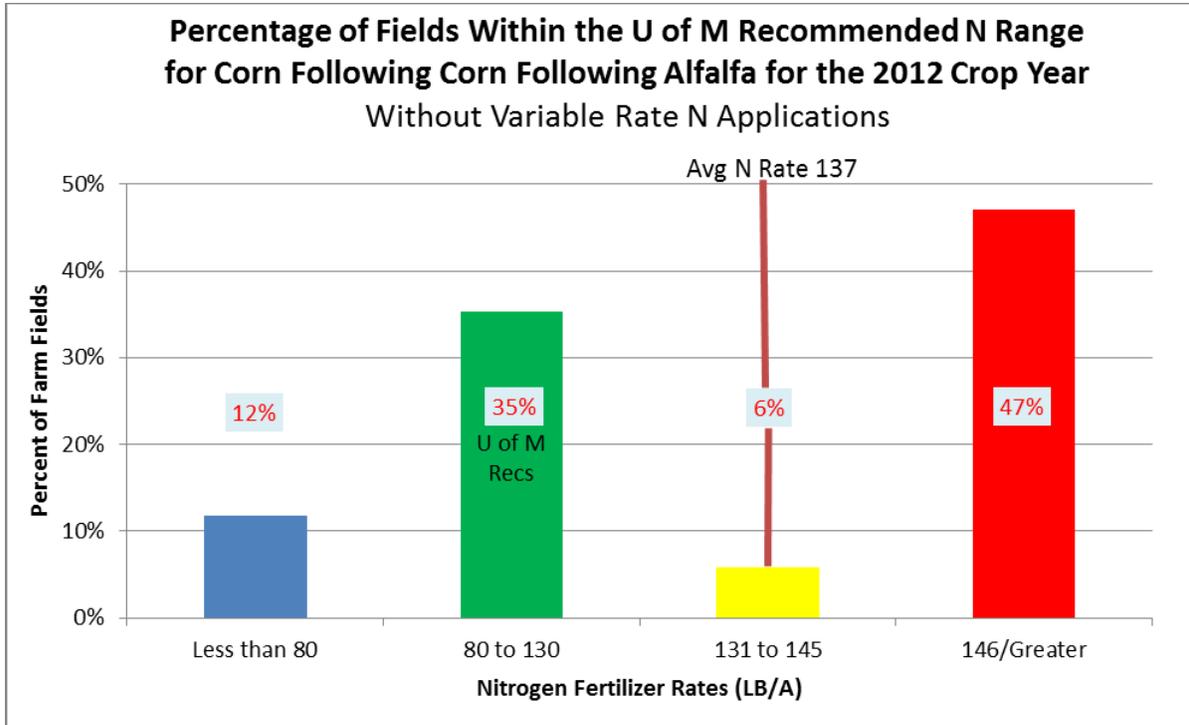


Figure 57. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2012: 17 Fields

Table 49. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	158	165	140	184
Avg N Rate LB/A	57	117	140	172

Figure 58 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 50 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 58.

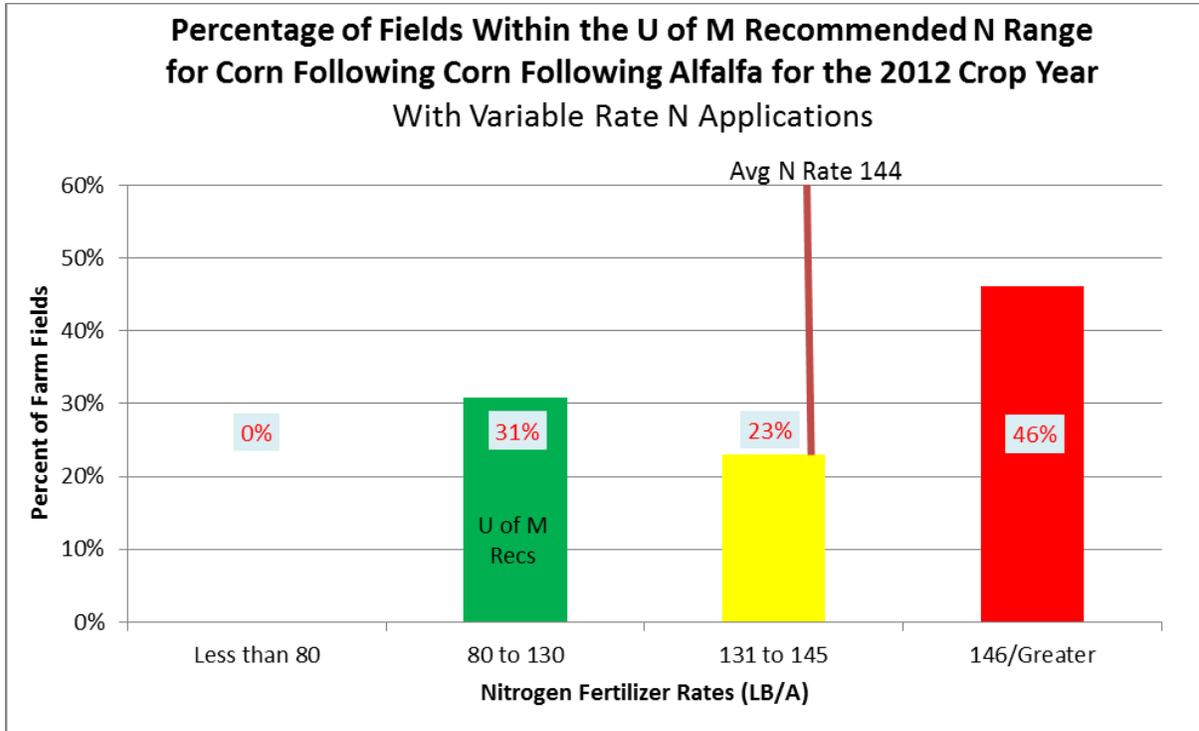


Figure 58. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SE BMP region for 2012: 13 Fields

Table 50. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	151	205	180
Avg N Rate LB/A	No Data	119	137	165

South Central Region: Corn Following Corn Following Alfalfa

There were 15 fields that were included in the SC BMP region corn following corn following alfalfa analysis. Figure 59 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SC BMP region.

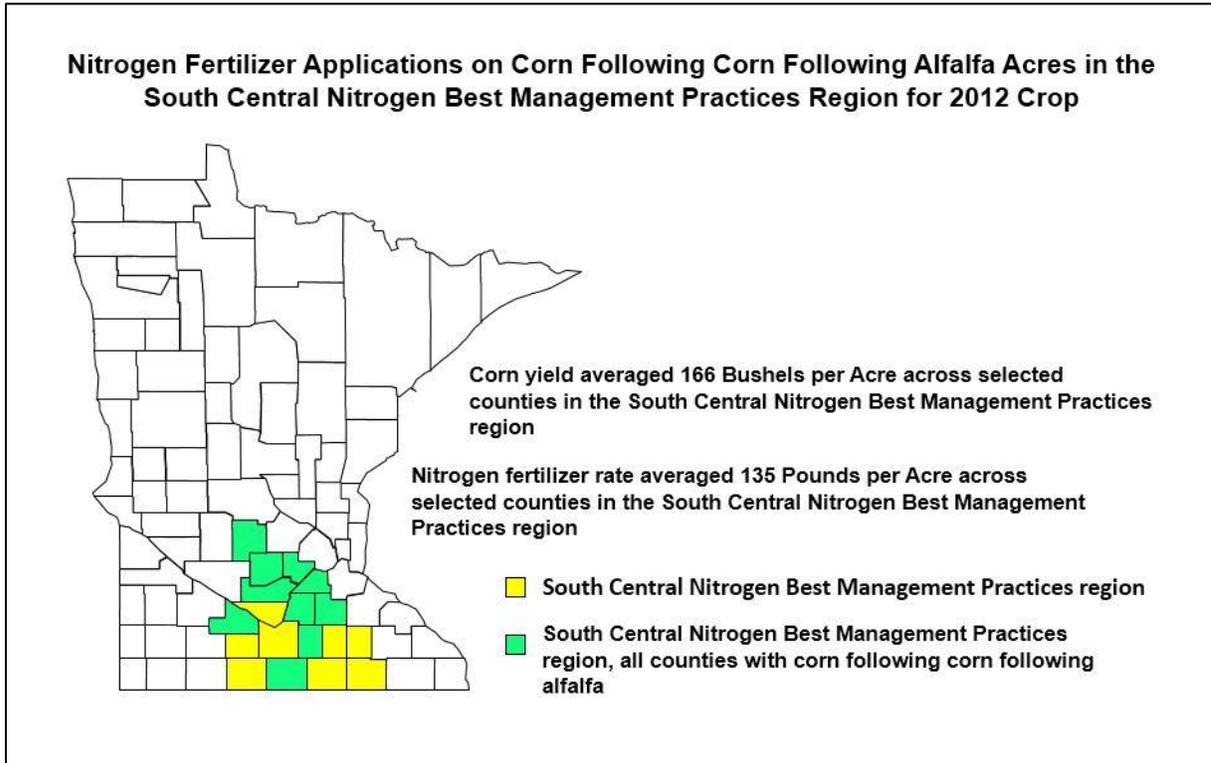


Figure 59. The corn yield averaged 166 bushels per acre and the nitrogen fertilizer rate averaged 135 pounds per acre in the SC BMP region.

Figure 60 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 51 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 60.

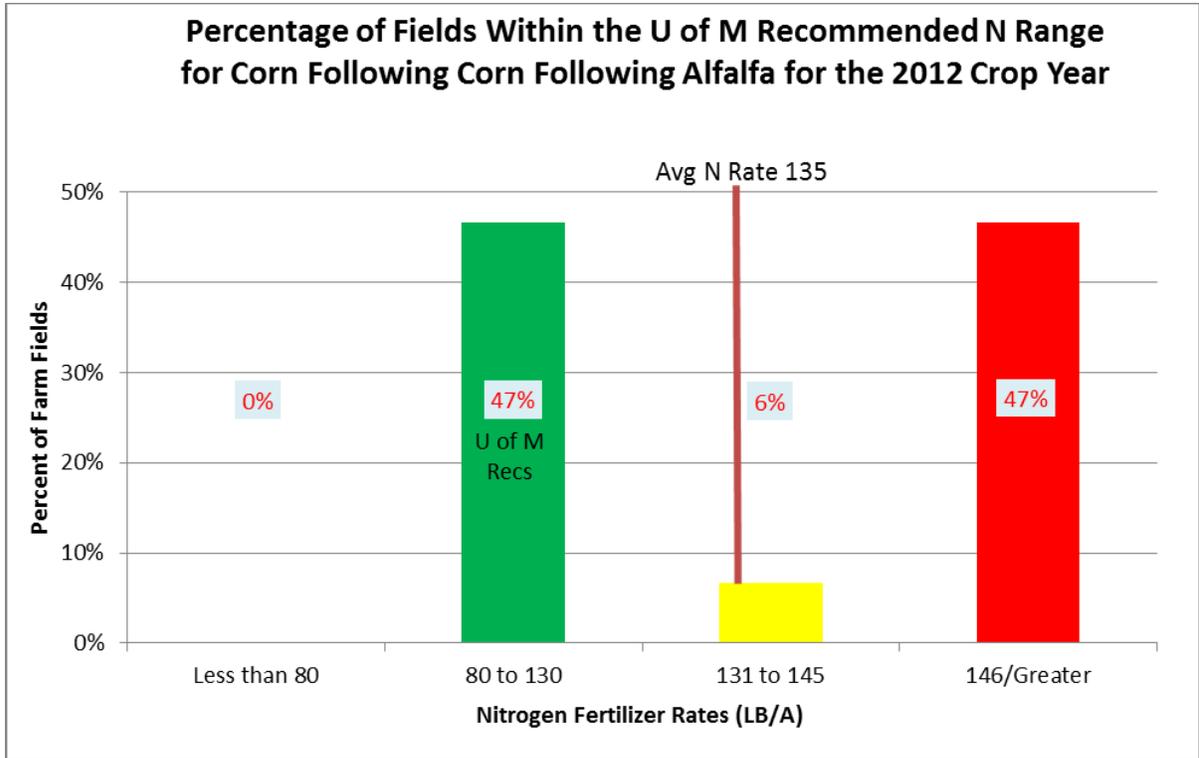


Figure 60. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SC BMP region for 2012: 15 fields.

Table 51. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	159	150	176
Avg N Rate LB/A	No Data	115	139	154

Figure 61 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 52 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 61.

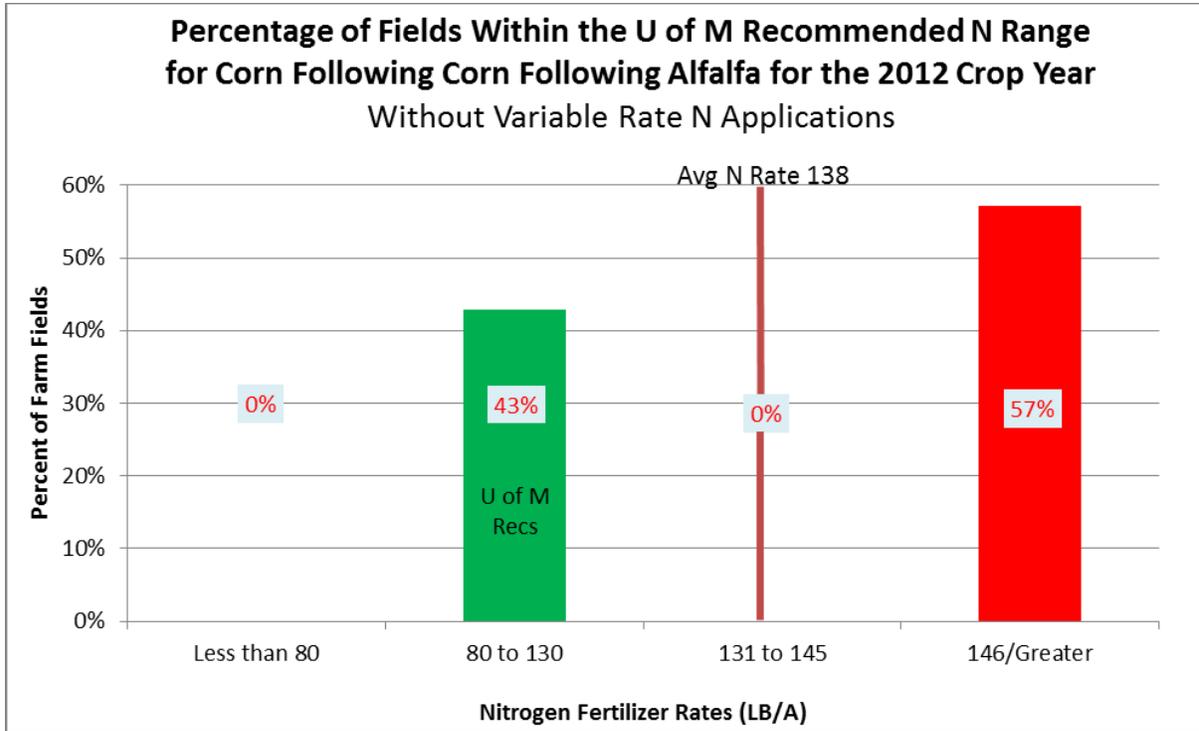


Figure 61. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SC BMP region for 2012: 7 fields.

Table 52. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	158	No Data	185
Avg N Rate LB/A	No Data	117	No Data	153

Figure 62 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 53 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 62.

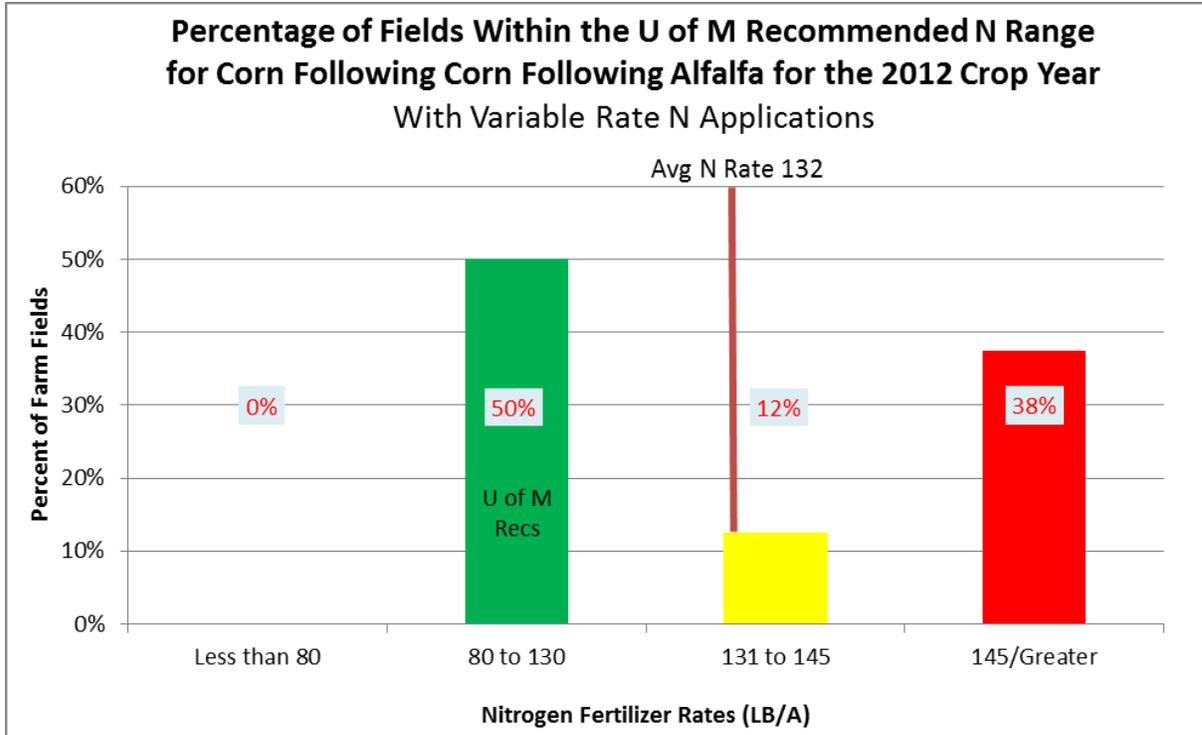


Figure 62. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SC BMP region for 2012: 8 fields.

Table 53. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	160	150	163
Avg N Rate LB/A	No Data	114	139	155

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

There were 14 fields that were included in the SW BMP region corn following corn following alfalfa analysis. Figure 57 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SW BMP region.

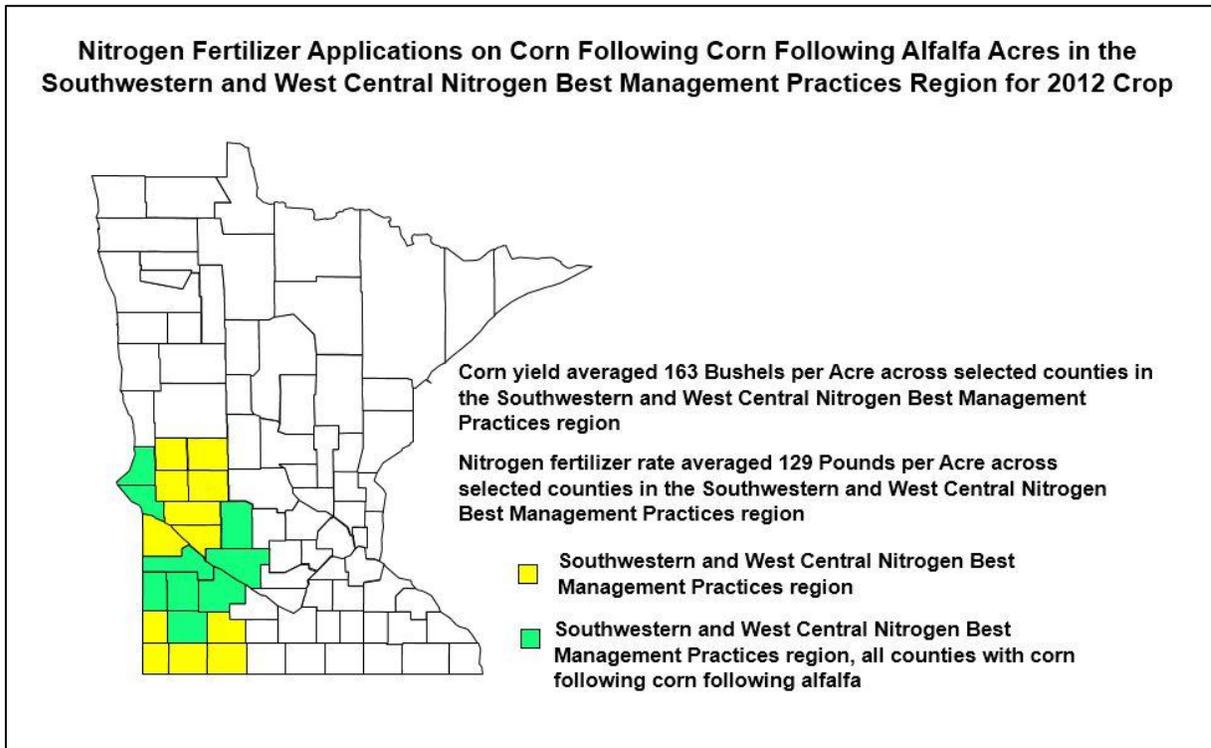


Figure 63. The corn yield averaged 163 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre in the SW BMP region.

Figure 64 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 54 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 64.

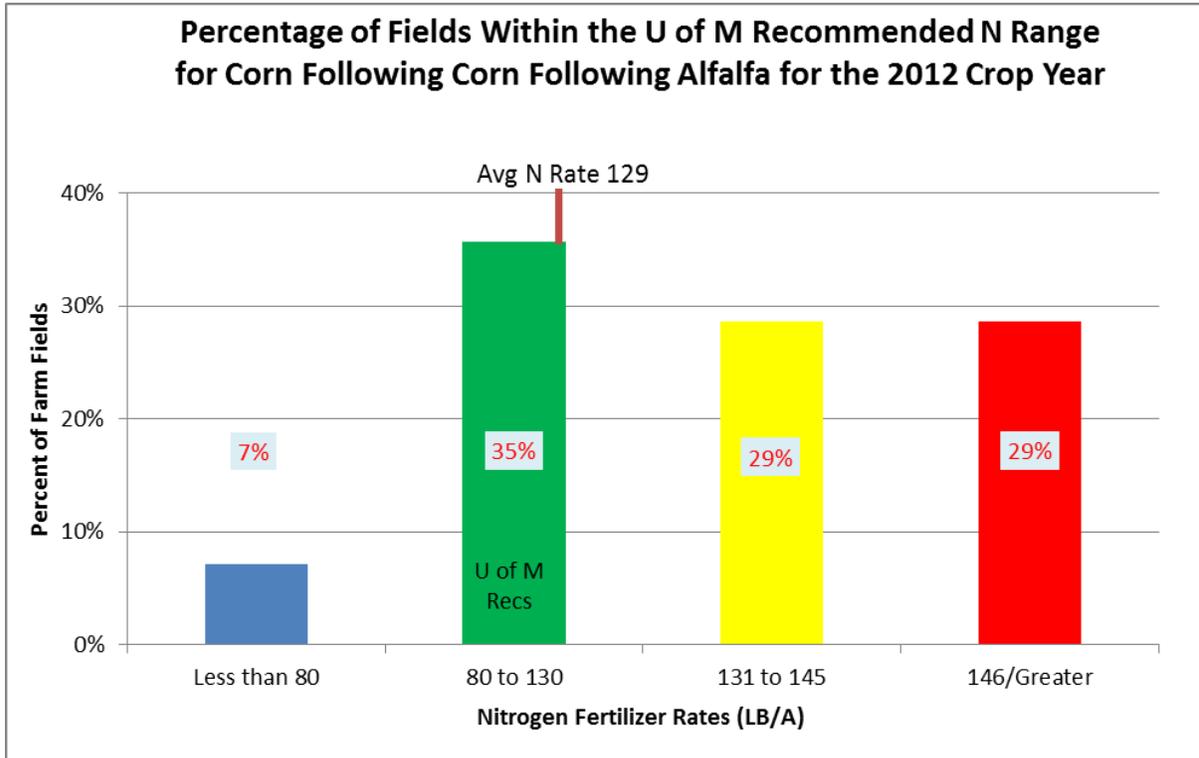


Figure 64. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2012: 14 fields.

Table 54. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	150	160	165	166
Avg N Rate LB/A	61	116	137	153

Figure 65 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 55 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 65.

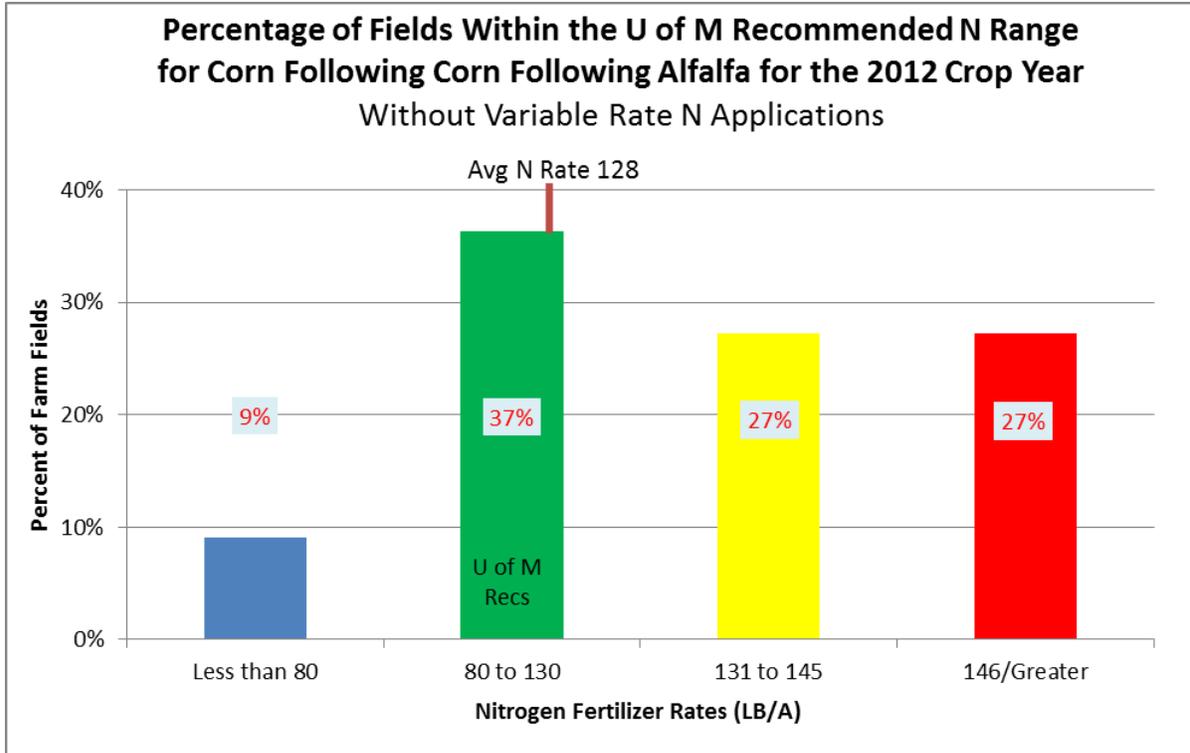


Figure 65. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SW BMP region for 2012: 11 fields.

Table 55. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	150	158	163	167
Avg N Rate LB/A	61	123	136	150

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region for fields with variable rate applications of nitrogen.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region for fields:

- With and without variable rate applications of nitrogen.
- Without variable rate applications of nitrogen.
- With variable rate applications of nitrogen.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

There were 30 fields that were included in the IRR BMP region corn following corn following alfalfa analysis. Figure 66 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the IRR BMP region.

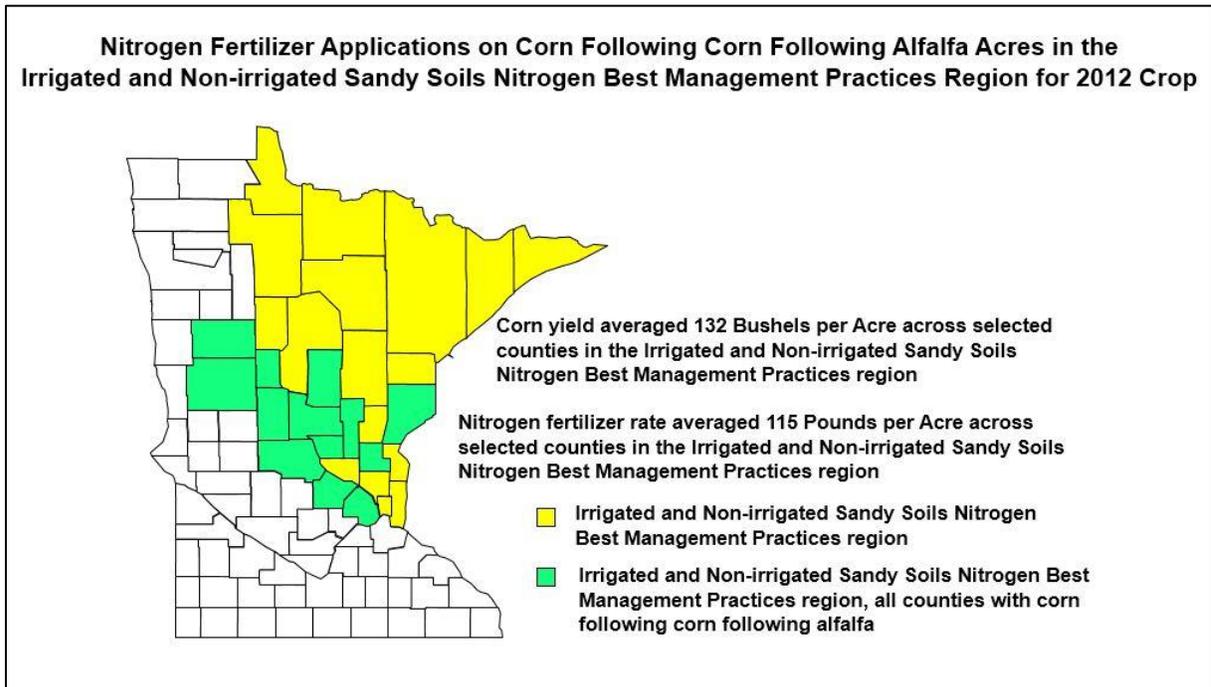


Figure 66. The corn yield averaged 132 bushels per acre and the nitrogen fertilizer rate averaged 115 pounds per acre in the IRR BMP region.

Figure 67 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 56 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 67.

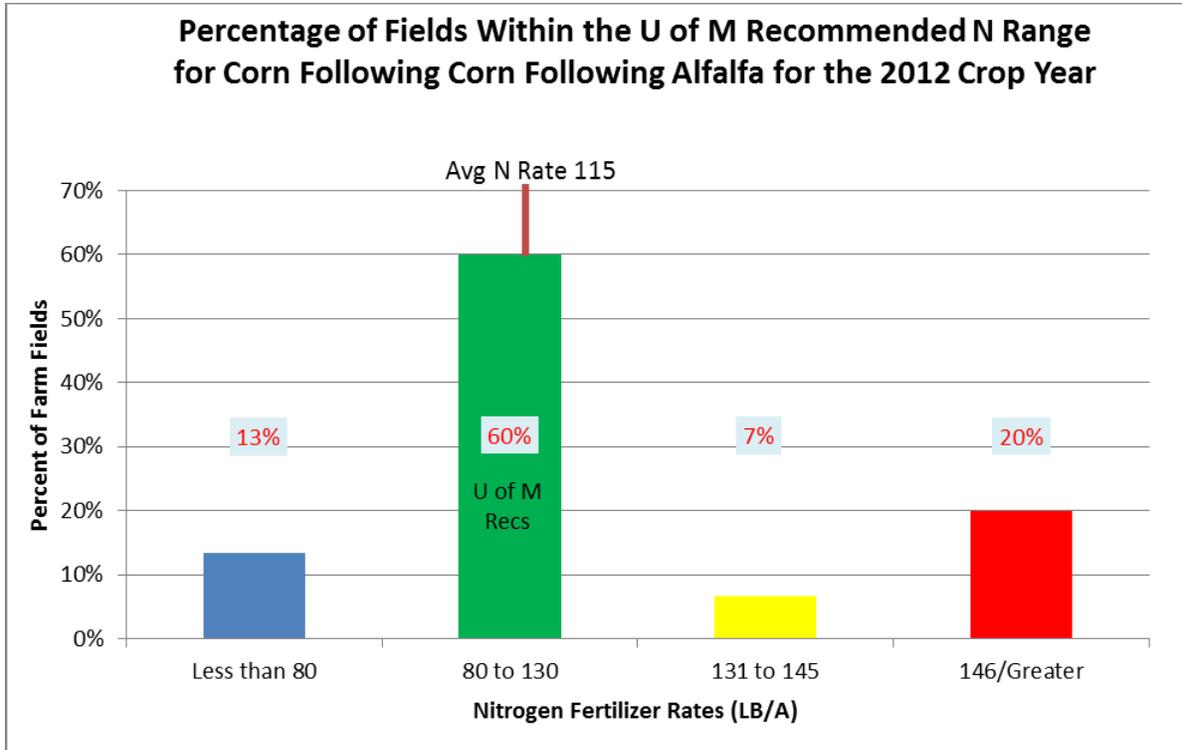


Figure 67. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 30 fields.

Table 56. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	102	123	140	173
Avg N Rate LB/A	39	111	140	168

Figure 68 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 57 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 68.

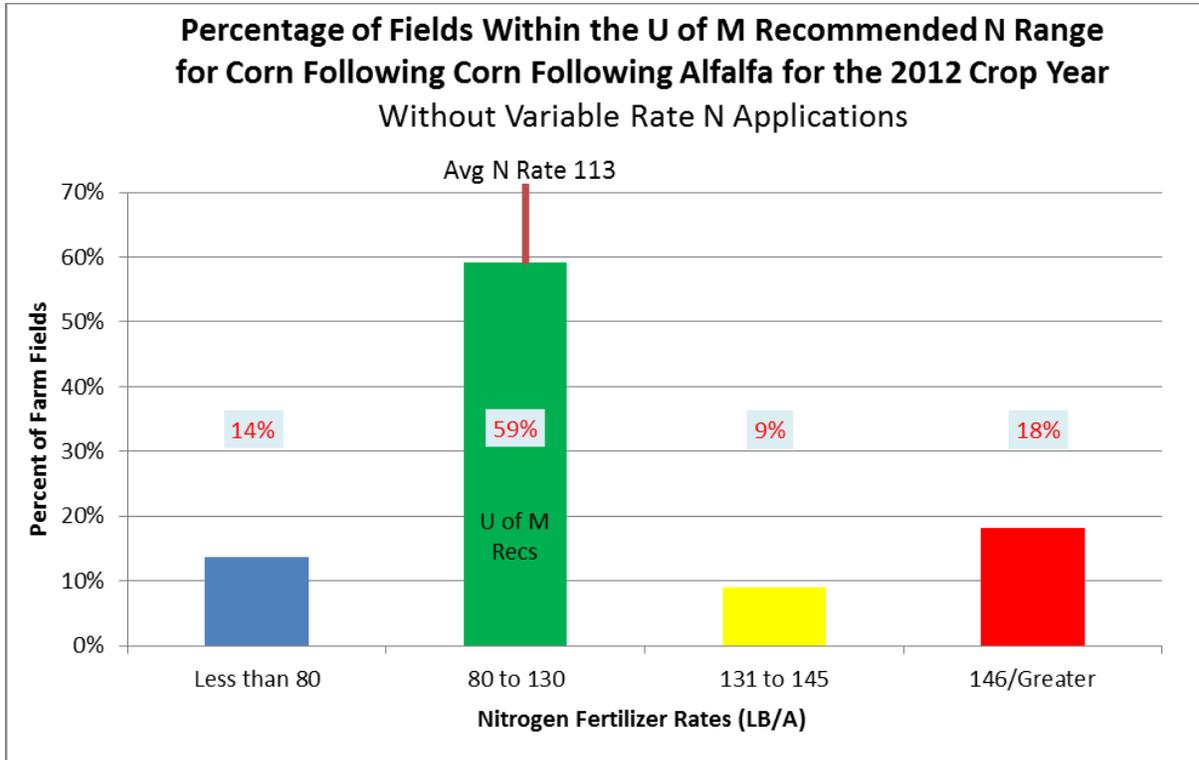


Figure 68. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2012: 22 fields.

Table 57. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	90	127	140	170
Avg N Rate LB/A	33	112	140	166

Figure 69 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 58 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 69.

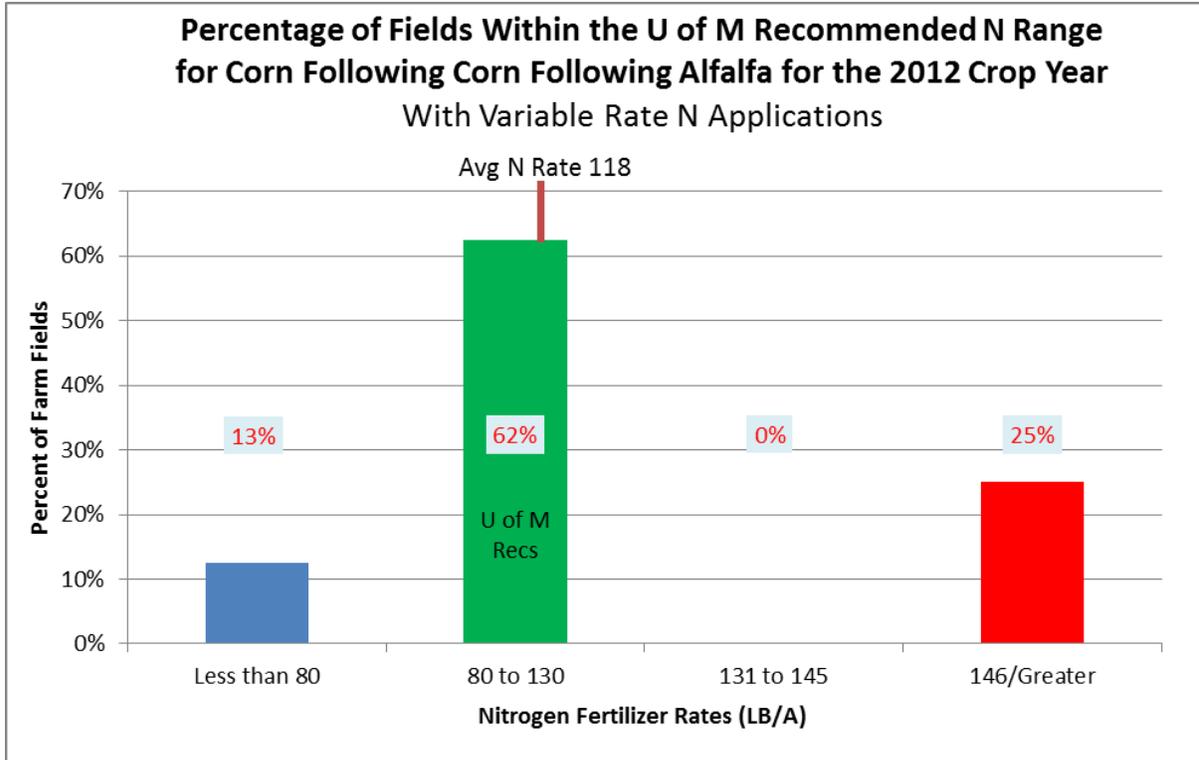


Figure 69. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2012: 8 fields.

Table 58. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	135	113	No Data	180
Avg N Rate LB/A	55	109	No Data	174

Statewide: Corn Following Alfalfa

Statewide, three percent of the fields reported corn following alfalfa (Figure 70). There were 52 fields surveyed in Minnesota.

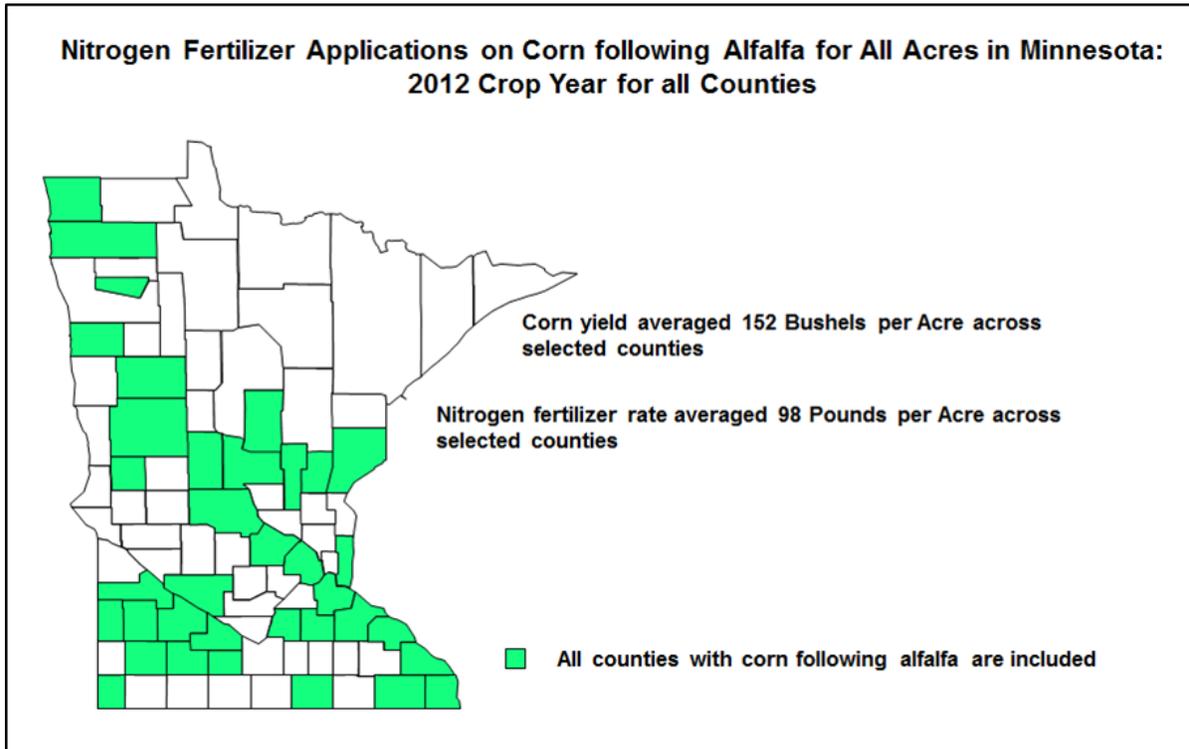


Figure 70. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 98 pounds per acre on fields with corn following alfalfa in Minnesota.

Figure 71 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 59 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 71.

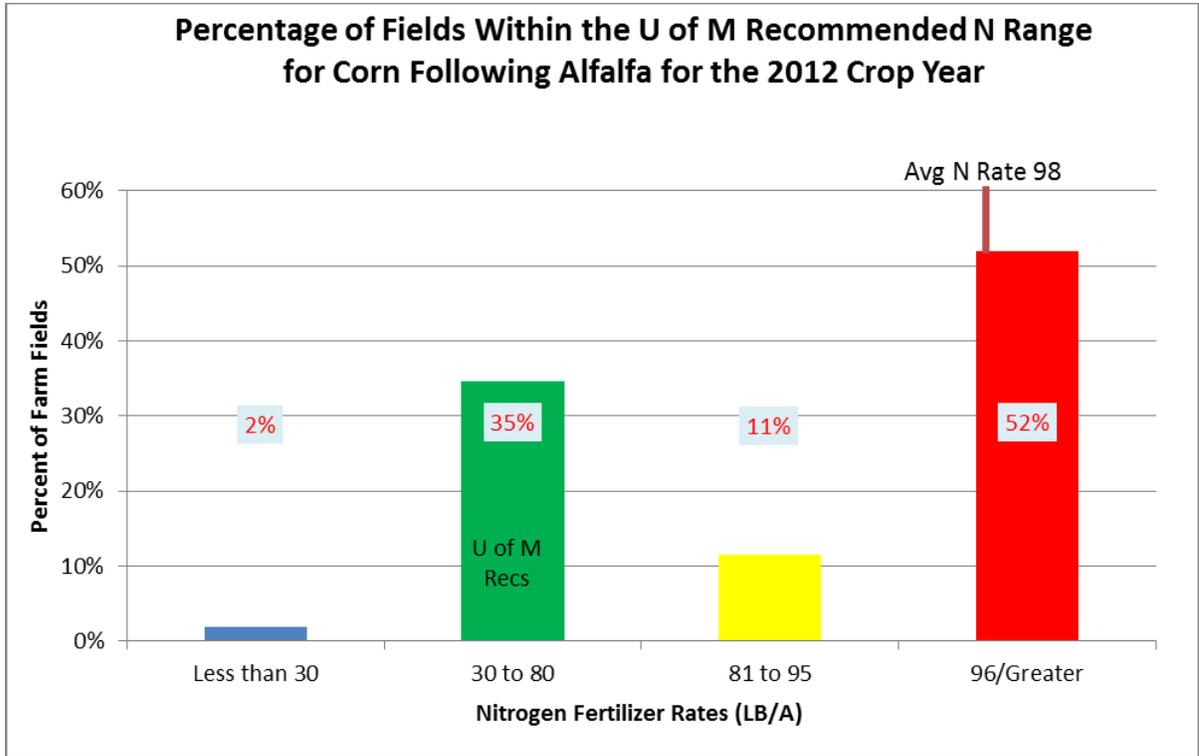


Figure 71. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2012: 52 fields.

Table 59. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	144	143	159
Avg N Rate LB/A	15	51	89	135

Figure 72 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 60 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 72.

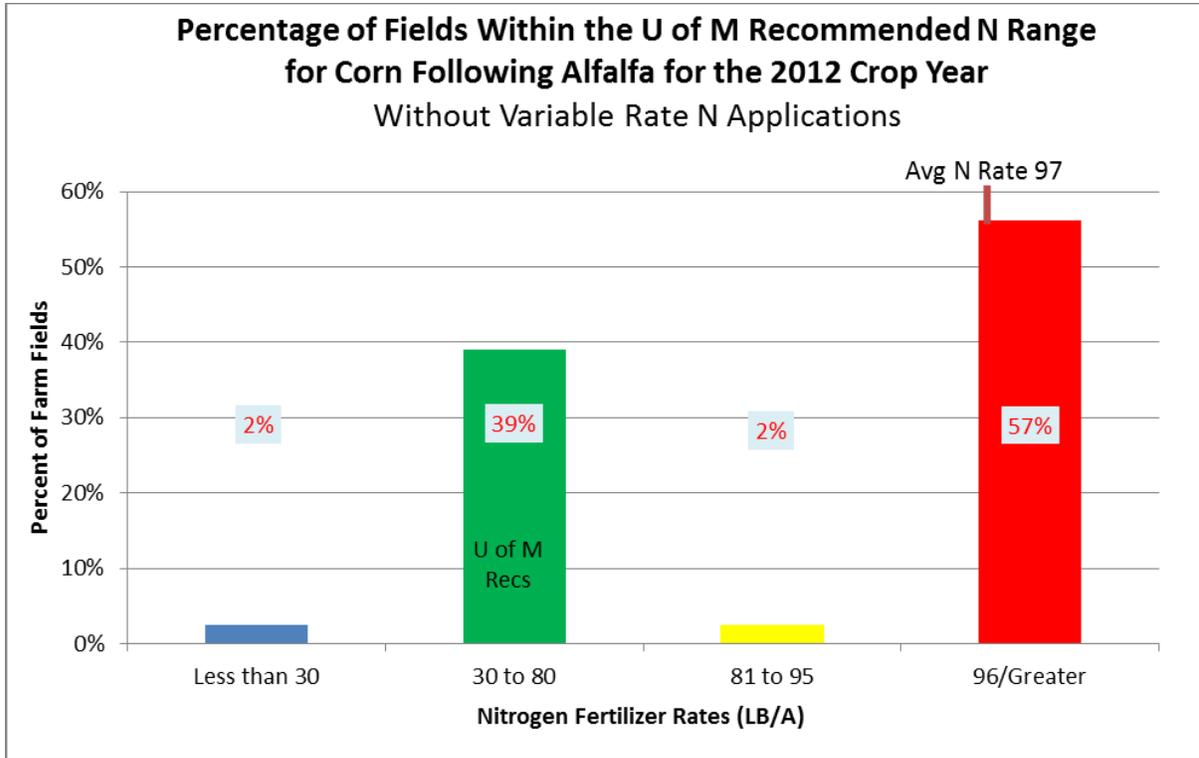


Figure 72. Percentage of fields within U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2012: 41 fields.

Table 60. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	146	150	160
Avg N Rate LB/A	15	50	92	133

Figure 73 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 61 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 73.

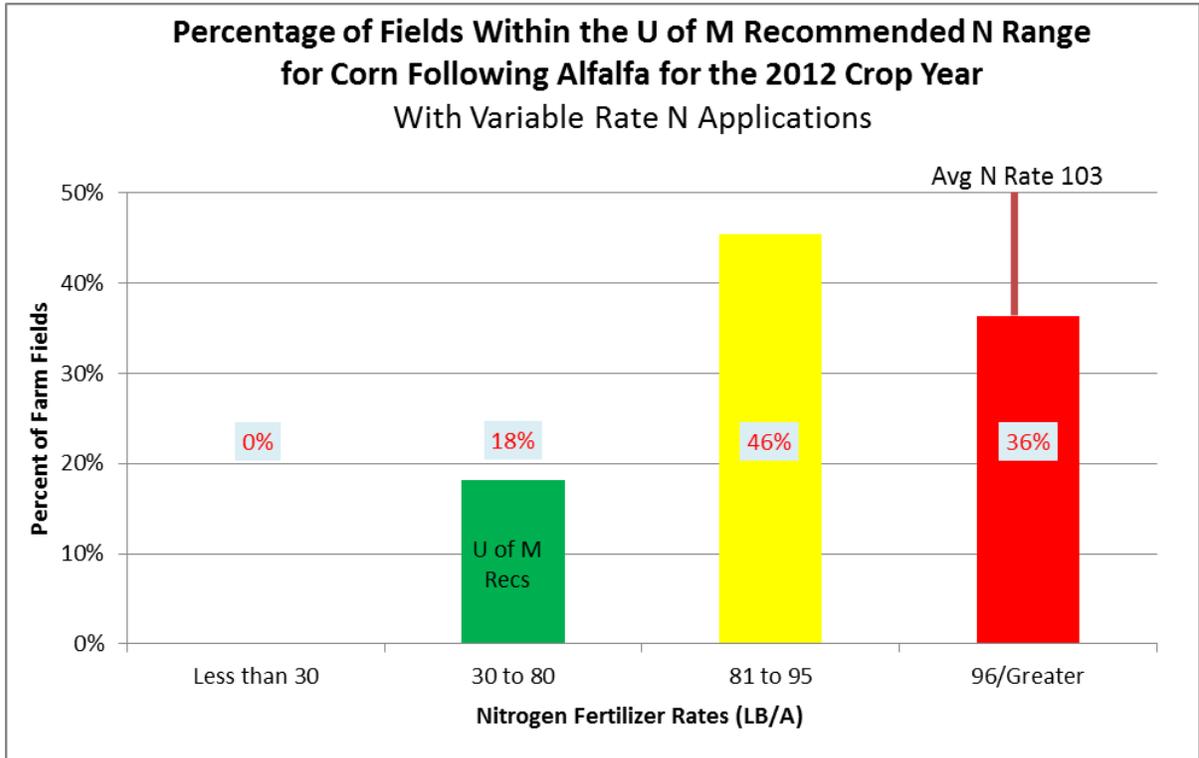


Figure 73. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2012: 11 fields.

Table 61. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	129	141	152
Avg N Rate LB/A	No Data	58	88	144

Southeastern Region: Corn Following Alfalfa

There were 9 fields that were included in the SE BMP region corn following alfalfa analysis. Figure 74 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the SE BMP region.

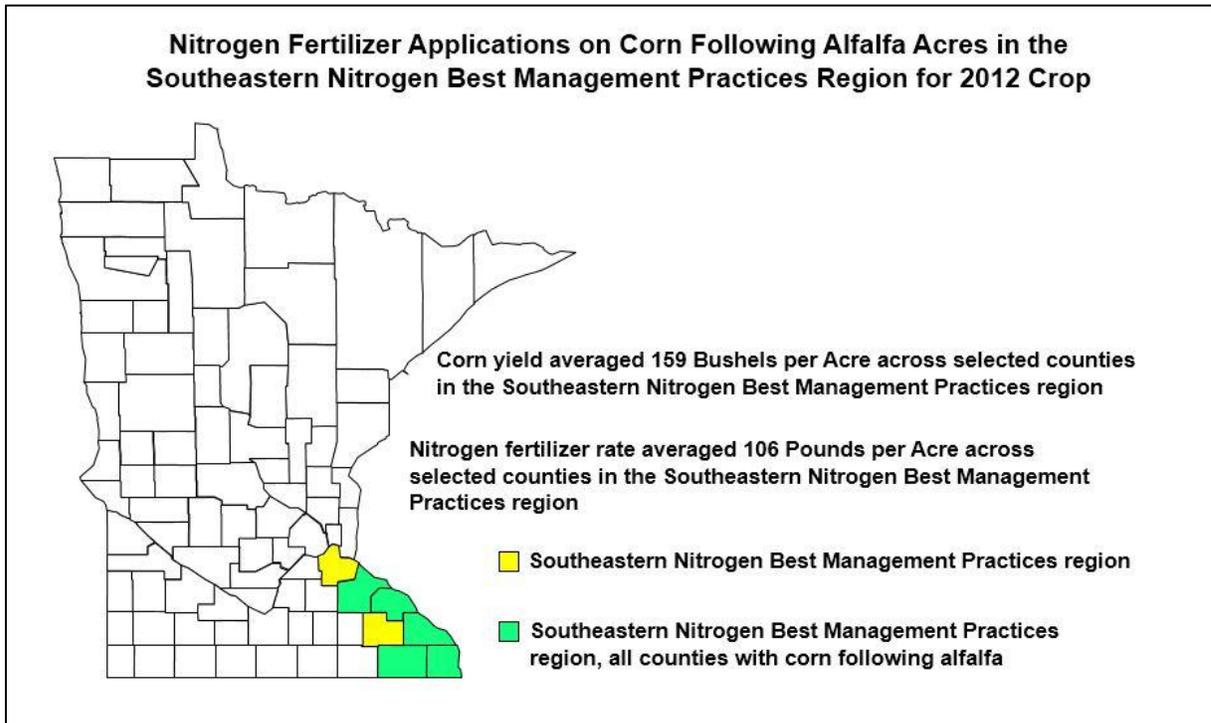


Figure 74. The corn yield averaged 159 bushels per acre and the nitrogen fertilizer rate averaged 106 pounds per acre in the SE BMP region.

Figure 75 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following alfalfa with and without rate variable nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 62 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 75.

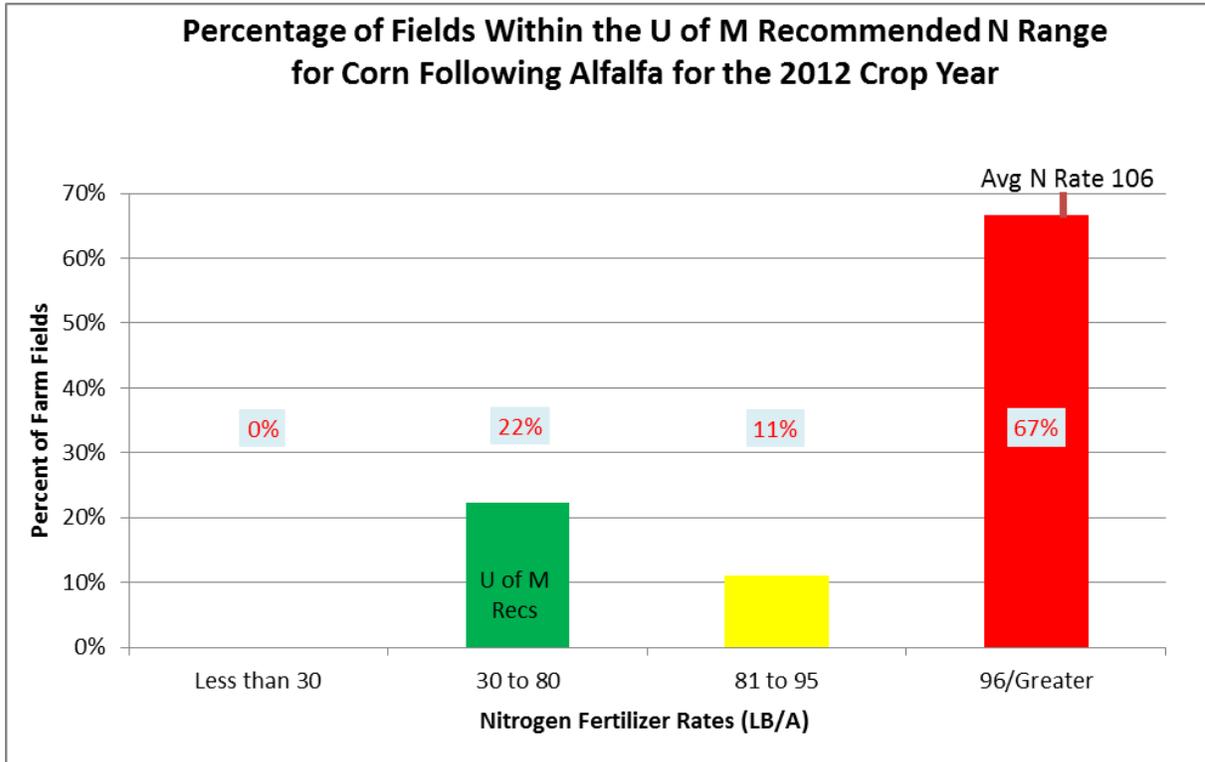


Figure 75. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2012: 9 fields.

Table 62. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	120	170	171
Avg N Rate LB/A	No Data	61	86	124

Figure 76 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 63 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 76.

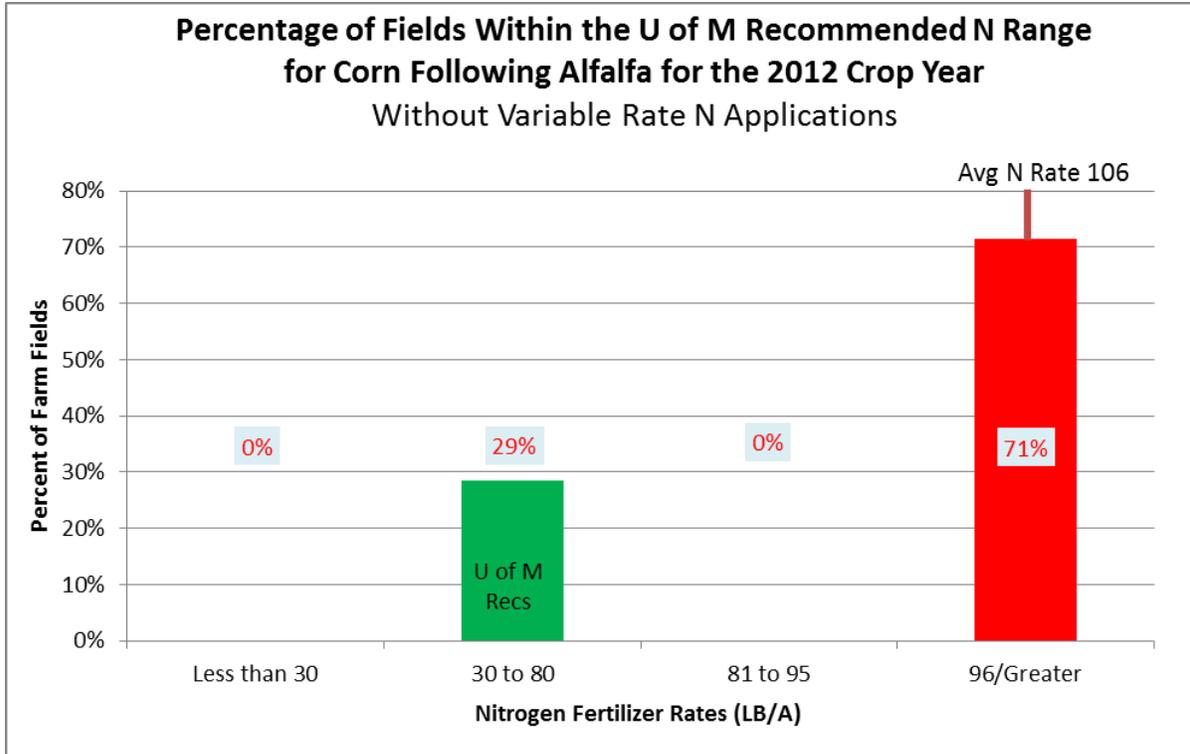


Figure 76. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2012: 7 fields.

Table 63. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	120	No Data	177
Avg N Rate LB/A	No Data	61	No Data	124

Less than five farmers reported planting corn following alfalfa in the SE BMP region for fields with variable rate applications of nitrogen.

South Central Region: Corn Following Alfalfa

There were 8 fields that were included in the SC BMP region corn following alfalfa analysis. Figure 77 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the SC BMP region.

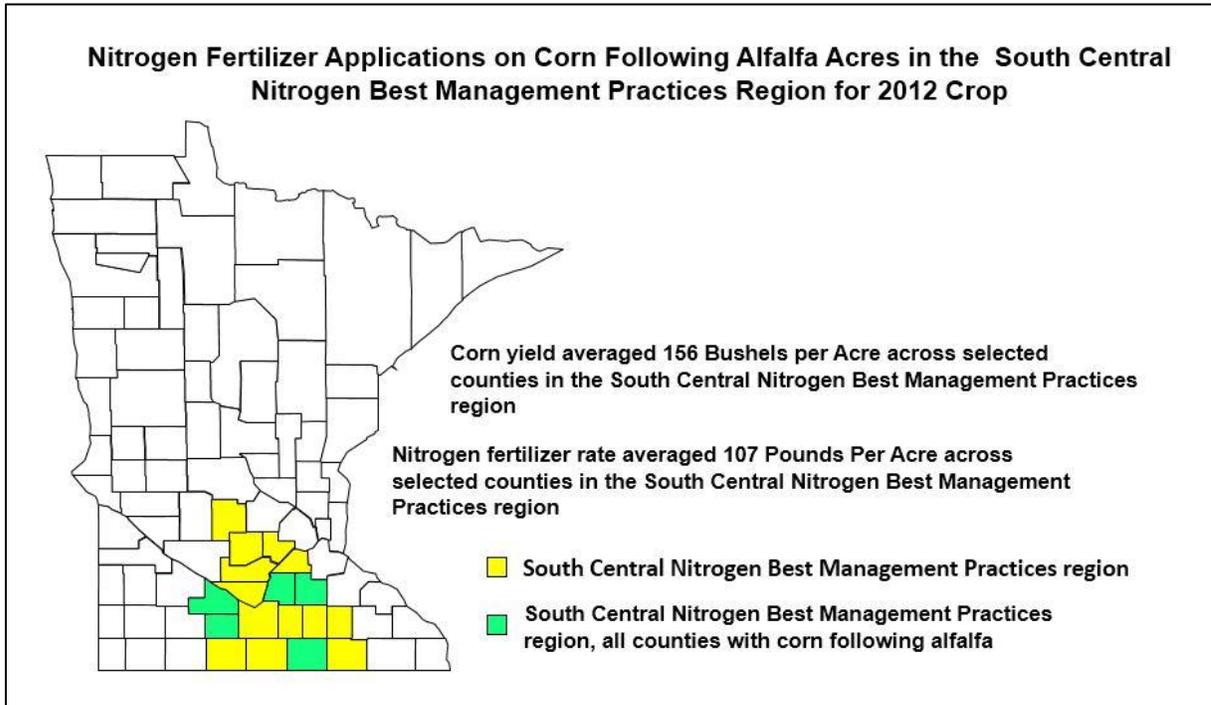


Figure 77. The corn yield averaged 156 bushels per acre and the nitrogen fertilizer rate averaged 107 pounds per acre in the SC BMP region.

Figure 78 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 64 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 78.

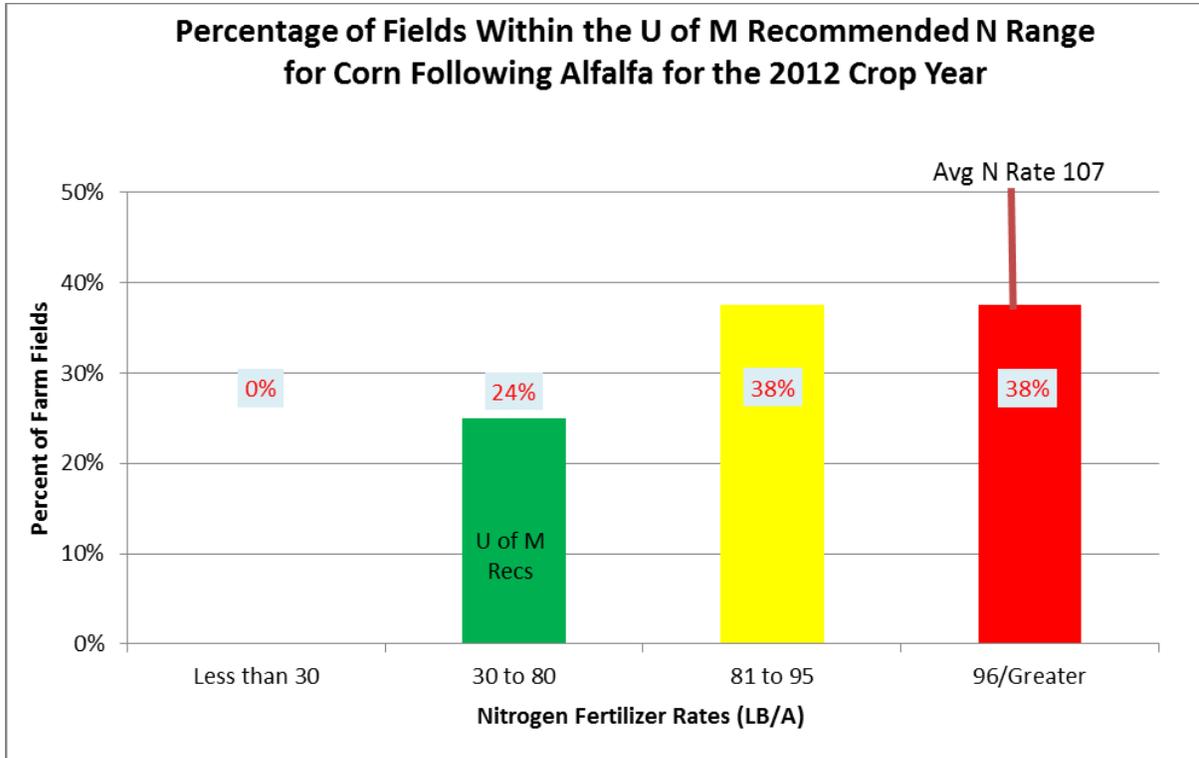


Figure 78. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SC BMP region for 2012: 8 fields.

Table 64. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	150	142	173
Avg N Rate LB/A	No Data	45	91	165

Figure 79 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 65 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 79.

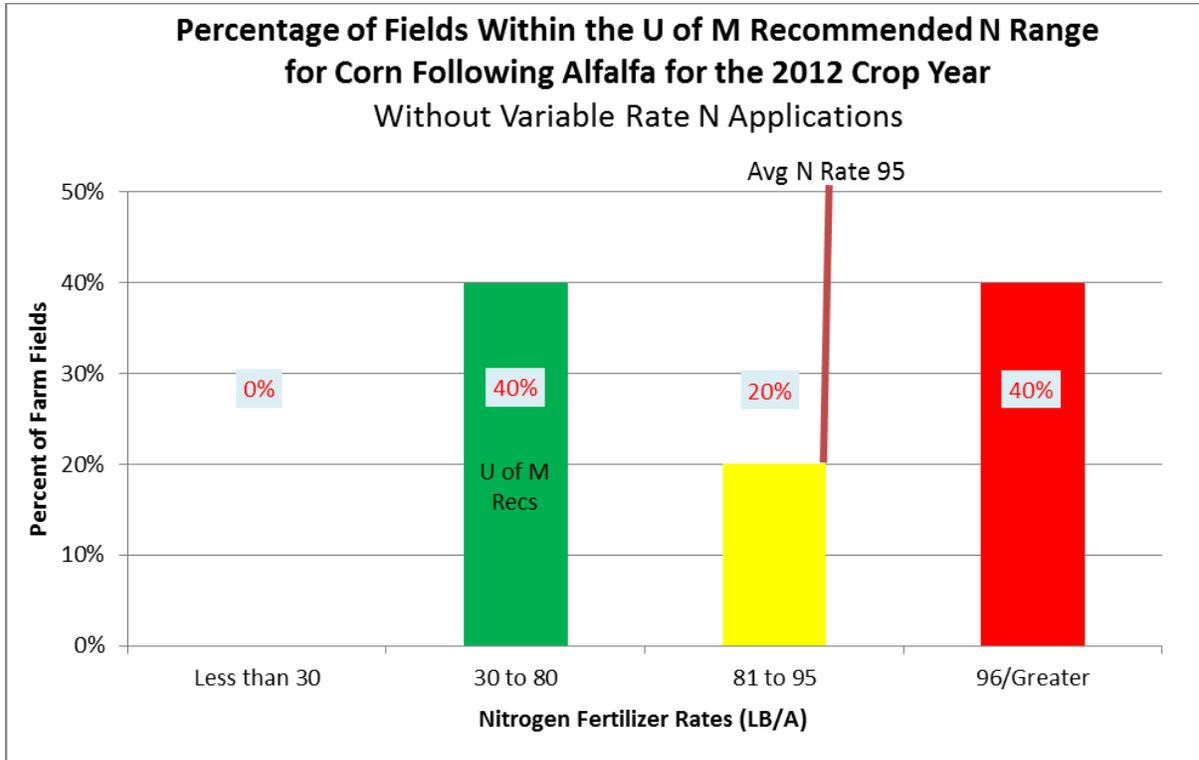


Figure 79. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SC BMP region for 2012: 5 fields.

Table 65. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	150	150	160
Avg N Rate LB/A	No Data	45	92	148

Less than five farmers reported planting corn following alfalfa in the SC BMP region for fields with variable rate applications of nitrogen.

Southwestern and West Central Region: Corn Following Alfalfa

There were 9 fields that were included in the SW BMP region corn following alfalfa analysis. Figure 80 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the SW BMP region.

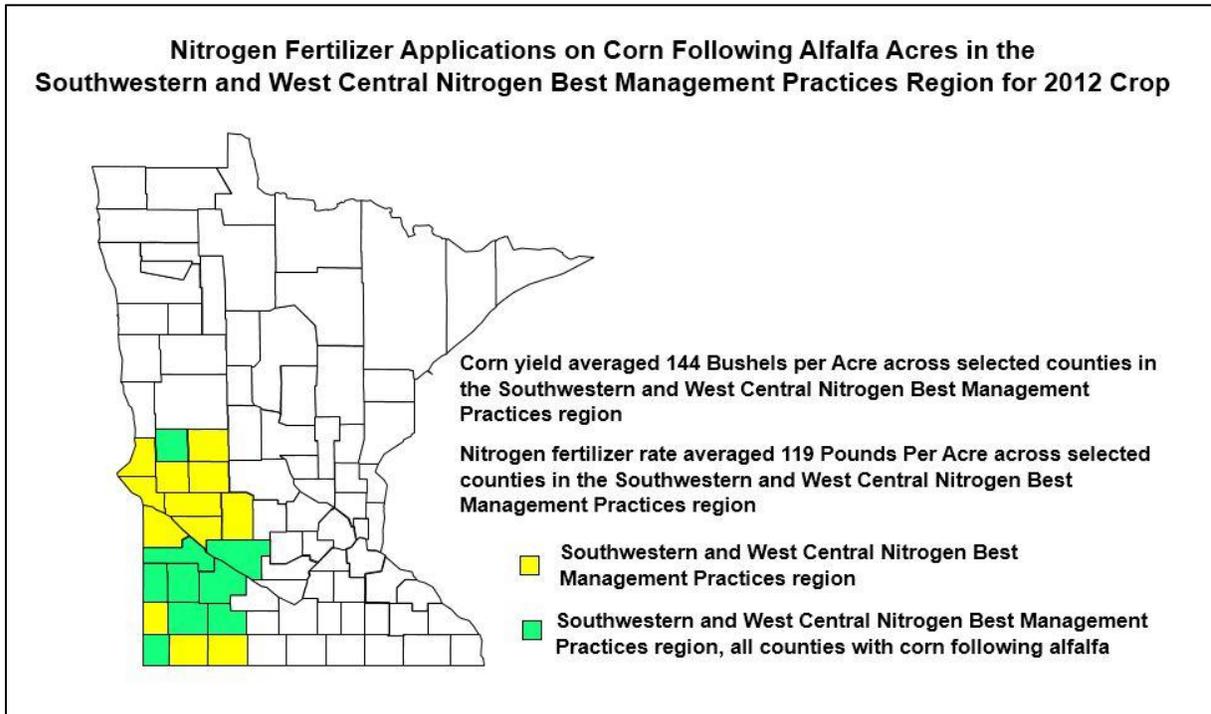


Figure 80. The corn yield averaged 144 bushels per acre and the nitrogen fertilizer rate averaged 119 pounds per acre in the SW BMP region.

Figure 81 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 66 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 81.

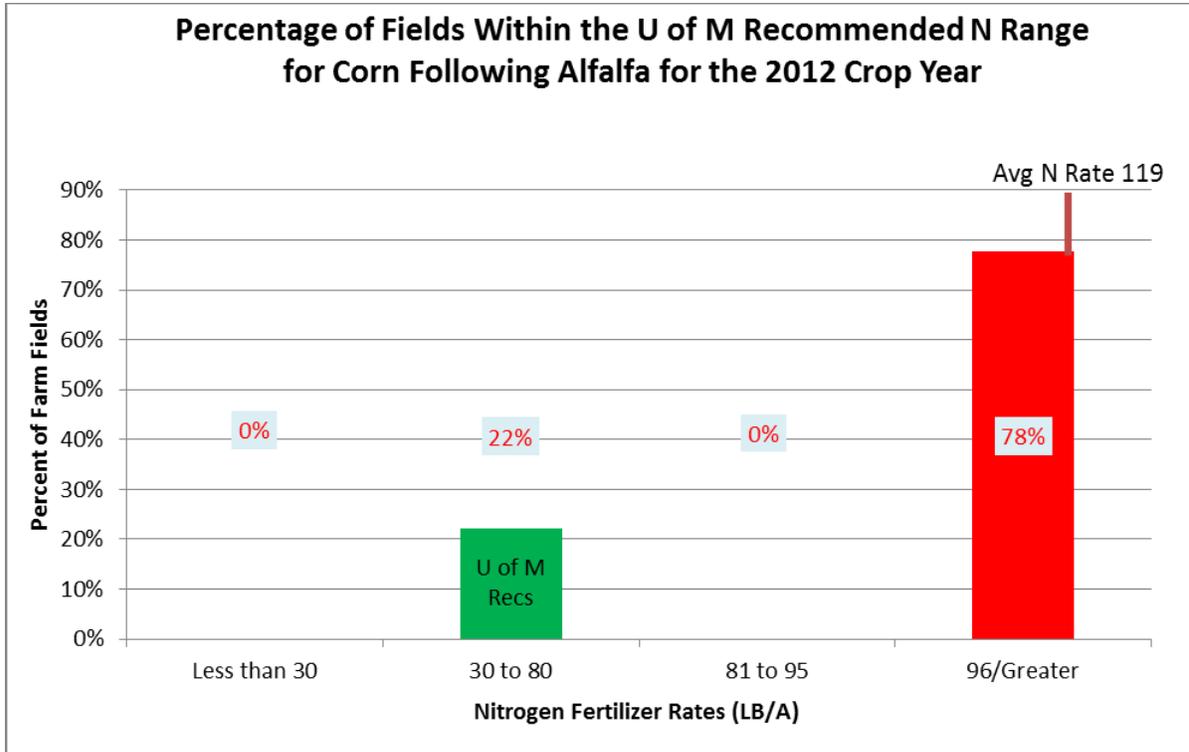


Figure 81. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2012: 9 fields.

Table 66. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	155	No Data	141
Avg N Rate LB/A	No Data	55	No Data	137

Figure 82 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 67 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 82.

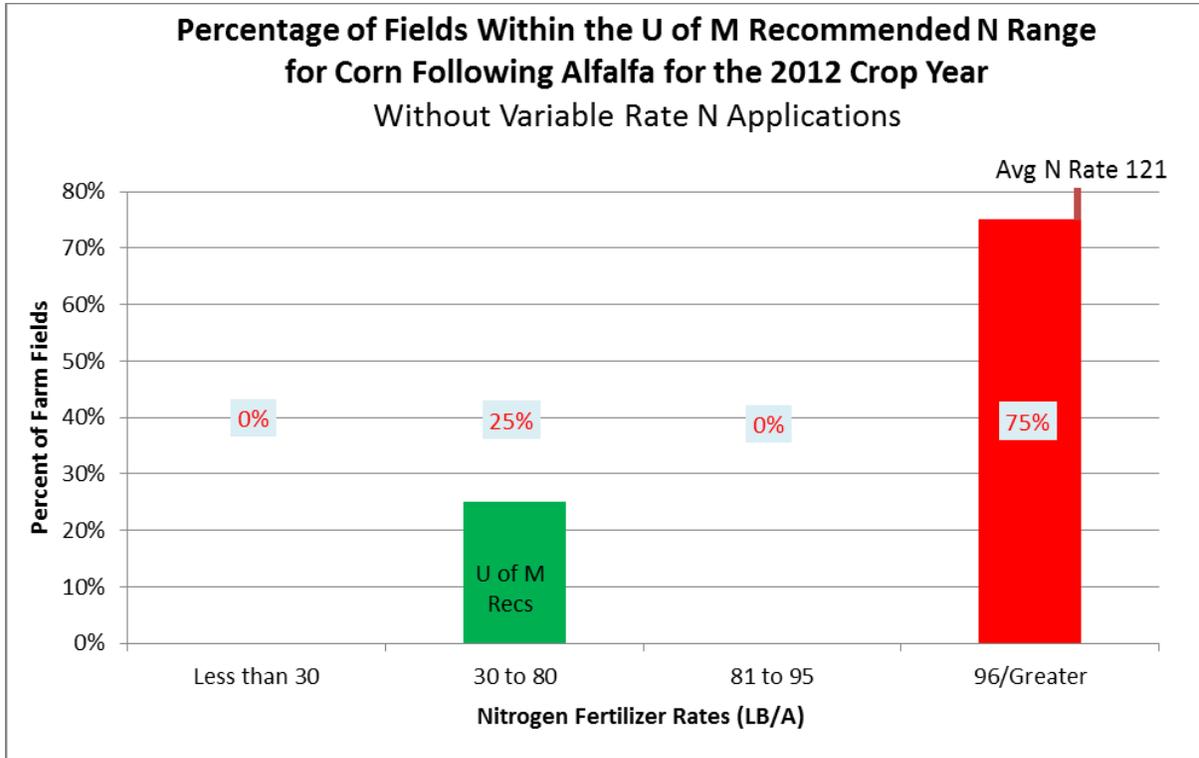


Figure 82. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SW BMP region for 2012: 8 fields.

Table 67. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	155	No Data	148
Avg N Rate LB/A	No Data	55	No Data	144

Less than five farmers reported planting corn following alfalfa in the SW BMP region for fields with variable rate applications of nitrogen.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region for fields:

- With and without variable rate applications of nitrogen.
- Without variable rate applications of nitrogen.
- With variable rate applications of nitrogen.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

There were 22 fields that were included in the IRR BMP region corn following alfalfa analysis. Figure 83 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the IRR BMP region.

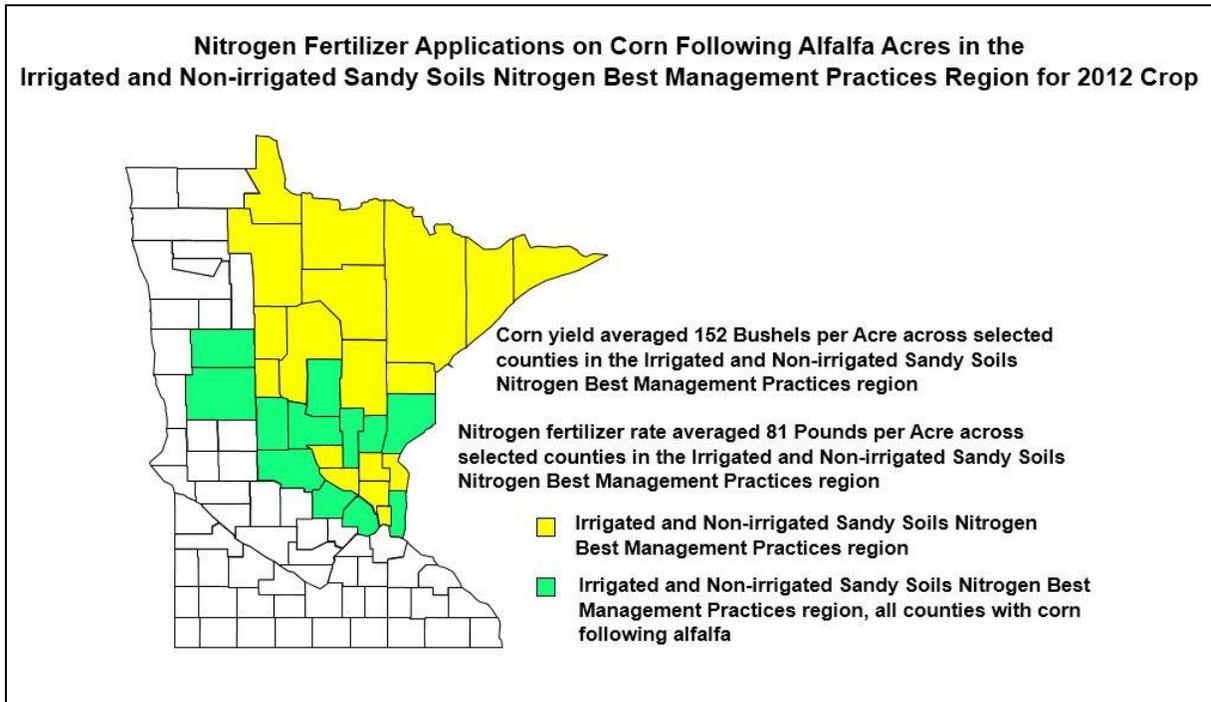


Figure 83. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 81 pounds per acre in the IRR BMP region.

Figure 84 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following alfalfa with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 68 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 84.

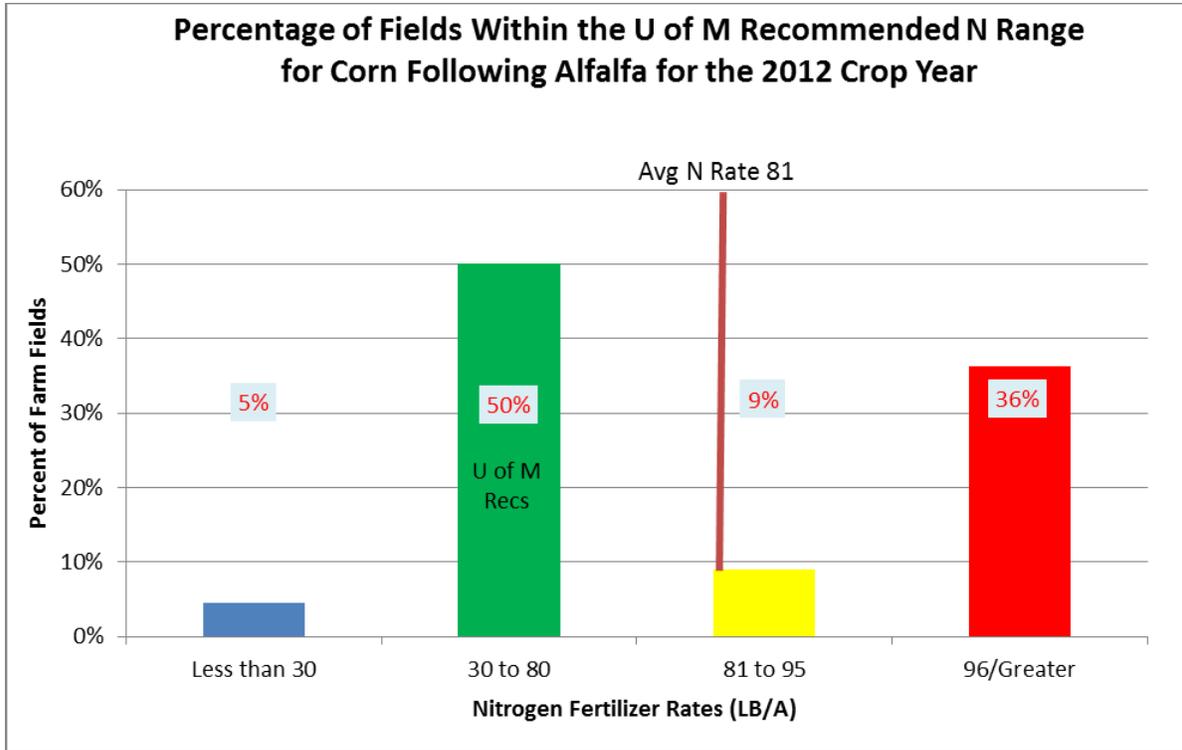


Figure 84. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 22 fields.

Table 68. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	145	130	167
Avg N Rate LB/A	15	50	88	131

Figure 85 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following alfalfa without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 69 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 85.

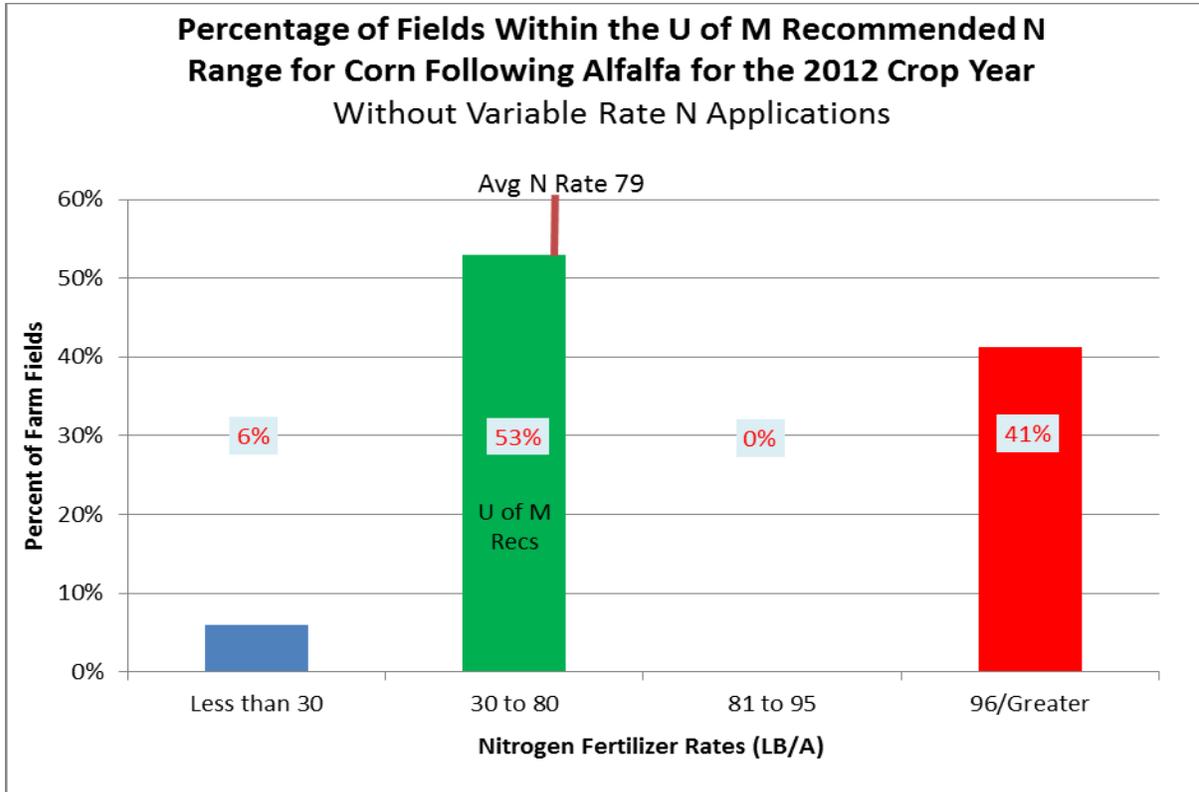


Figure 85. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2012: 17 fields.

Table 69. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	148	No Data	167
Avg N Rate LB/A	15	48	No Data	129

Figure 86 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following alfalfa with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 70 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 86.

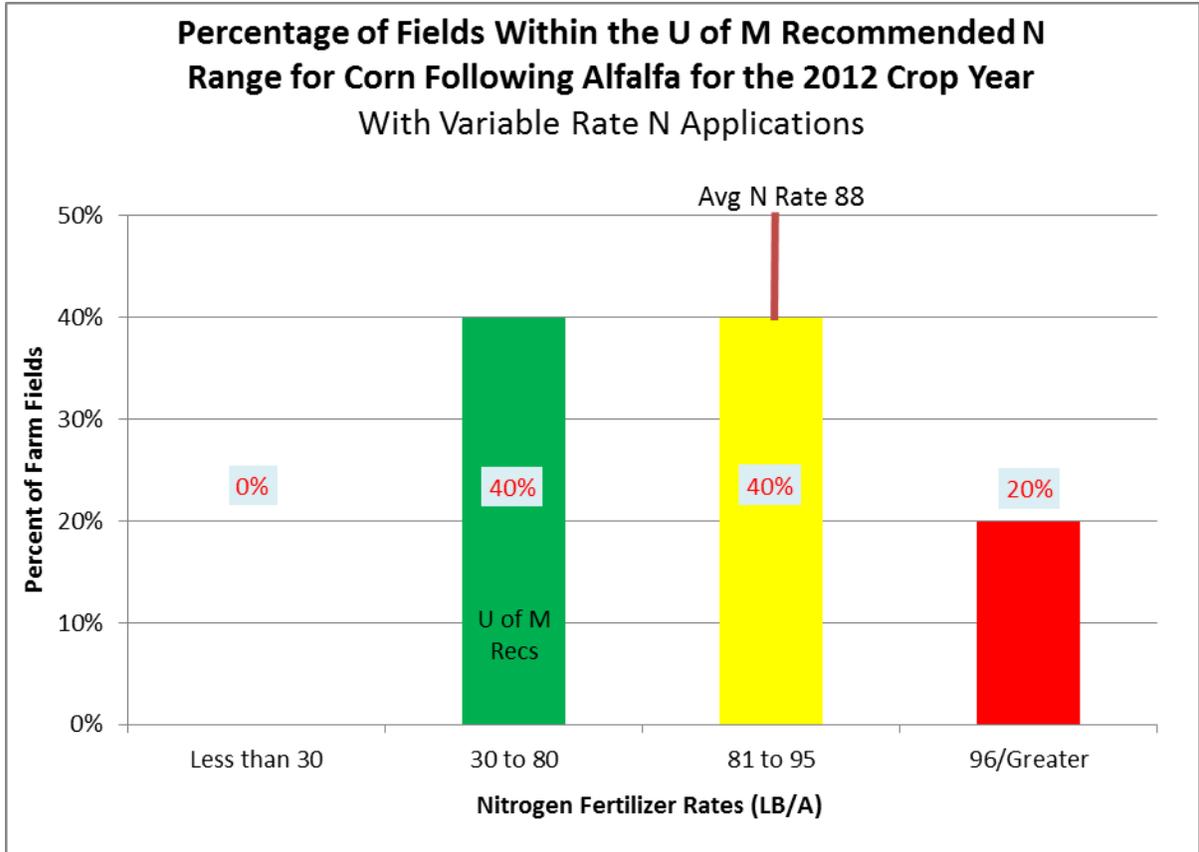


Figure 86. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2012: 5 fields.

Table 70. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	129	130	170
Avg N Rate LB/A	No Data	58	88	150

Statewide: Corn Following Small Grains

Statewide, two percent of the fields reported corn following small grains (Figure 87). There were 39 fields surveyed in Minnesota.

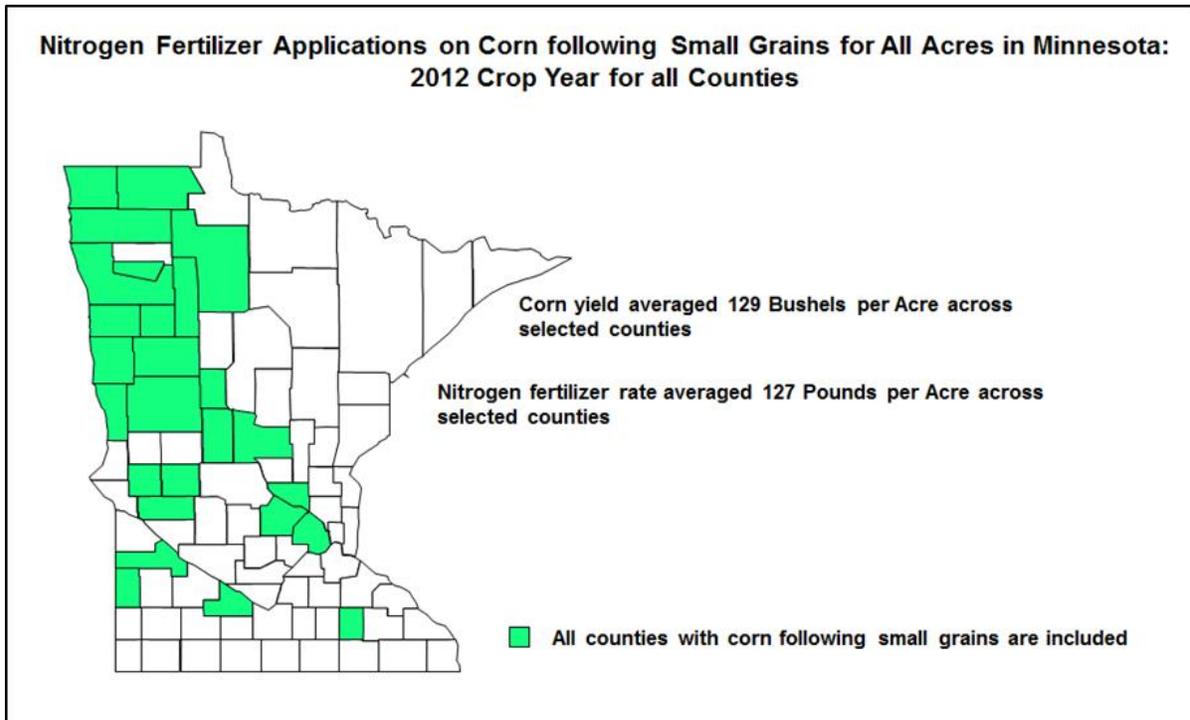


Figure 87. The corn yield averaged 129 bushels per acre and the nitrogen fertilizer rate averaged 127 pounds per acre on fields with corn following small grains in Minnesota.

Figure 88 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 71 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 88.

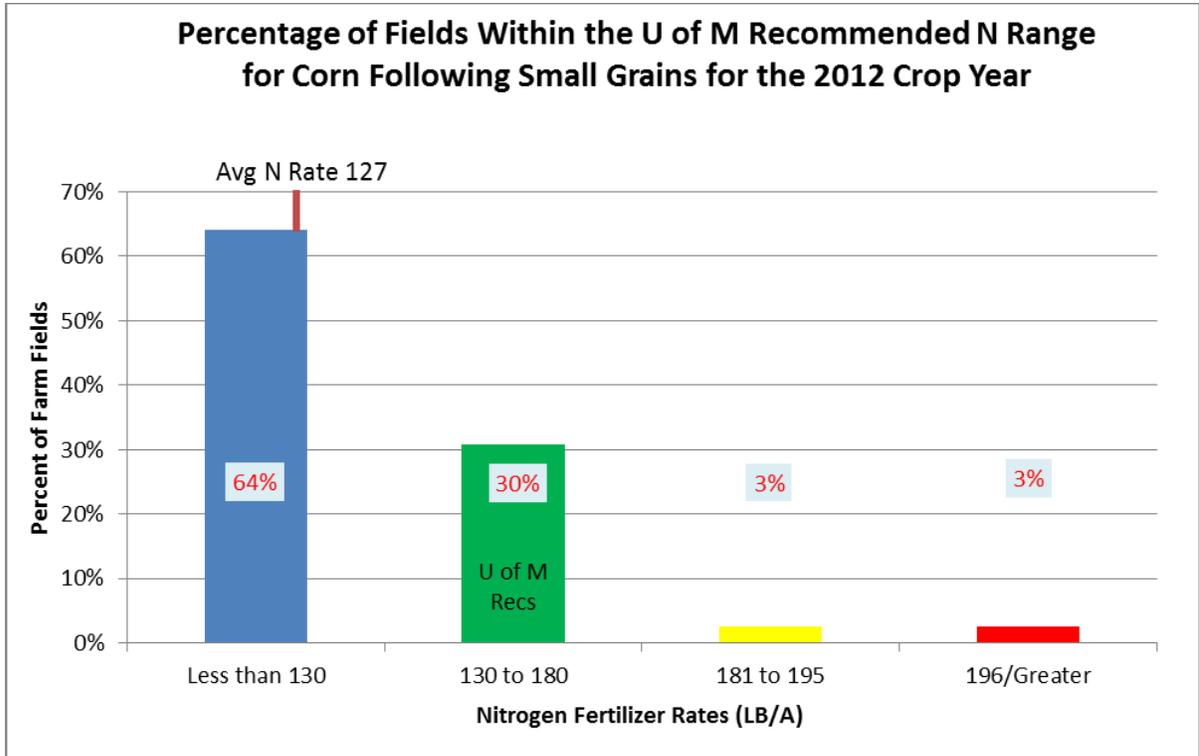


Figure 88. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in Minnesota for 2012: 39 fields.

Table 71. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	118	147	115	210
Avg N Rate LB/A	107	155	185	200

Figure 89 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 72 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 89.

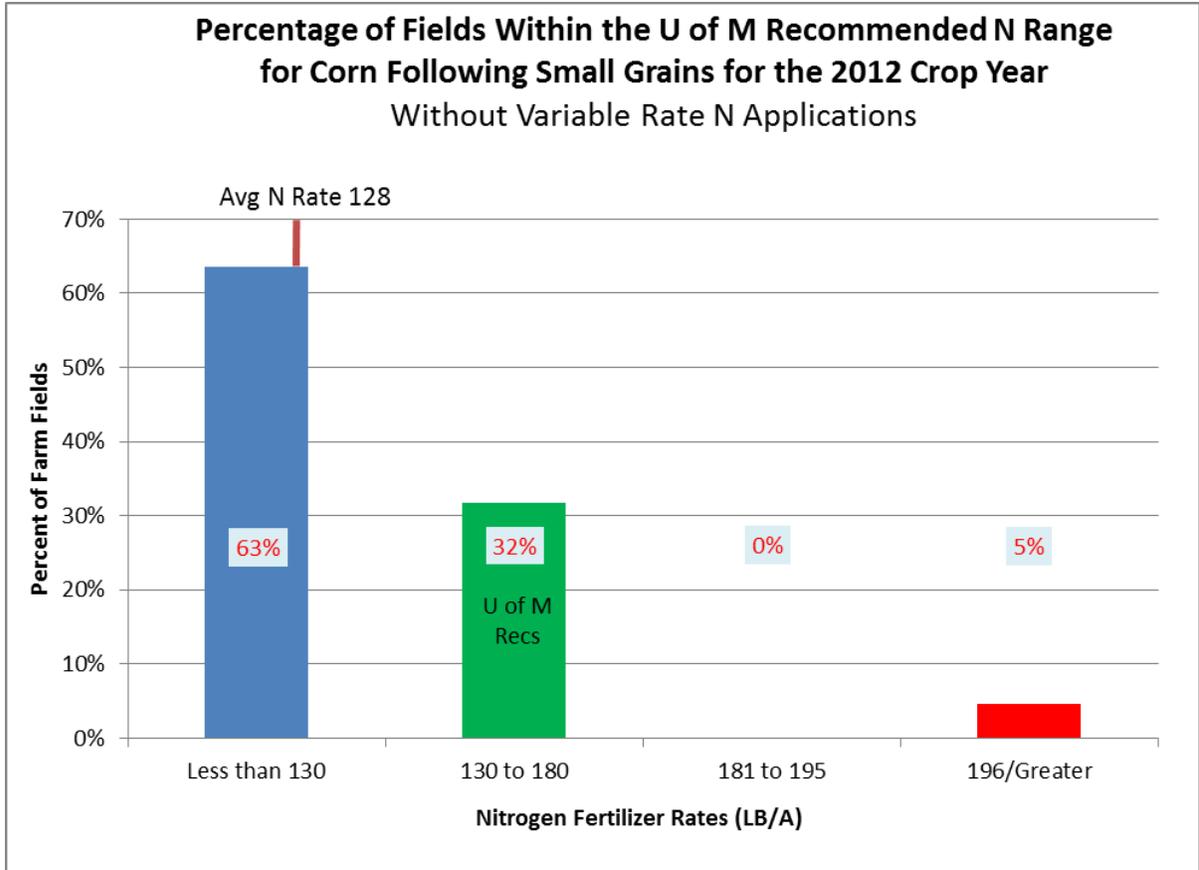


Figure 89. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in Minnesota for 2012: 22 fields.

Table 72. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	116	161	No Data	210
Avg N Rate LB/A	107	158	No Data	200

Figure 90 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 73 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 90.

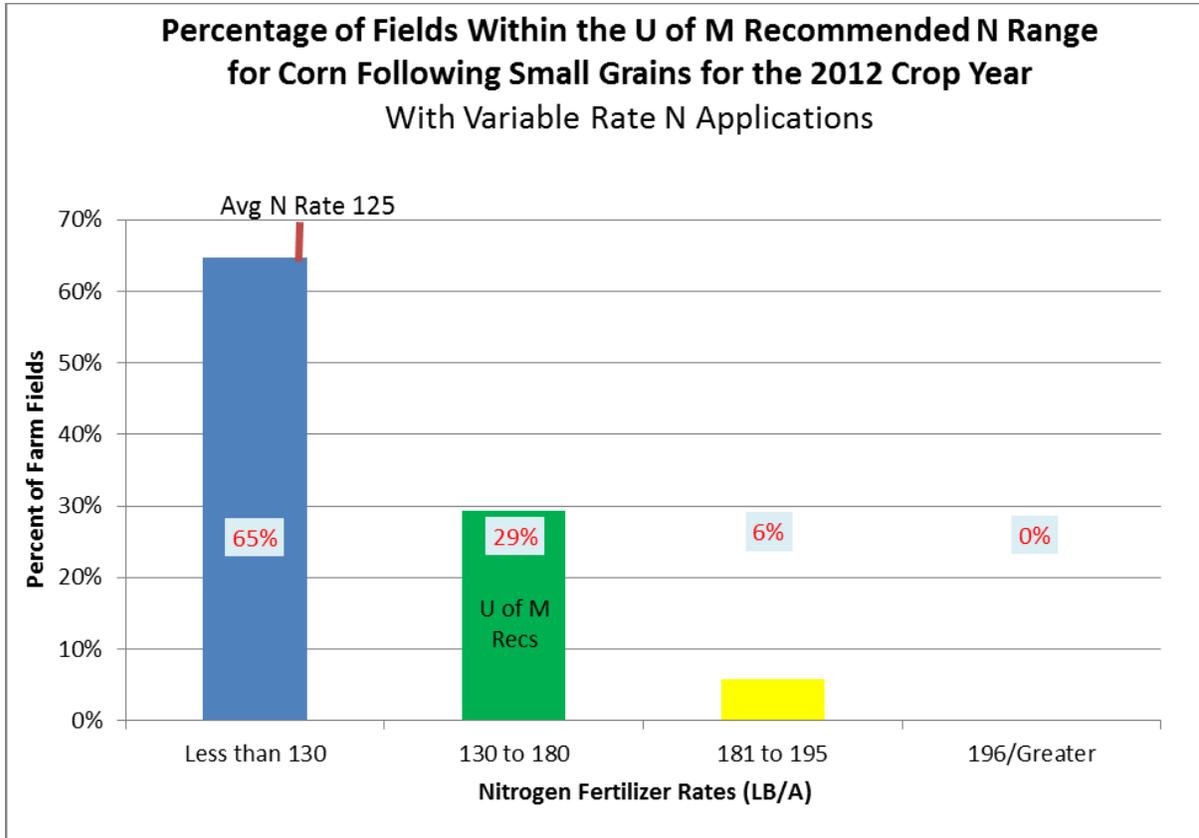


Figure 90. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in Minnesota for 2012: 17 fields.

Table 73. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	120	127	115	No Data
Avg N Rate LB/A	108	151	185	No Data

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following corn following small grains in the SE BMP region for fields:

- With and without variable rate applications of nitrogen.
- Without variable rate applications of nitrogen.
- With variable rate applications of nitrogen.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following corn following small grains in the SC BMP region for fields:

- With and without variable rate applications of nitrogen.
- Without variable rate applications of nitrogen.
- With variable rate applications of nitrogen.

Southwestern and West Central Region: Corn Following Small Grains

There were 7 fields that were included in the SW BMP region corn following small grains analysis. Figure 91 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the SW BMP region.

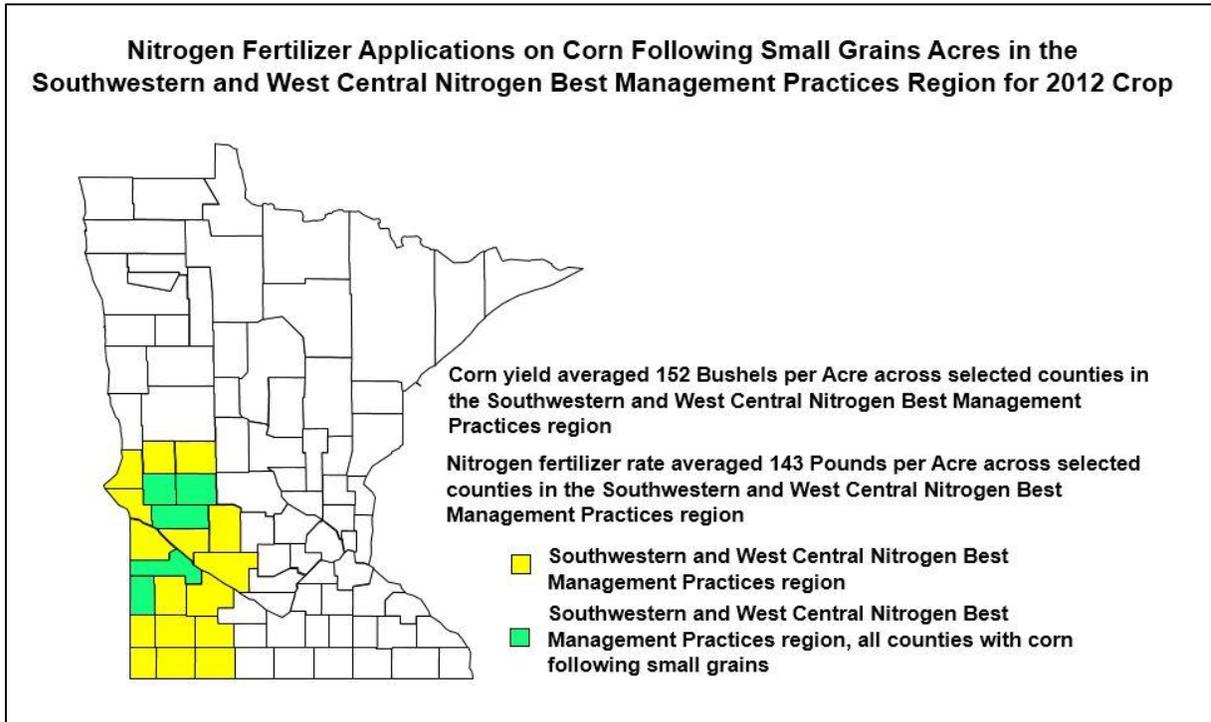


Figure 91. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 143 pounds per acre in the SW BMP region.

Figure 92 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following small grains with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 74 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 92.

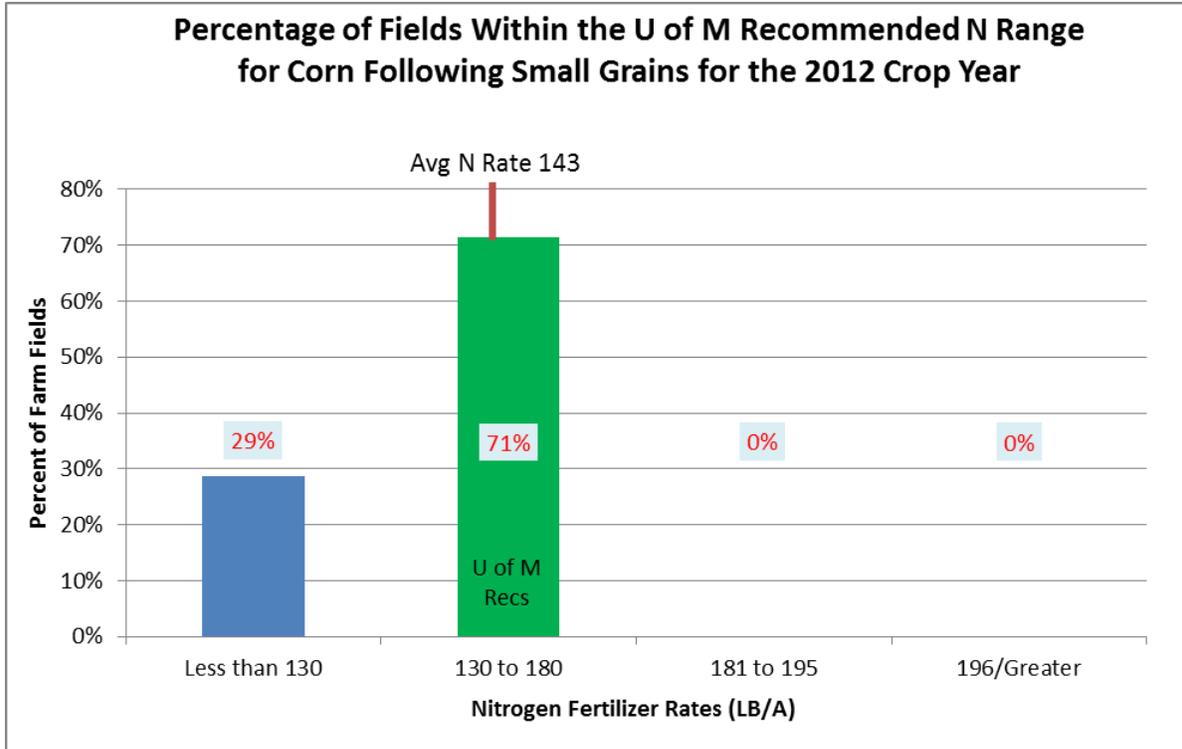


Figure 92. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the SW BMP region for 2012: 7 fields.

Table 74. Nitrogen fertilizer rates and associated corn yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	185	139	No Data	No Data
Avg N Rate LB/A	119	153	No Data	No Data

Less than five farmers reported planting corn following small grains in the SW BMP region for fields:

- Without variable rate applications of nitrogen.
- With variable rate applications of nitrogen.

Northwestern Region: Corn Following Small Grains

There were 15 fields that were included in the NW BMP region corn following small grains analysis. Figure 93 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the NW BMP region.

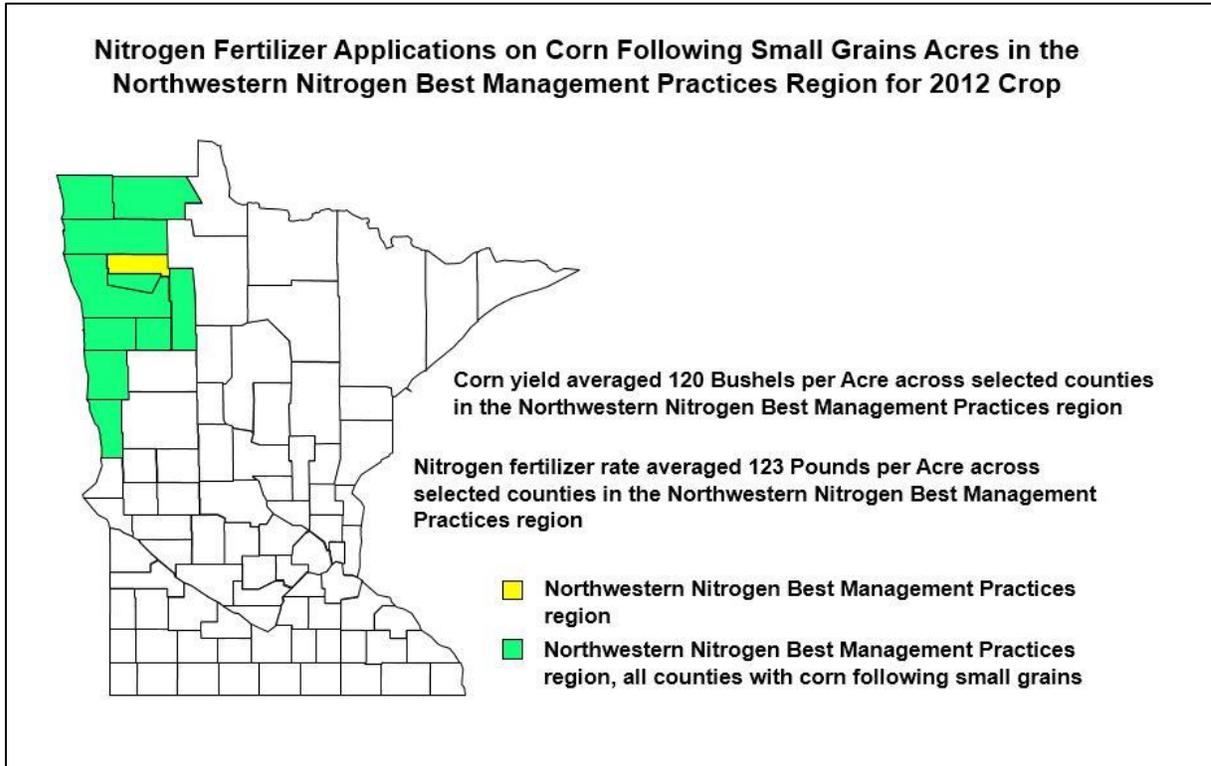


Figure 93. The corn yield averaged 120 bushels per acre and the nitrogen fertilizer rate averaged 123 pounds per acre in the NW BMP region.

Figure 94 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following small grains with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 75 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 94.

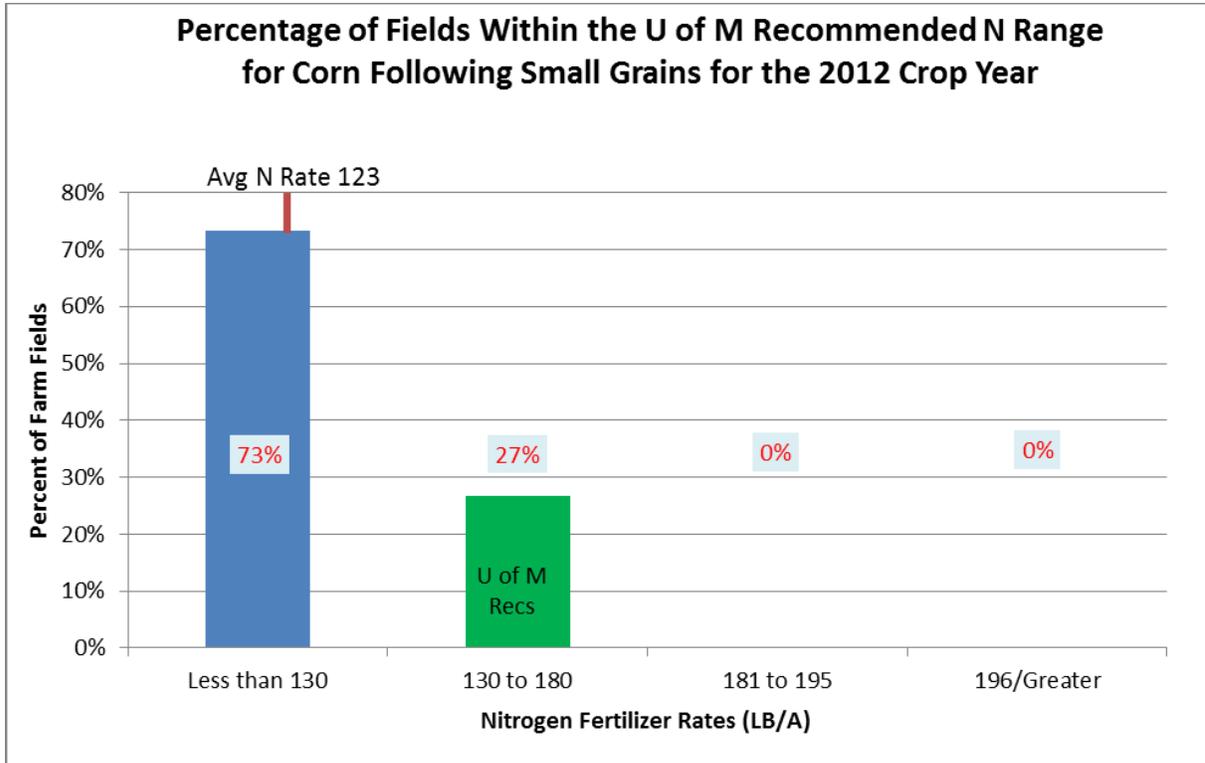


Figure 94. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the NW BMP region for 2012: 15 fields.

Table 75. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	113	138	No Data	No Data
Avg N Rate LB/A	111	154	No Data	No Data

Figure 95 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following small grains without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 76 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 95.

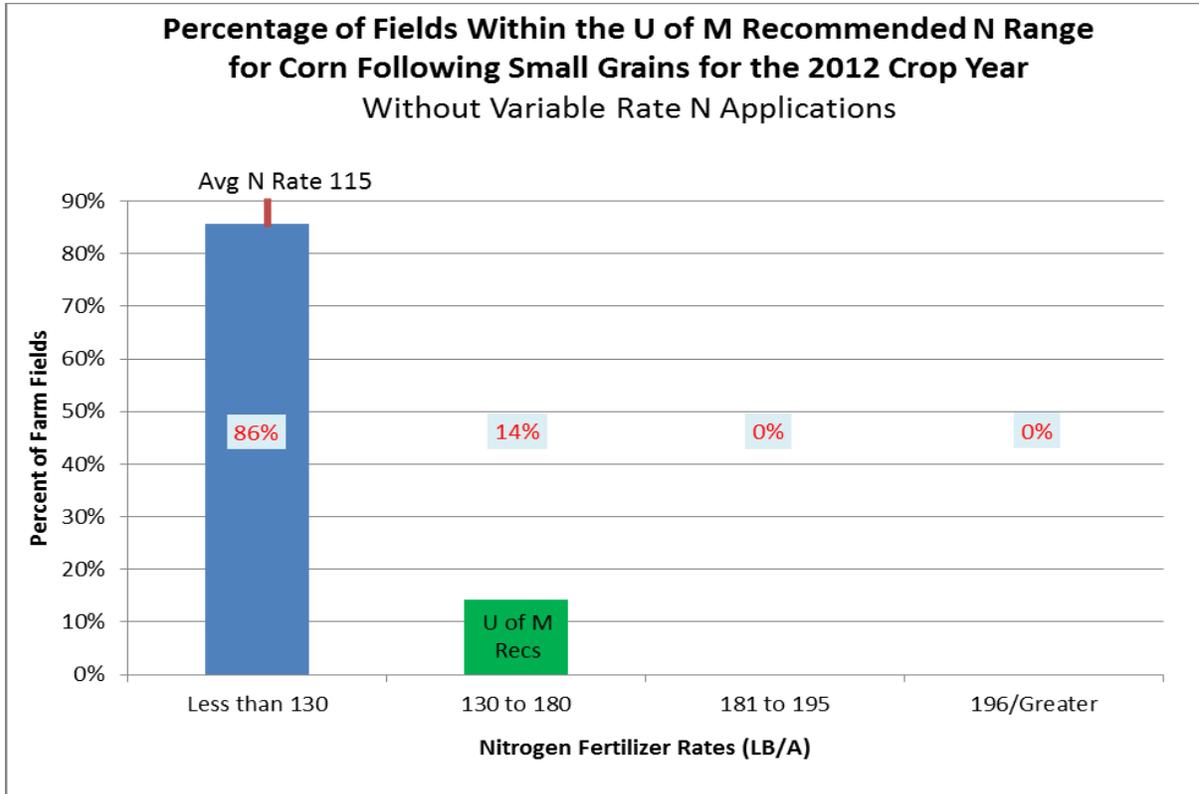


Figure 95. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the NW BMP region for 2012: 7 fields.

Table 76. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	113	143	No Data	No Data
Avg N Rate LB/A	109	144	No Data	No Data

Figure 96 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following small grains with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 77 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 96.

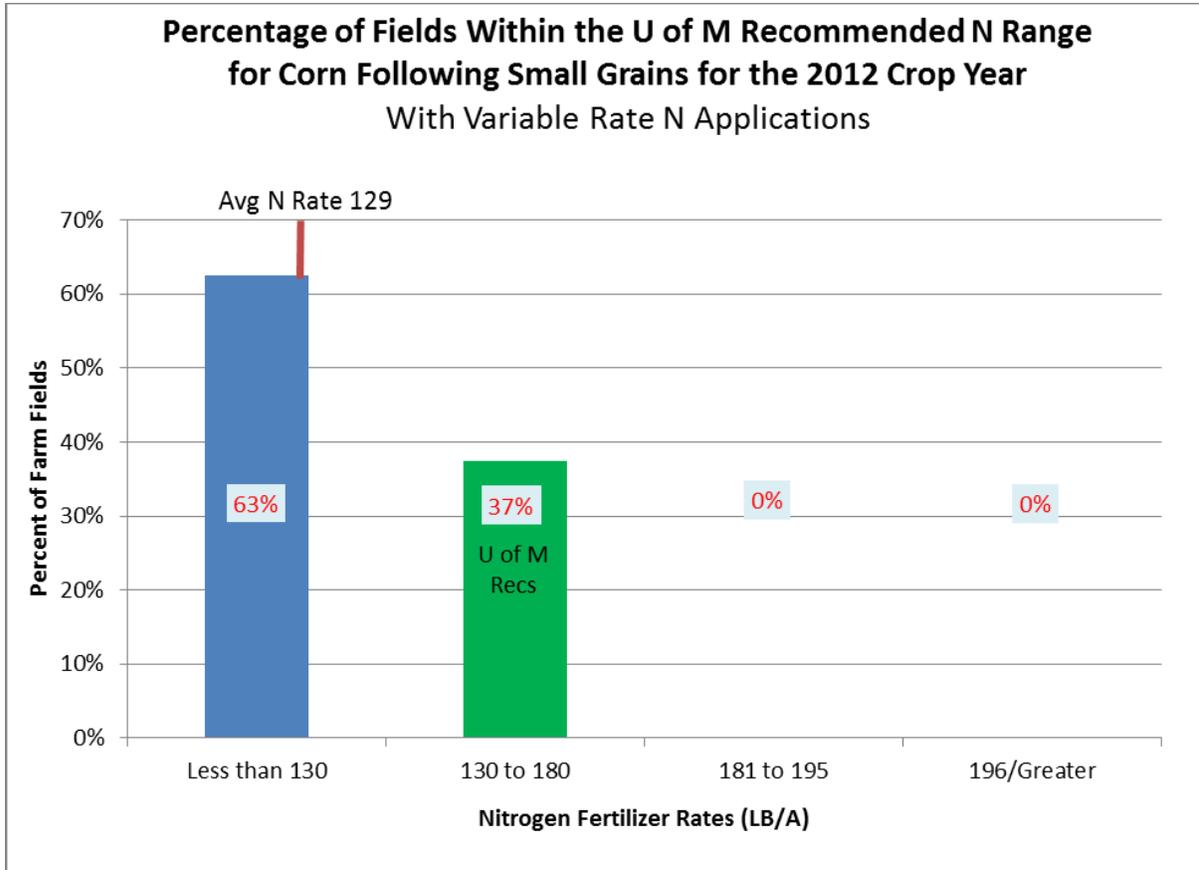


Figure 96. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in the NW BMP region for 2012: 8 fields.

Table 77. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	116	137	No Data	No Data
Avg N Rate LB/A	114	155	No Data	No Data

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

There were 15 fields that were included in the IRR BMP region corn following small grains analysis. Figure 97 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the IRR BMP region.

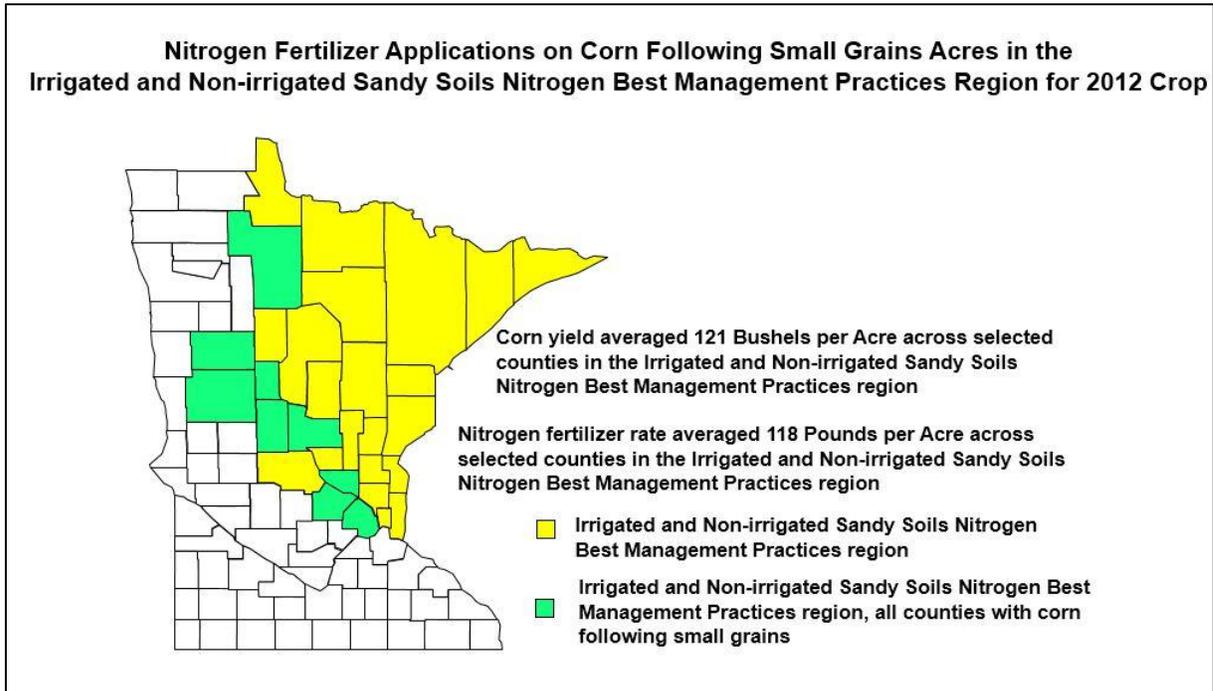


Figure 97. The corn yield averaged 121 bushels per acre and the nitrogen fertilizer rate averaged 118 pounds per acre in the IRR BMP region.

Figure 98 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following small grains with and without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 78 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 98.

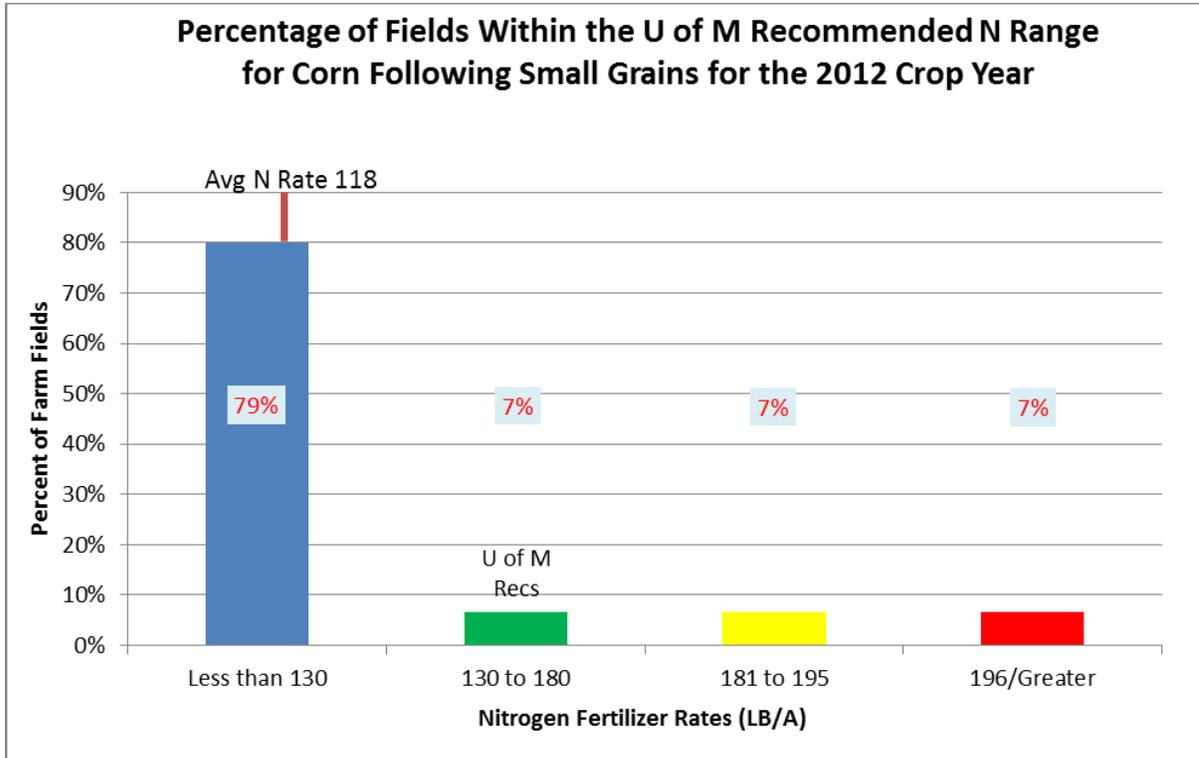


Figure 98. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the IRR BMP region for 2012: 15 fields.

Table 78. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	110	170	115	210
Avg N Rate LB/A	102	160	185	200

Figure 99 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following small grains without variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 79 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 99.

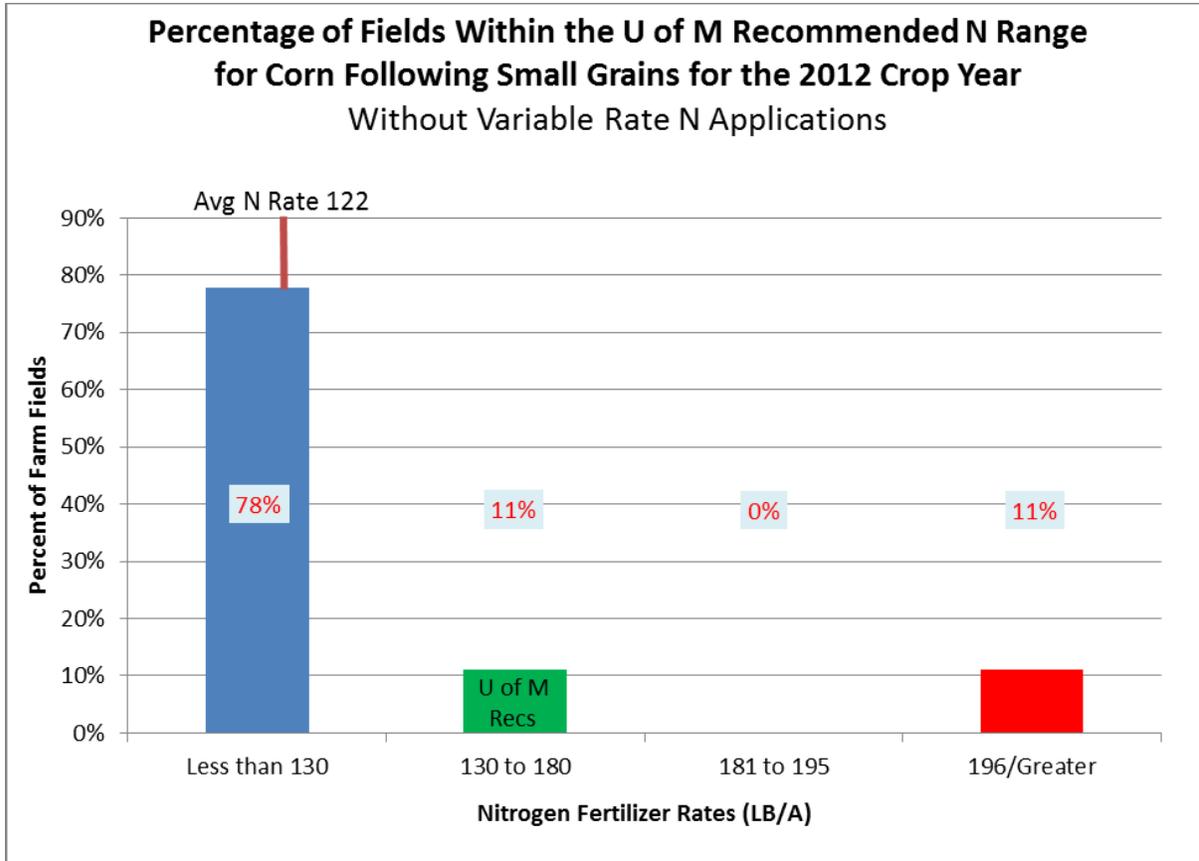


Figure 99. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the IRR BMP region for 2012: 9 fields.

Table 79. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	107	170	No Data	210
Avg N Rate LB/A	105	160	No Data	200

Figure 100 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following small grains with variable rate nitrogen applications using a “nitrogen to corn price ratio” of 0.05. Table 80 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 100.

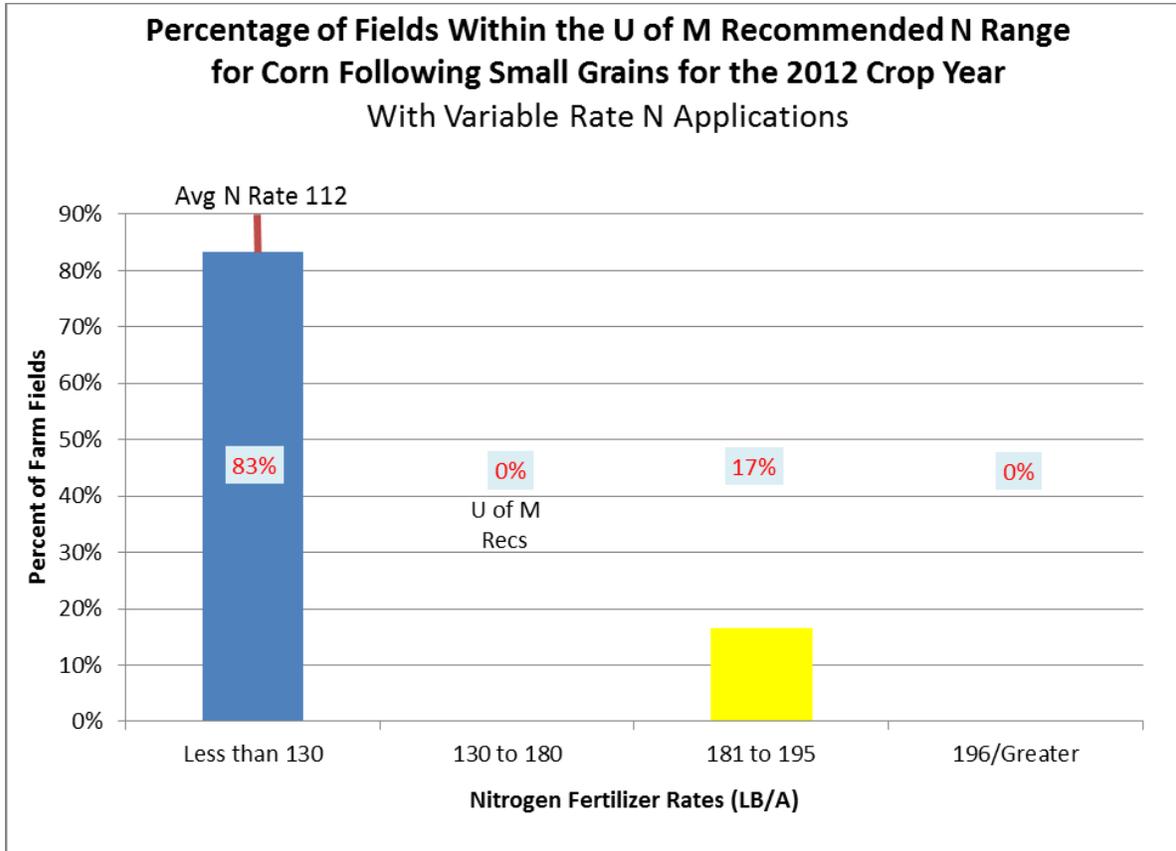


Figure 100. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the IRR BMP region for 2012: 6 fields.

Table 80. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	115	No Data	115	No Data
Avg N Rate LB/A	105	No Data	185	No Data

Analysis of Nitrogen Fertilizer Rate by Yields

The analysis demonstrates the quantity of nitrogen applied to corn when applying commercial nitrogen fertilizer compared to the corresponding yields for the 2012 corn crop.

The categories of the analysis are grouped into corn yields, as reported by the farmer:

- Less than 155 bushels per acre.
- Between and including 155 bushels to 175 bushels per acre.
- Greater than 175 bushels per acre.

Nitrogen recommendations are detailed to the five most common crop histories:

- Corn following soybeans.
- Corn following corn.
- Corn following corn following alfalfa.
- Corn following alfalfa.
- Corn following small grains.

Statewide: Corn Following Soybeans

Figure 101 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 81 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 101.

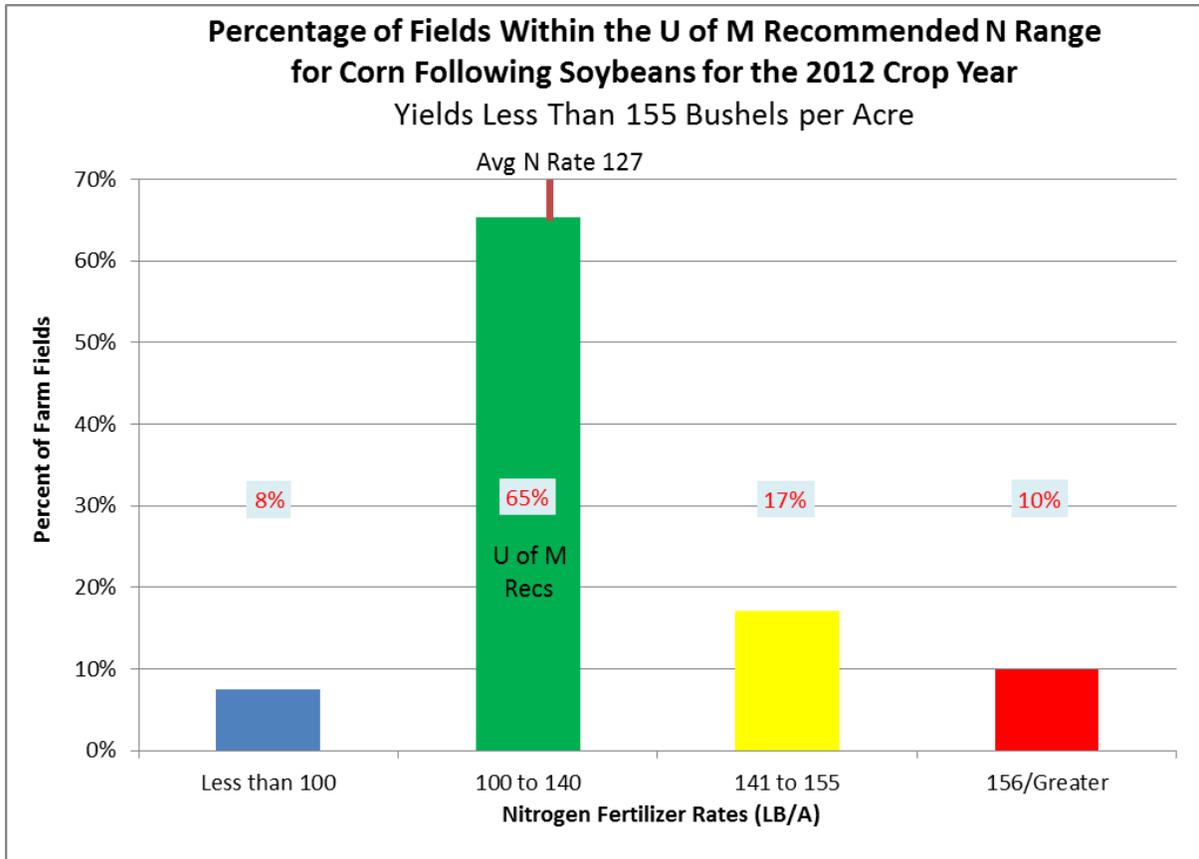


Figure 101. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in Minnesota for 2012: 292 fields.

Table 81. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	108	130	138	143
Avg N Rate LB/A	74	122	149	164

Figure 102 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 82 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 102.

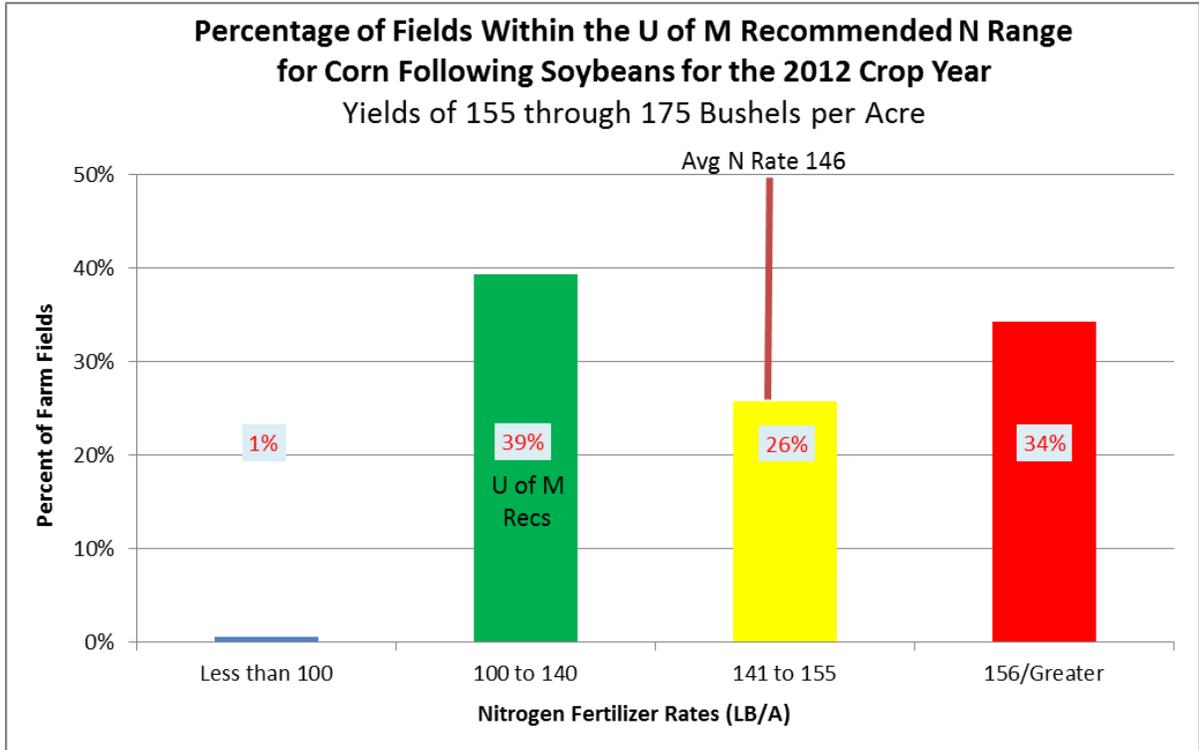


Figure 102. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in Minnesota for 2012: 338 fields.

Table 82. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	168	165	167	168
Avg N Rate LB/A	89	127	149	168

Figure 103 details the distribution of nitrogen fertilizer rates in Minnesota for corn following soybeans with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 83 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 103.

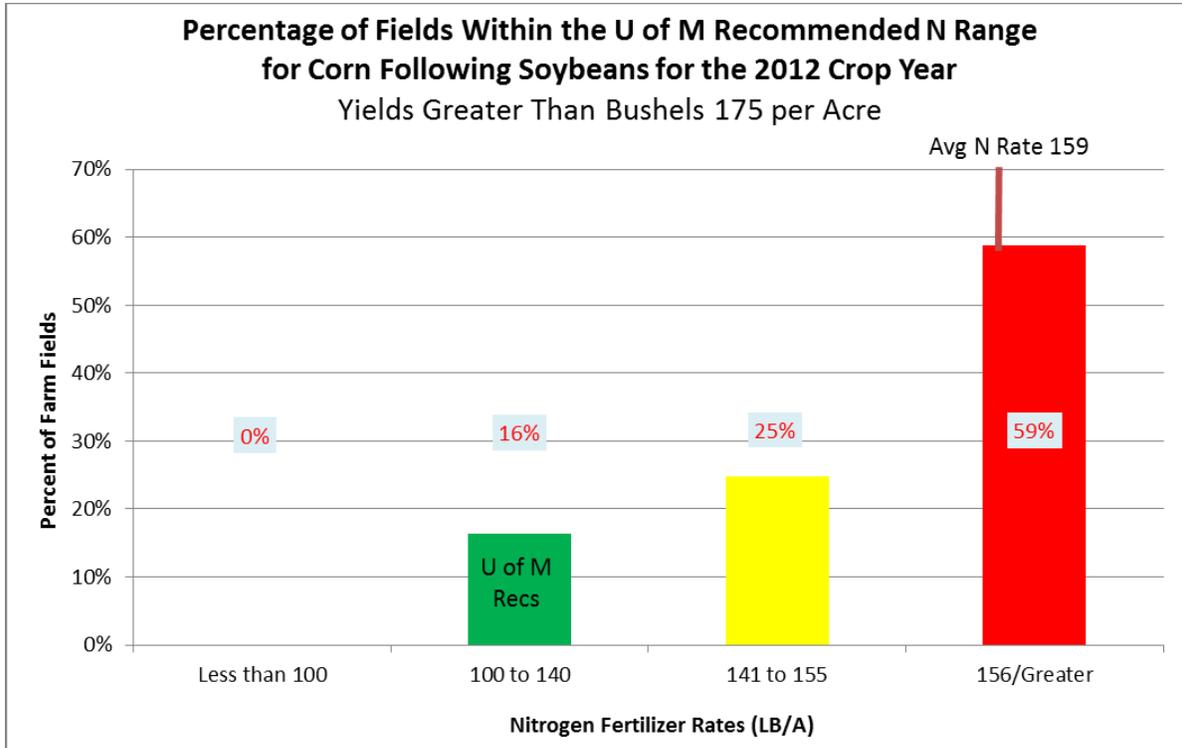


Figure 103. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in Minnesota for 2012: 282 fields.

Table 83. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	187	189	191
Avg N Rate LB/A	No Data	134	150	169

Southeastern Region: Corn Following Soybeans

Figure 104 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 84 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 104.

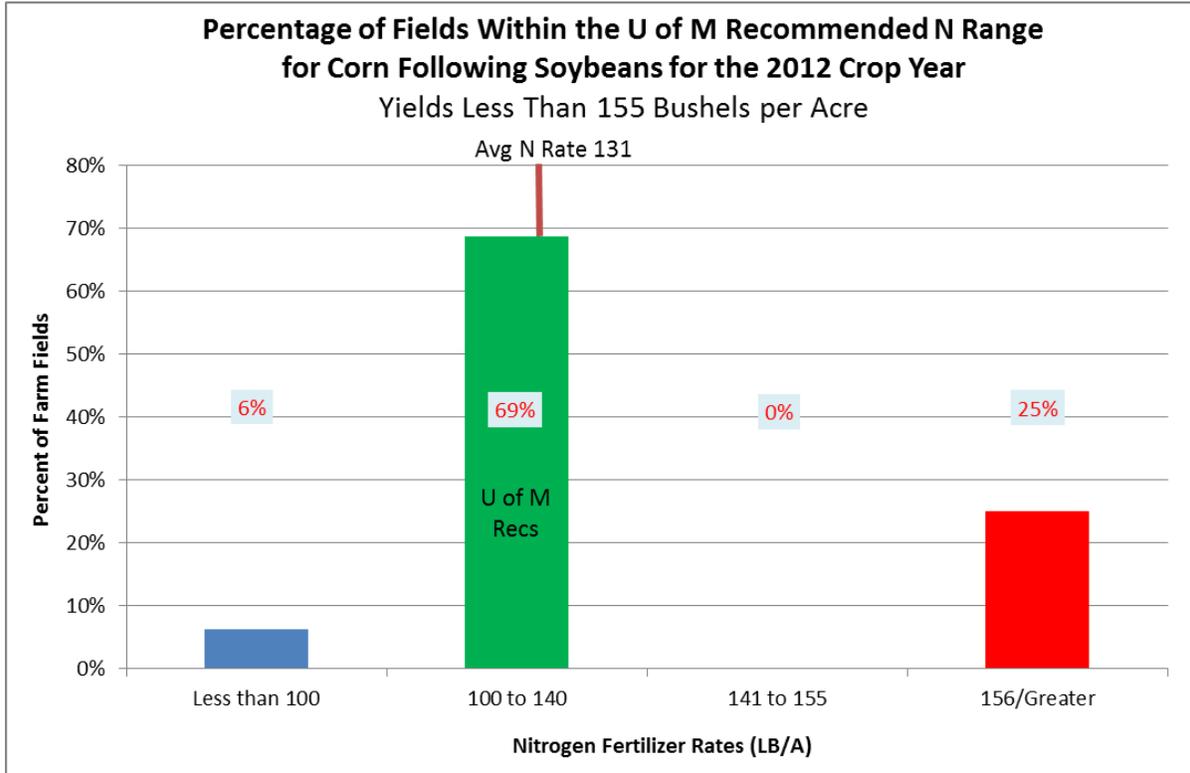


Figure 104. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SE BMP region for 2012: 16 fields.

Table 84. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	110	133	No Data	138
Avg N Rate LB/A	70	125	No Data	163

Figure 105 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 85 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 105.

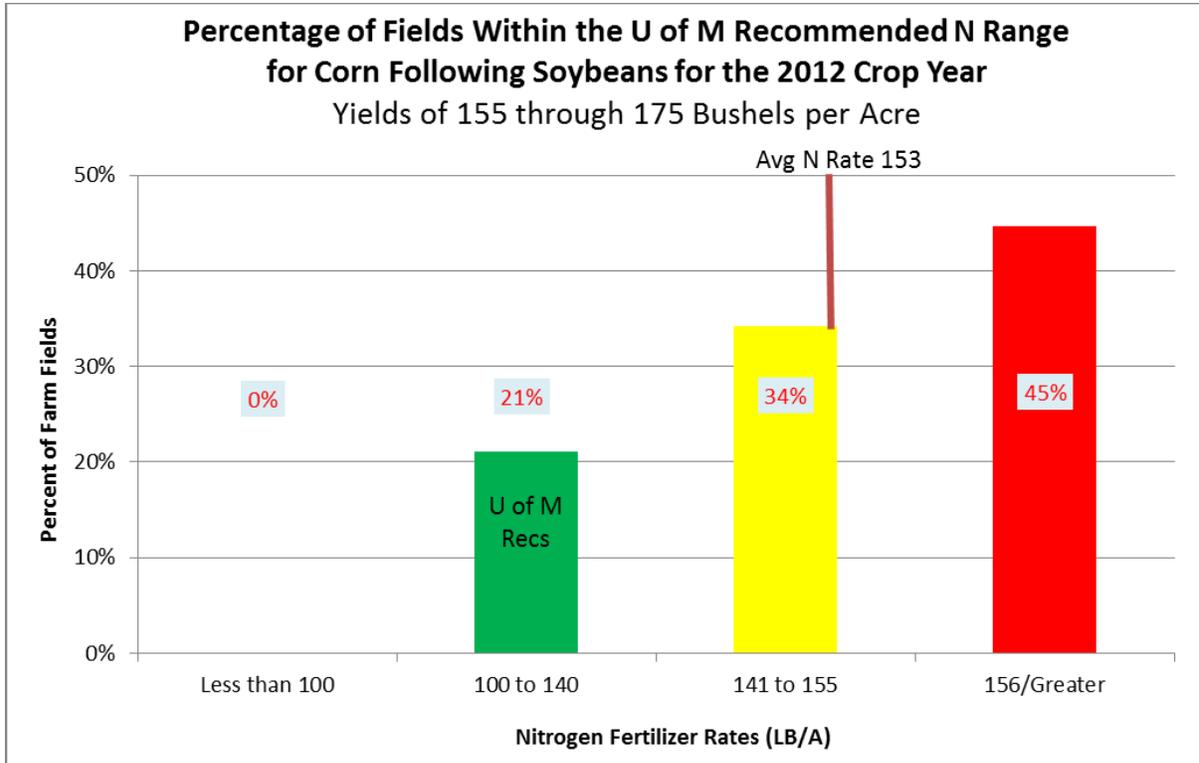


Figure 105. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 38 fields.

Table 85. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	168	172	168
Avg N Rate LB/A	No Data	130	149	166

Figure 106 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following soybeans with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 86 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 106.

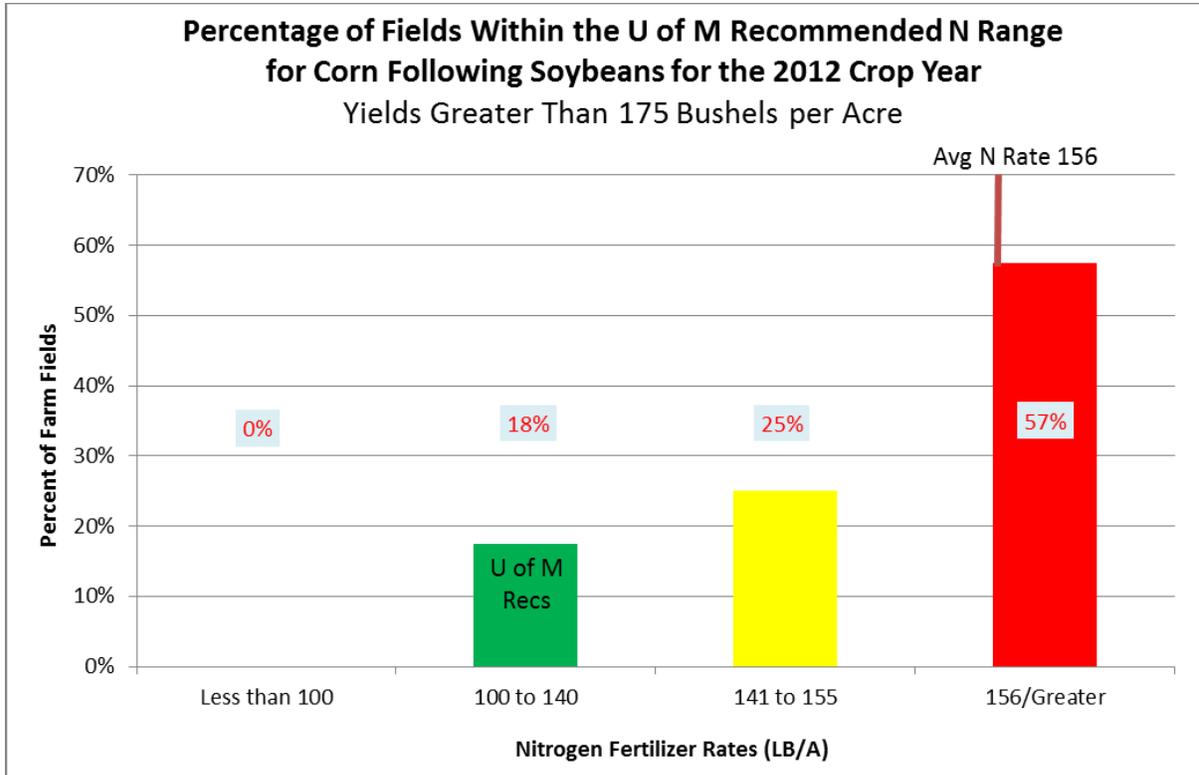


Figure 106. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SE BMP region for 2012: 40 fields.

Table 86. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	186	189	195
Avg N Rate LB/A	No Data	127	150	168

South Central Region: Corn Following Soybeans

Figure 107 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 87 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 107.

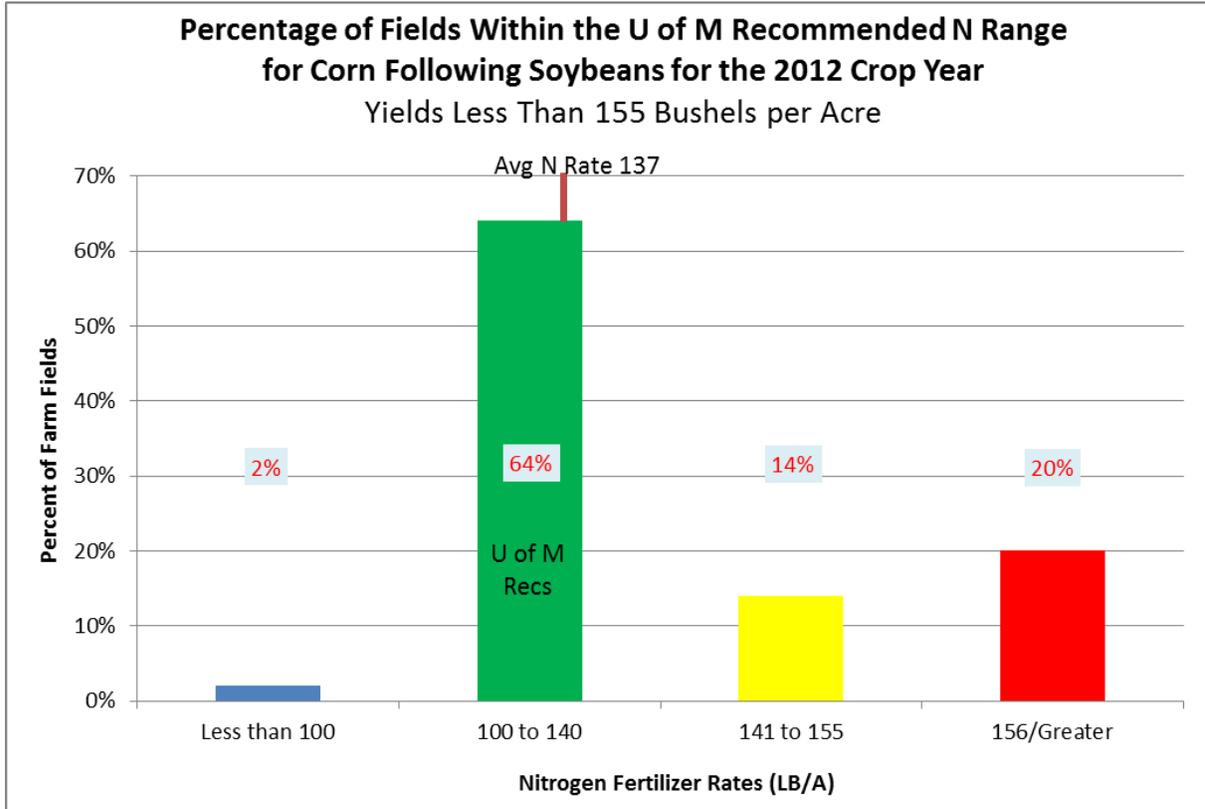


Figure 107. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SC BMP region for 2012: 50 fields.

Table 87. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	120	141	139	145
Avg N Rate LB/A	93	127	149	164

Figure 108 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 88 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 108.

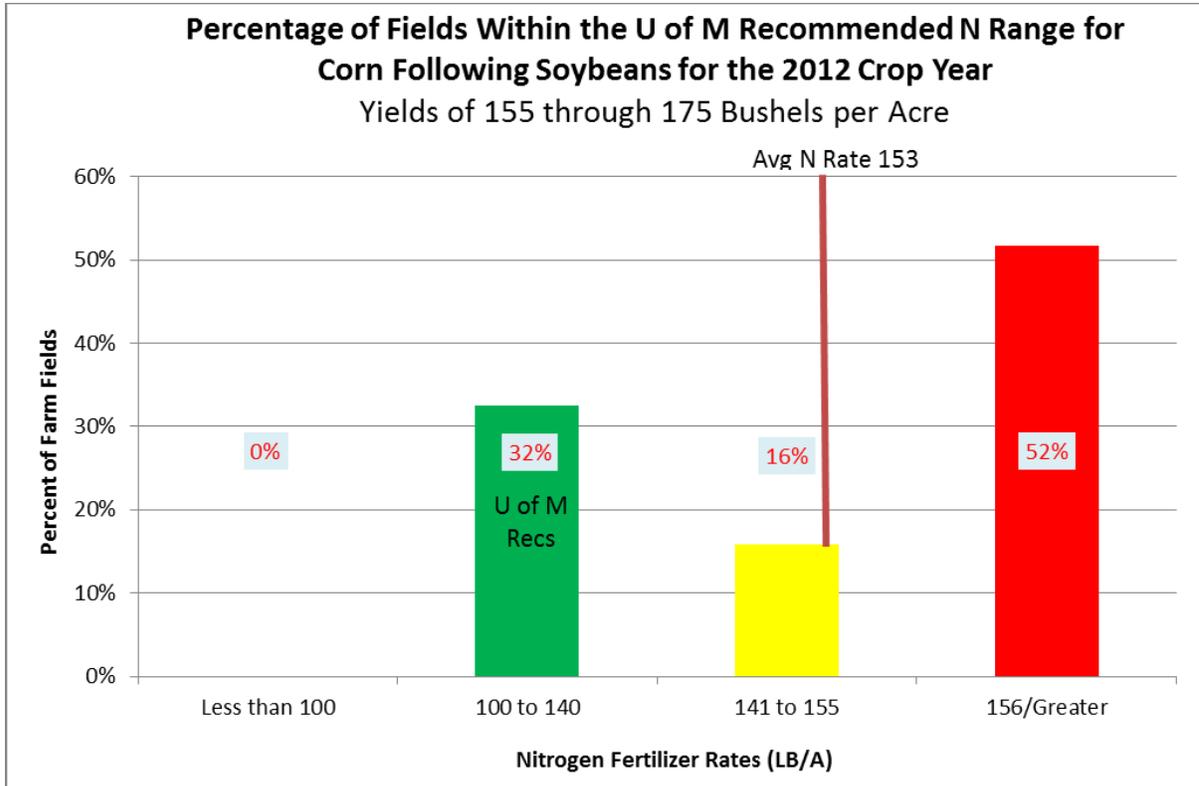


Figure 108. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 114 fields.

Table 88. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	164	167	168
Avg N Rate LB/A	No Data	129	149	168

Figure 109 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following soybeans with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 89 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 109.

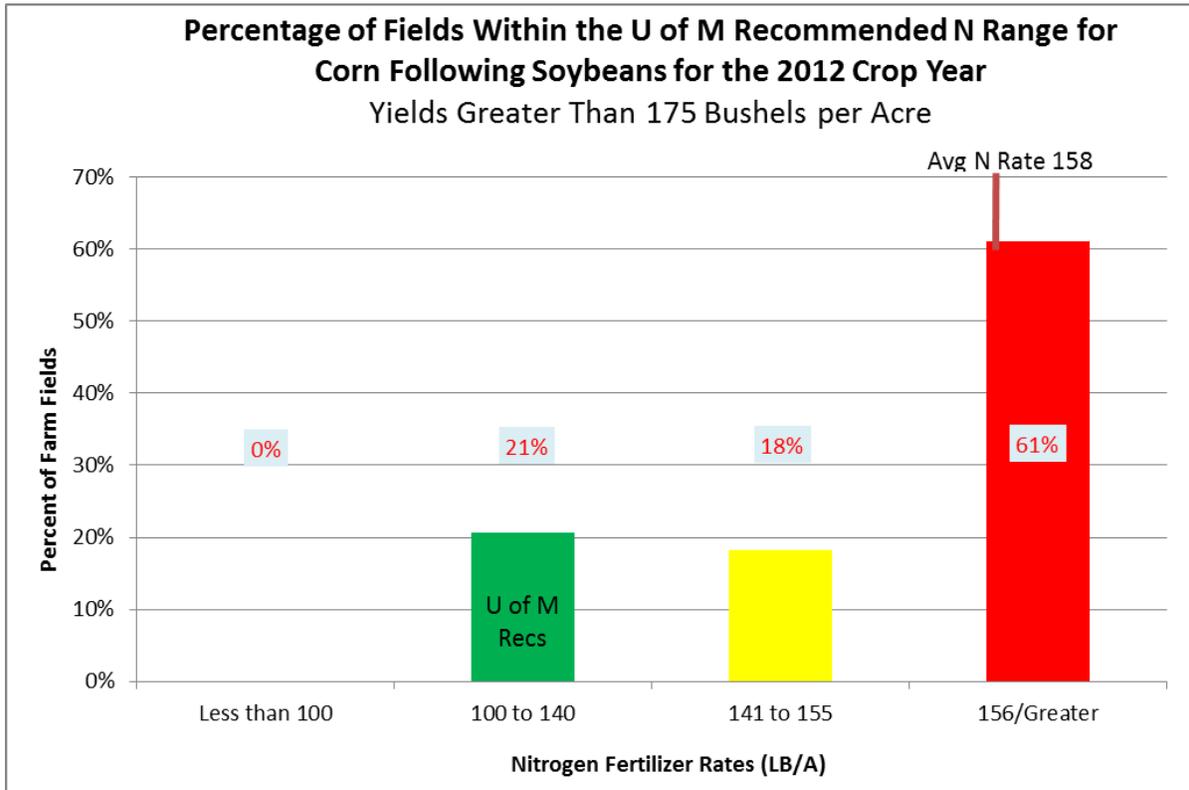


Figure 109. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SC BMP region for 2012: 121 fields.

Table 89. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	188	188	190
Avg N Rate LB/A	No Data	134	150	169

Southwestern and West Central Region: Corn Following Soybeans

Figure 110 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 90 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 110.

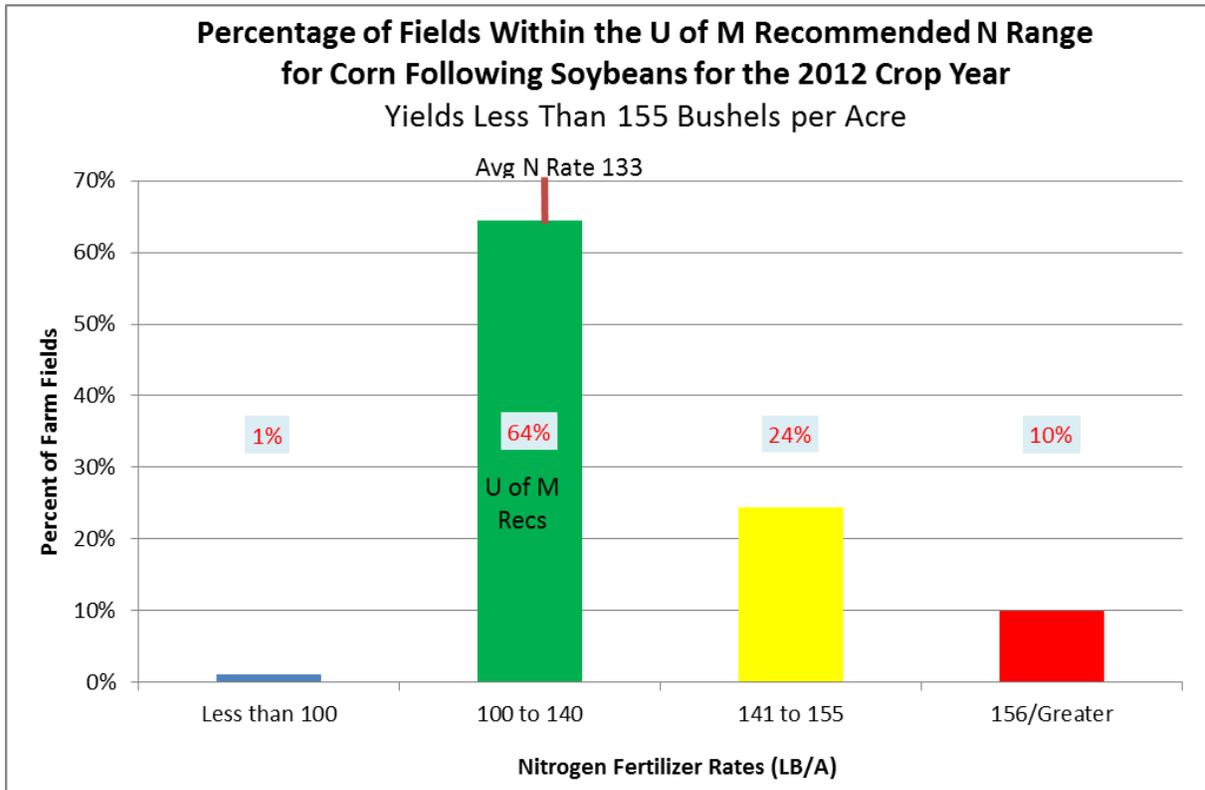


Figure 110. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SW BMP region for 2012: 90 fields.

Table 90. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	40	135	139	142
Avg N Rate LB/A	15	124	149	163

Figure 111 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 91 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 111.

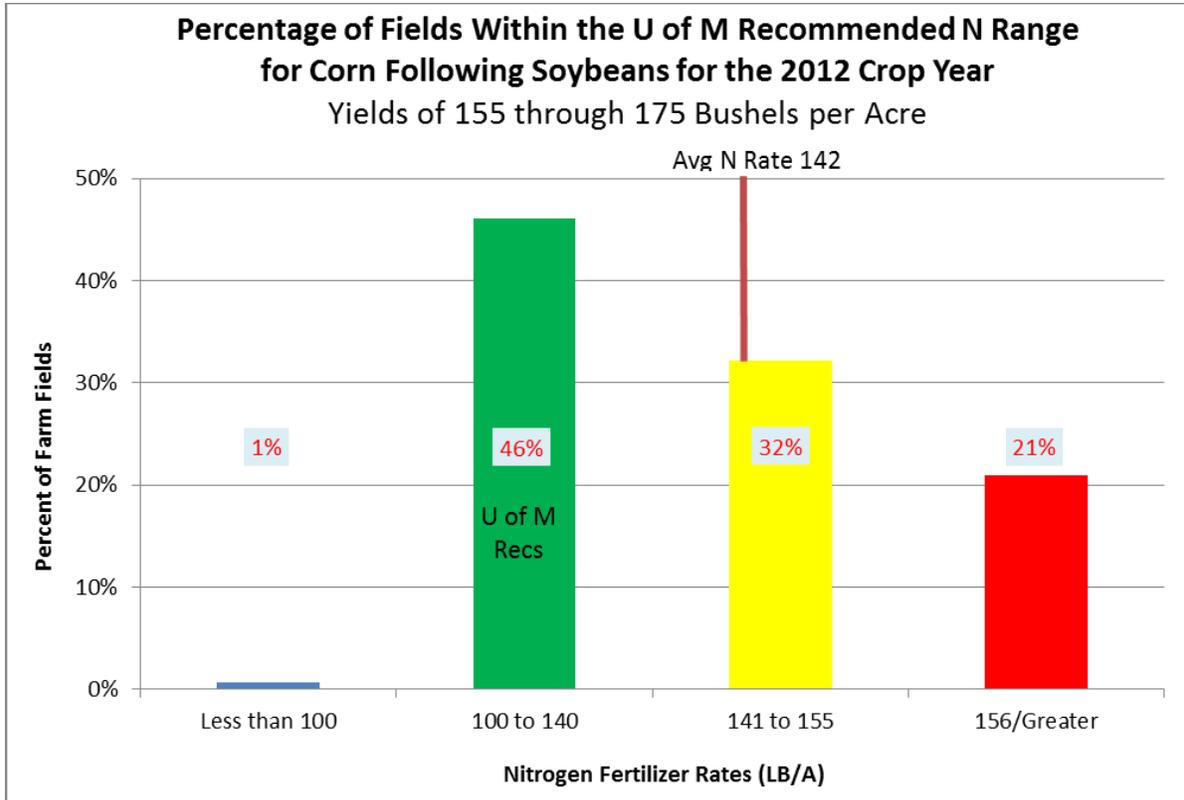


Figure 111. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 143 fields.

Table 91. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	170	165	166	168
Avg N Rate LB/A	84	126	149	168

Figure 112 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following soybeans with yields greater than 175 bushels using a “nitrogen to corn price ratio” of 0.05. Table 92 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 112.

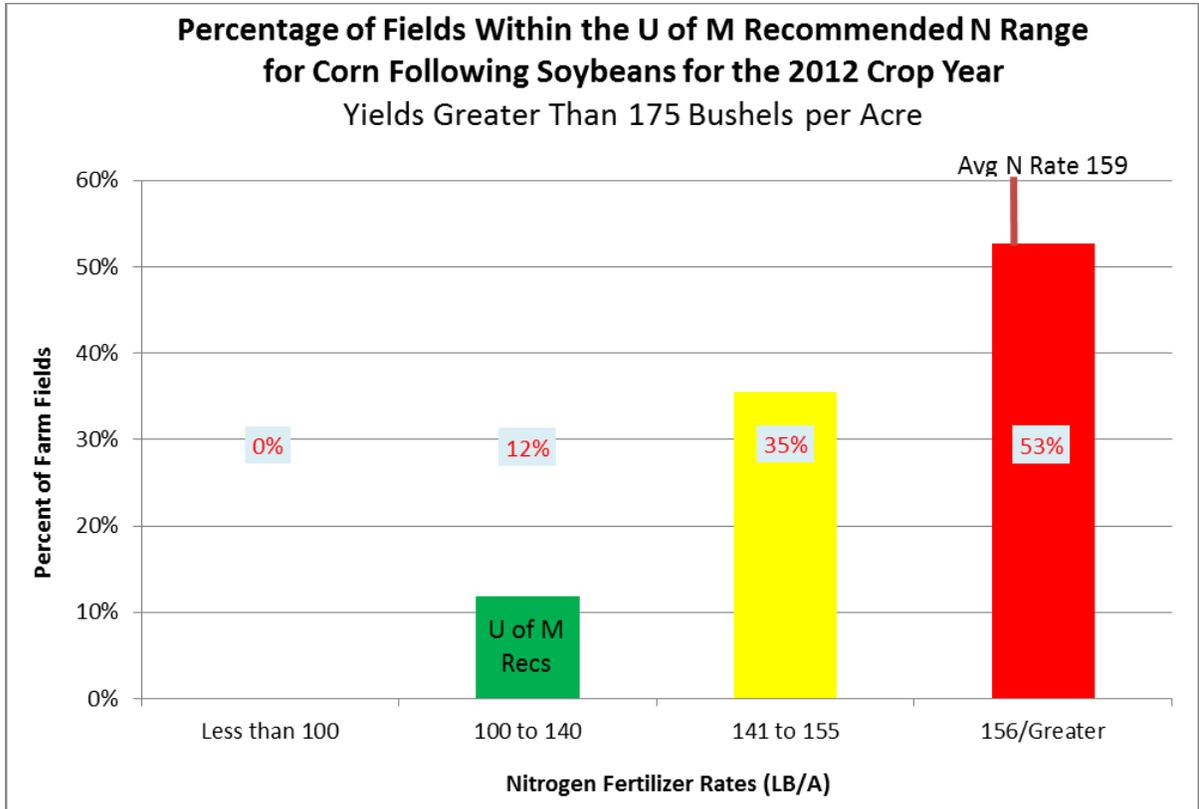


Figure 112. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SW BMP region for 2012: 93 fields.

Table 92. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	184	189	189
Avg N Rate LB/A	No Data	139	149	171

Northwestern Region: Corn Following Soybeans

Figure 113 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 93 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 113.

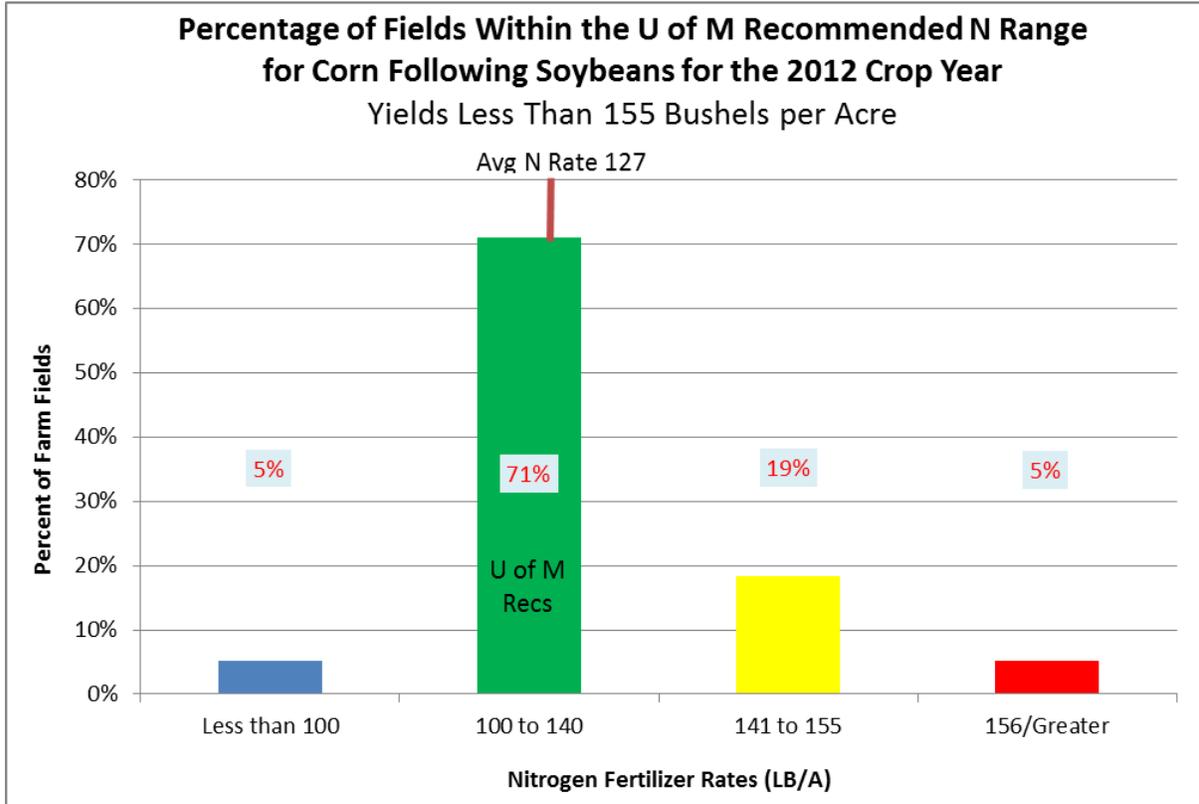


Figure 113. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the NW BMP for 2012: 38 fields.

Table 93. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	123	125	144	150
Avg N Rate LB/A	79	123	148	162

Figure 114 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 94 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 114.

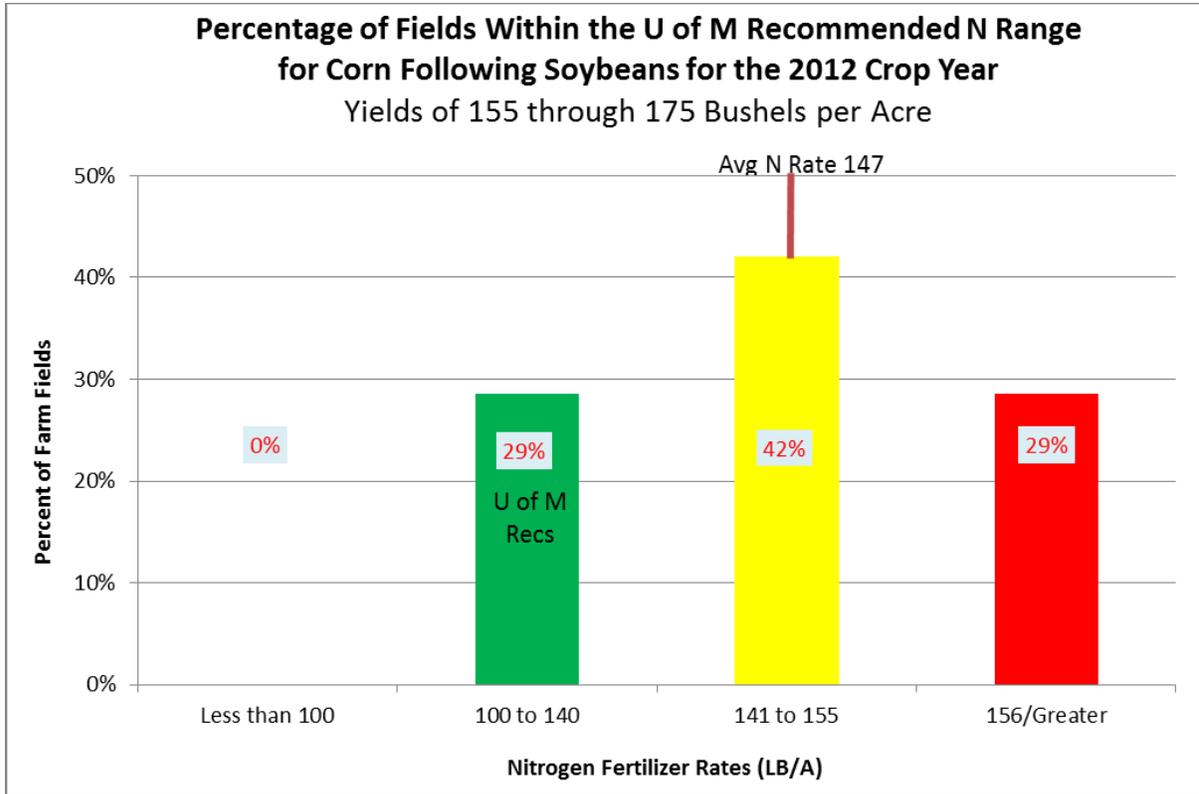


Figure 114. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the NW BMP region for 2012: 7 fields.

Table 94. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in NW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	165	165	160
Avg N Rate LB/A	No Data	131	147	164

Less than five farmers reported planting corn following soybeans in the NW BMP region for fields with yields greater than 175 bushels per acre.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

Figure 115 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 95 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 115.

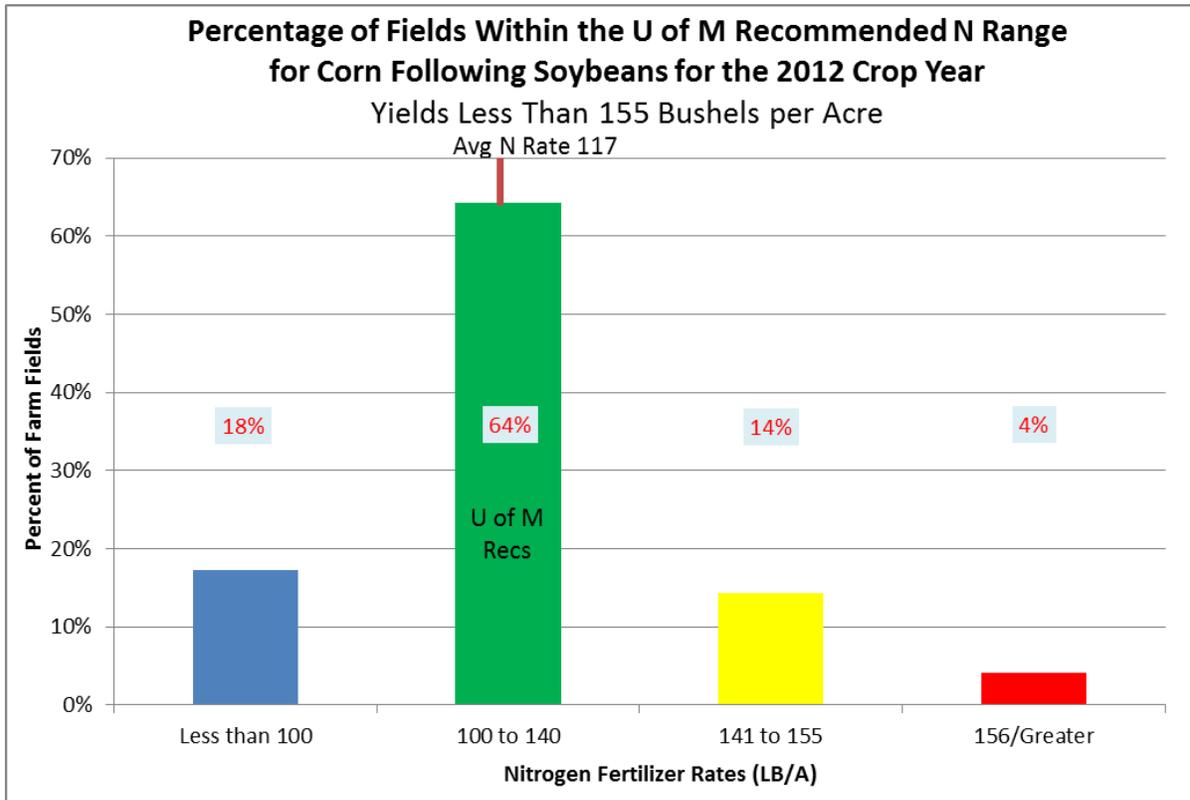


Figure 115. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the IRR BMP region for 2012: 98 fields.

Table 95. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	109	122	132	143
Avg N Rate LB/A	76	118	150	168

Figure 116 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 96 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 116.

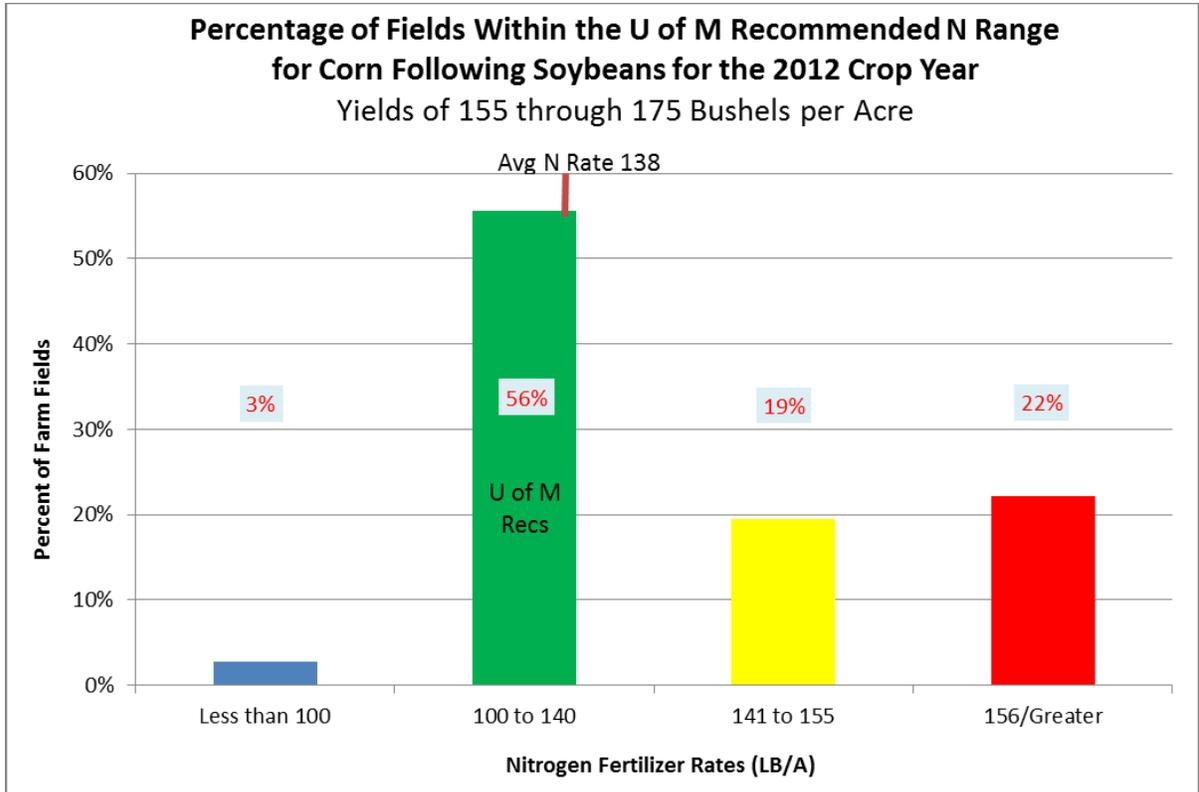


Figure 116. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 36 fields.

Table 96. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	165	164	164	166
Avg N Rate LB/A	93	125	149	168

Figure 117 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 97 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 117.

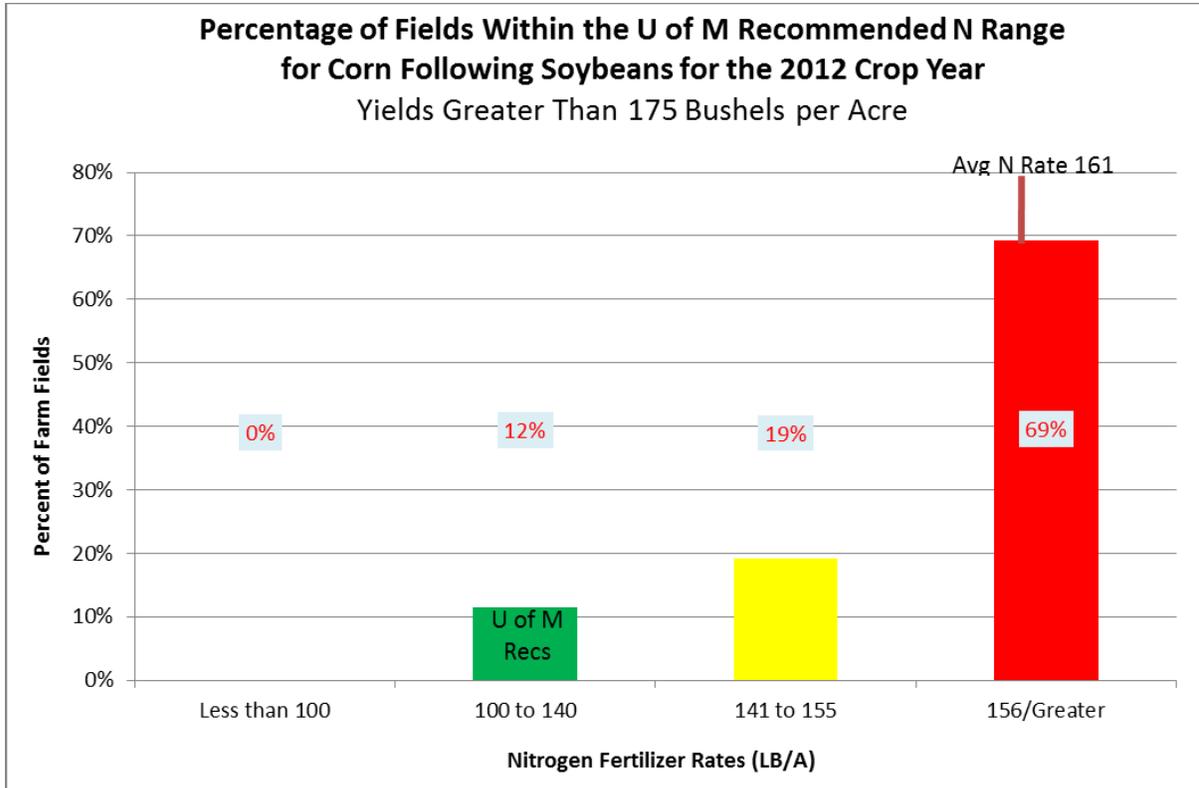


Figure 117. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the IRR BMP region for 2012: 26 fields.

Table 97. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	188	193	192
Avg N Rate LB/A	No Data	134	151	169

Statewide: Corn Following Corn

Figure 118 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 98 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 118.

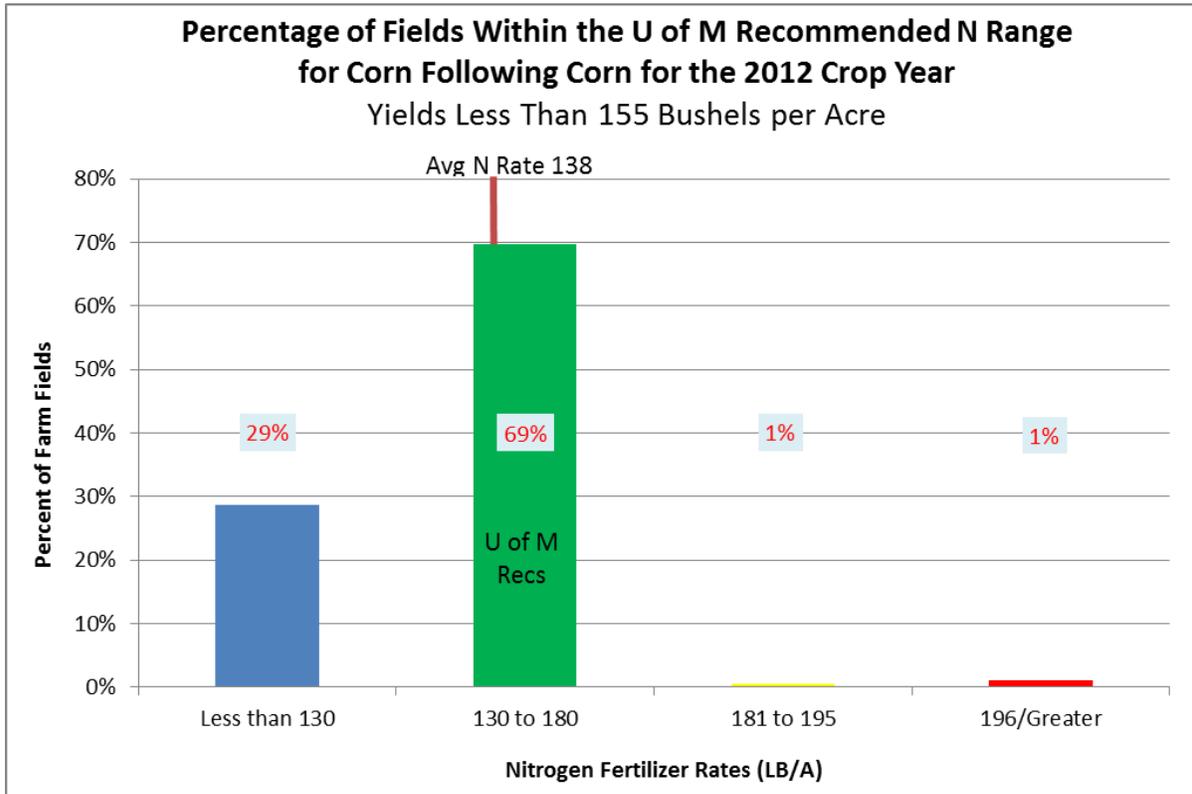


Figure 118. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in Minnesota for 2012: 188 fields.

Table 98. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	121	141	100	145
Avg N Rate LB/A	105	150	185	197

Figure 119 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 99 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 119.

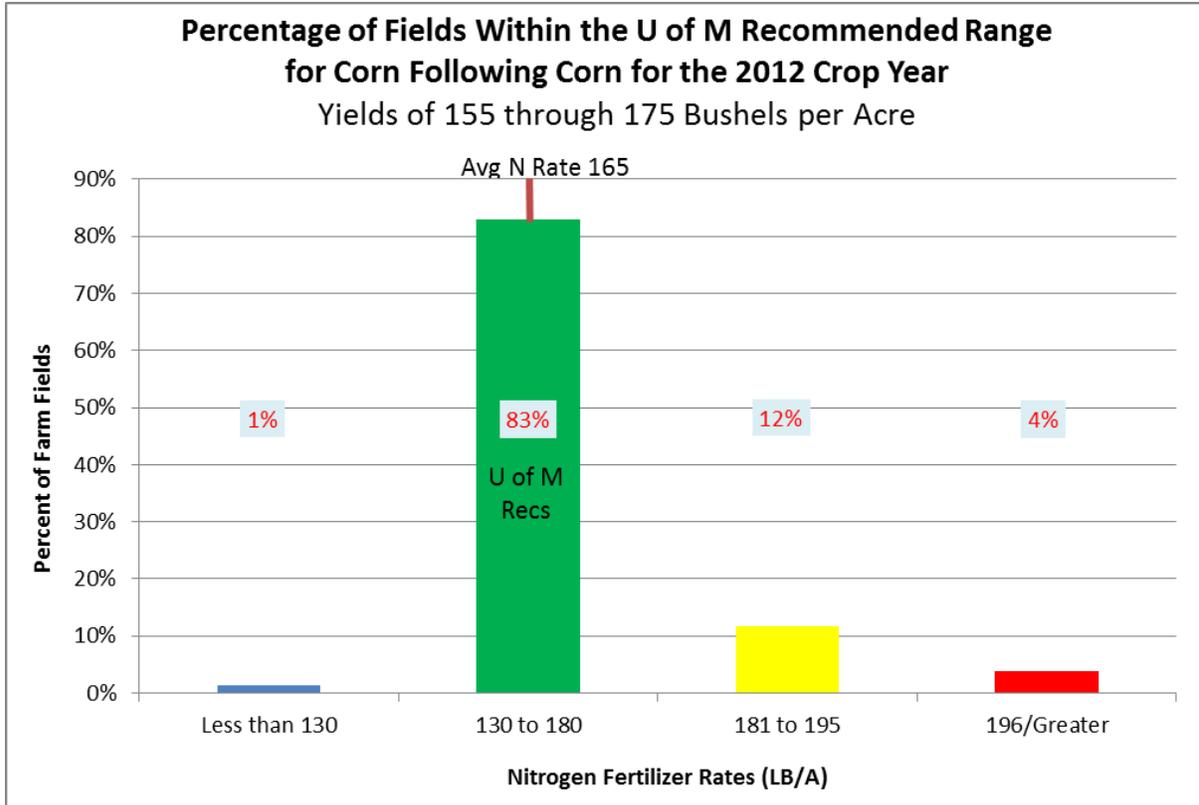


Figure 119. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in Minnesota for 2012: 206 fields.

Table 99. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	170	165	167	166
Avg N Rate LB/A	122	161	189	201

Figure 120 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 100 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 120.

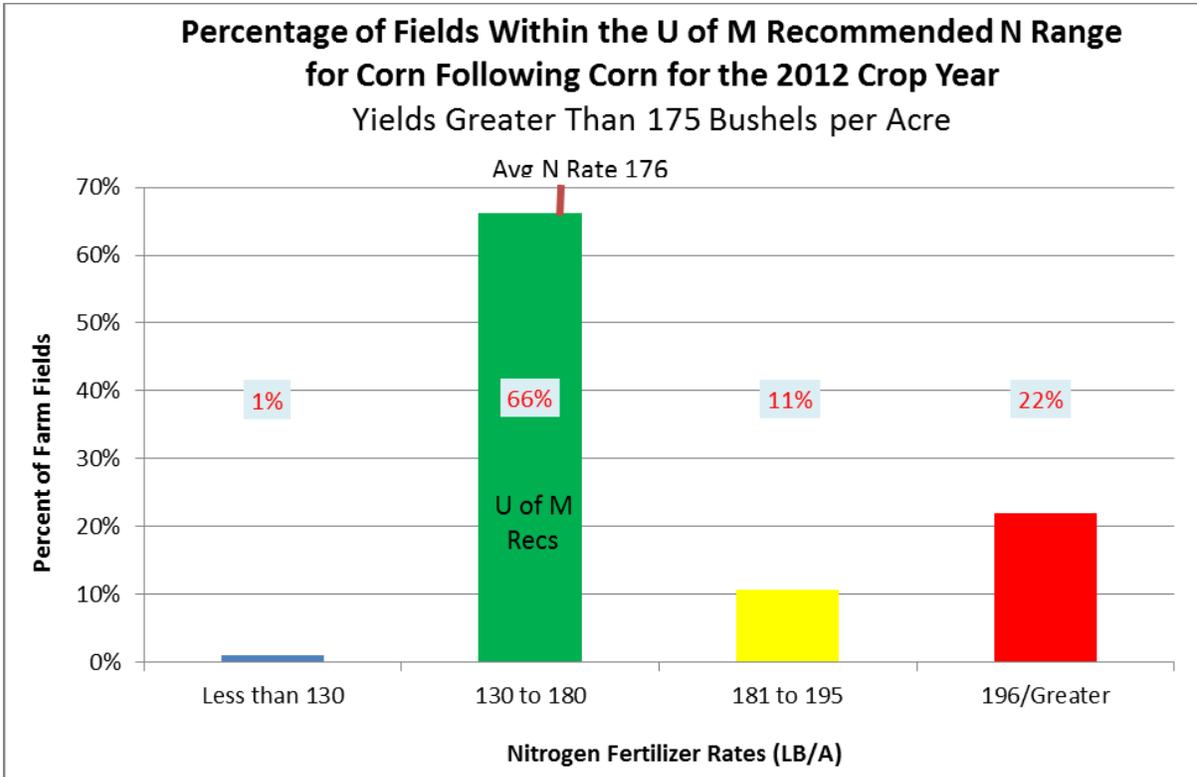


Figure 120. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in Minnesota for 2012: 195 fields.

Table 100. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	180	188	193	196
Avg N Rate LB/A	105	167	187	202

Southeastern Region: Corn Following Corn

Figure 121 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 101 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 121.

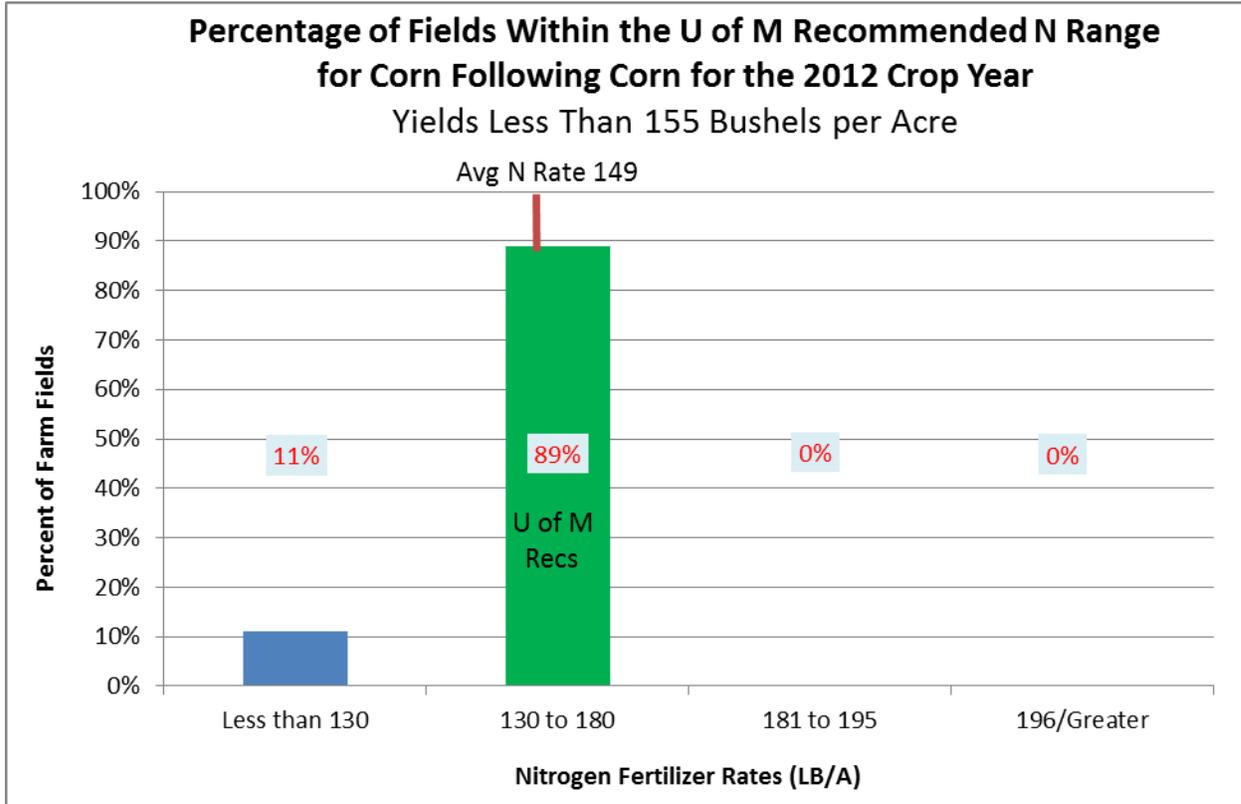


Figure 121. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SE BMP region for 2012: 9 fields.

Table 101. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	110	147	No Data	No Data
Avg N Rate LB/A	110	154	No Data	No Data

Figure 122 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 102 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 122.

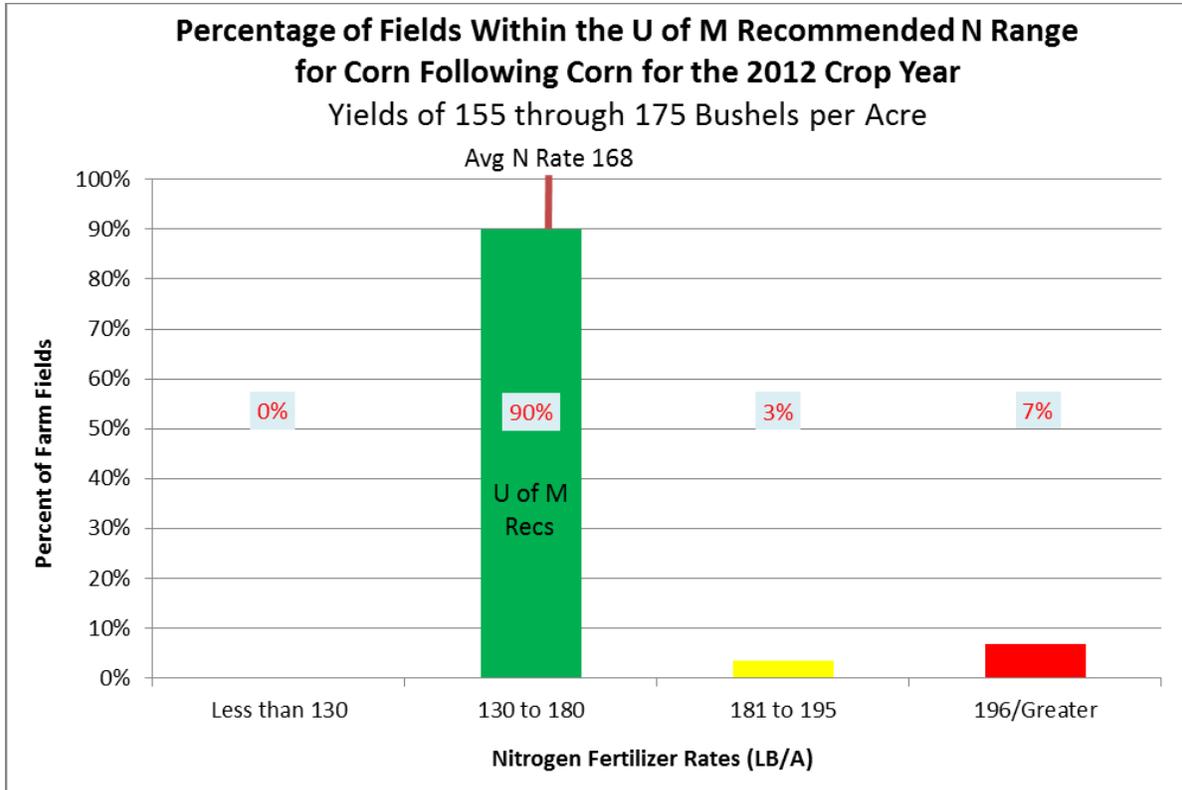


Figure 122. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 30 fields.

Table 102. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	162	175	170
Avg N Rate LB/A	No Data	165	183	200

Figure 123 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 103 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 123.

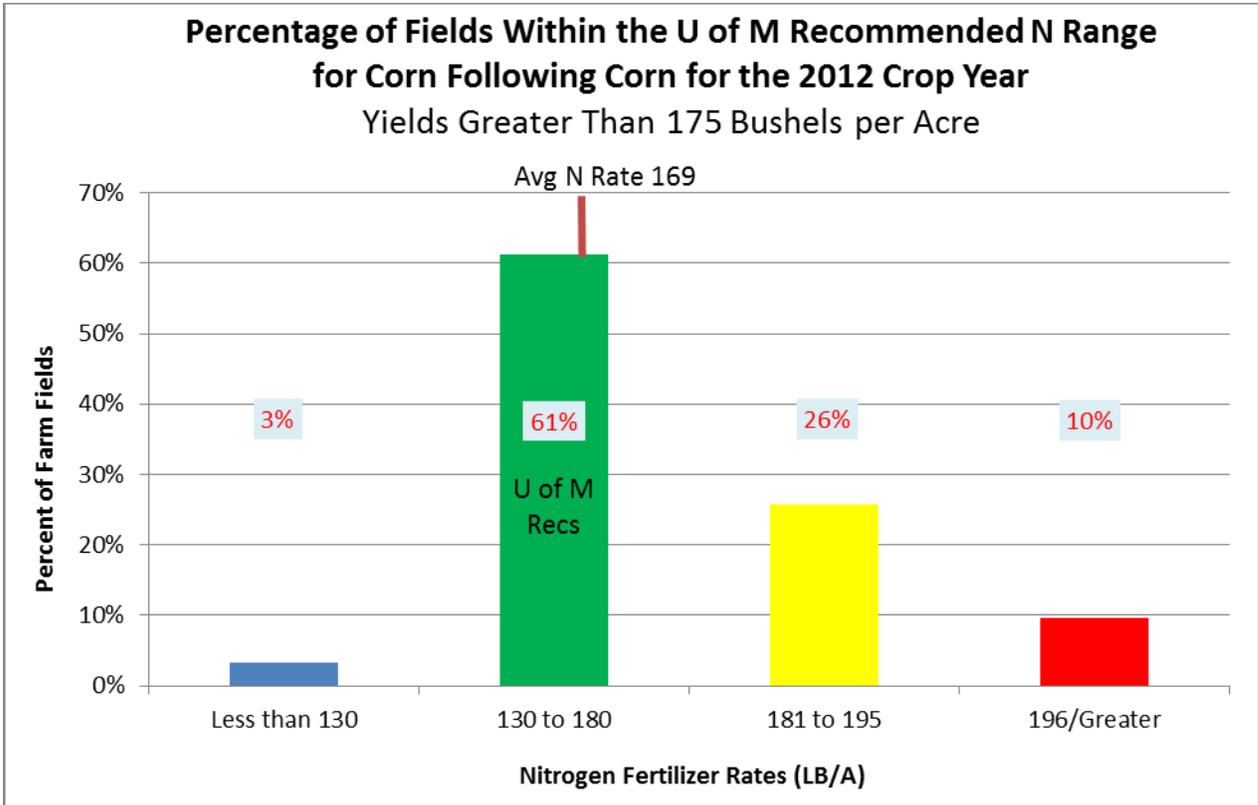


Figure 123. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SE BMP region for 2012: 31 fields.

Table 103. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	180	188	196	190
Avg N Rate LB/A	100	161	186	199

South Central Region: Corn Following Corn

Figure 124 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 104 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 124.

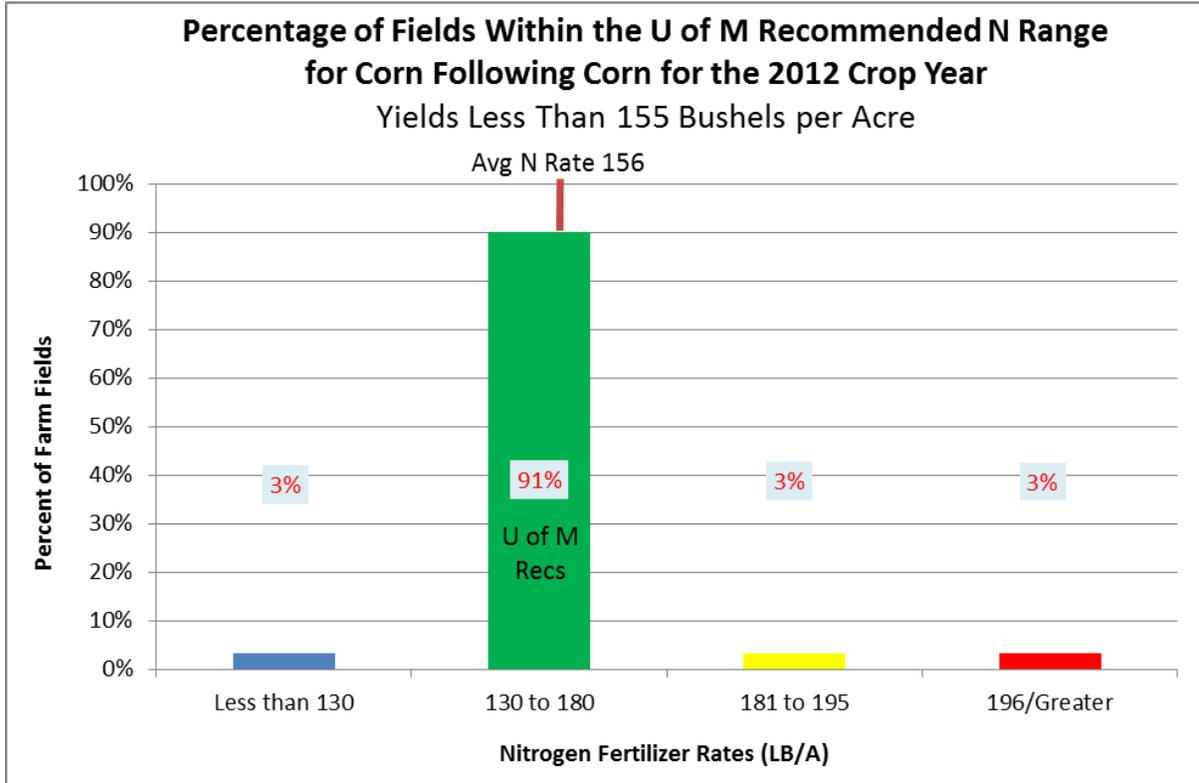


Figure 124. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SC BMP region for 2012: 30 fields.

Table 104. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	149	100	150
Avg N Rate LB/A	124	155	185	197

Figure 125 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn with yields of 155 through 175 bushels using a “nitrogen to corn price ratio” of 0.05. Table 105 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 125.

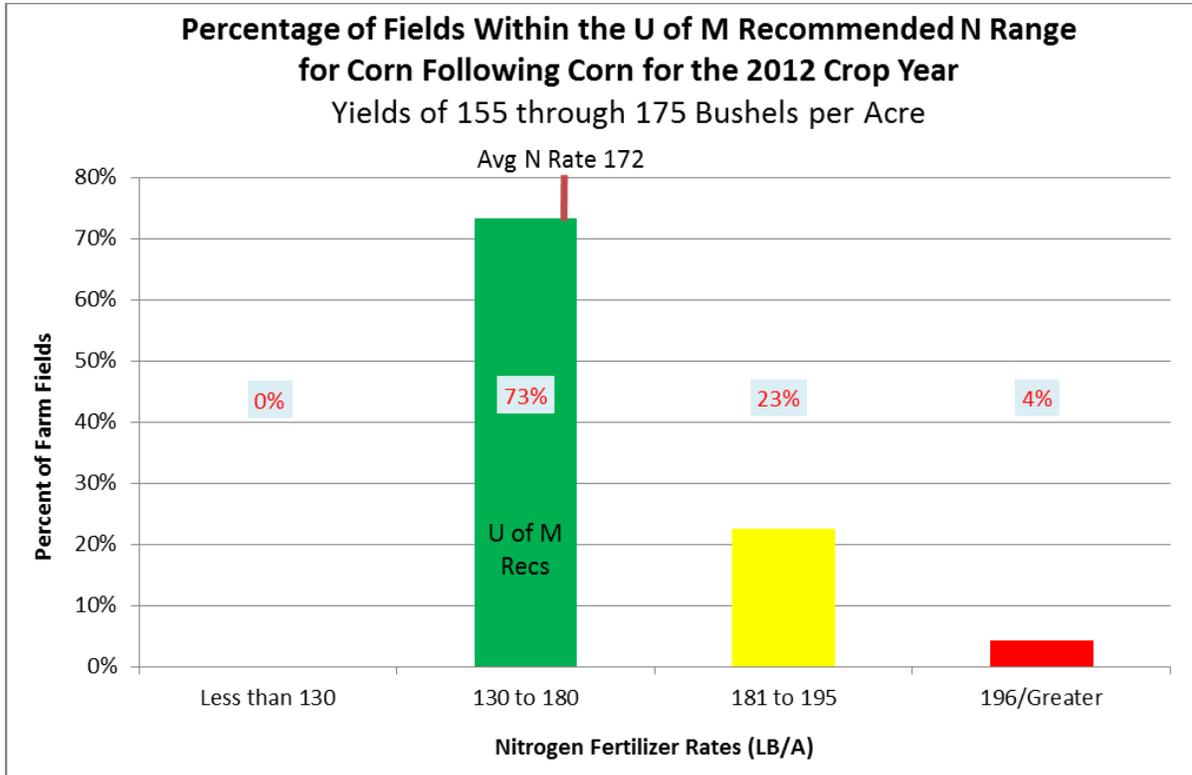


Figure 125. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 71 fields.

Table 105. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	168	167	168
Avg N Rate LB/A	No Data	165	190	202

Figure 126 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 106 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 126.

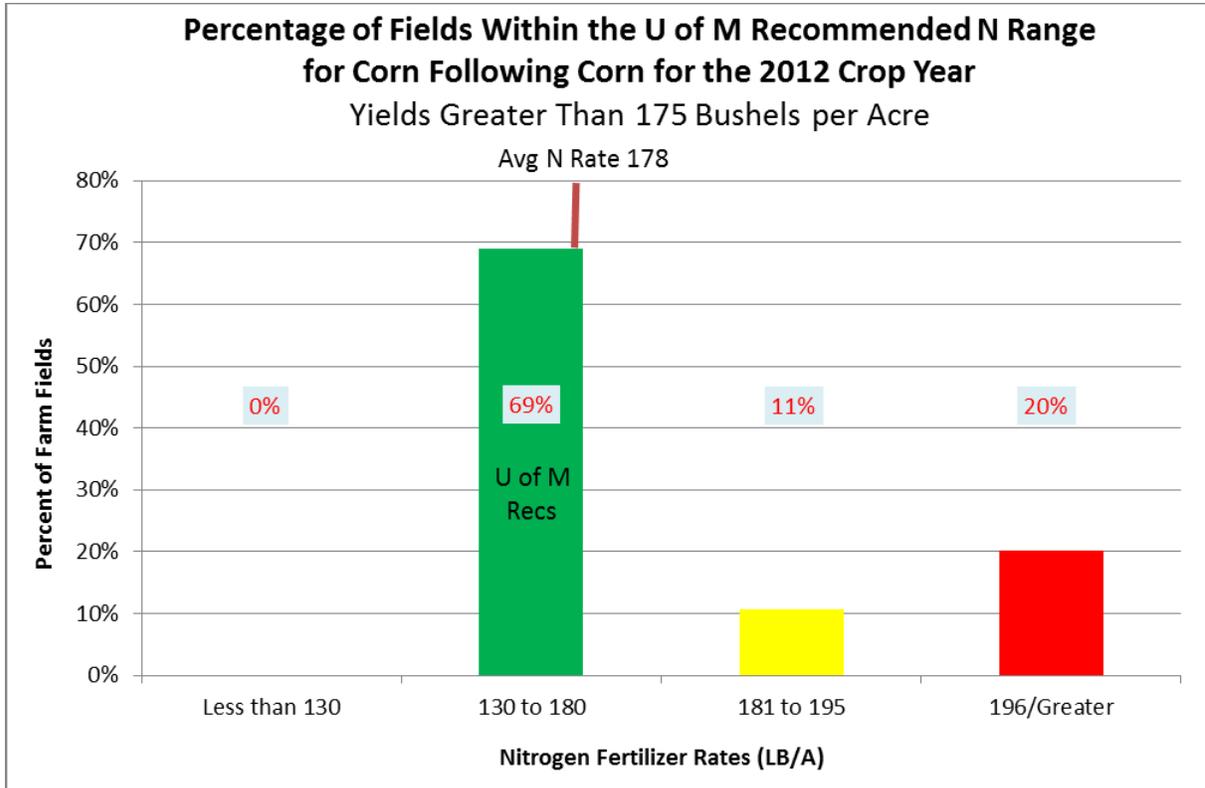


Figure 126. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SC BMP region for 2012: 84 fields.

Table 106. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	192	190	192
Avg N Rate LB/A	No Data	169	188	203

Southwestern and West Central Region: Corn Following Corn

Figure 127 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 107 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 127.

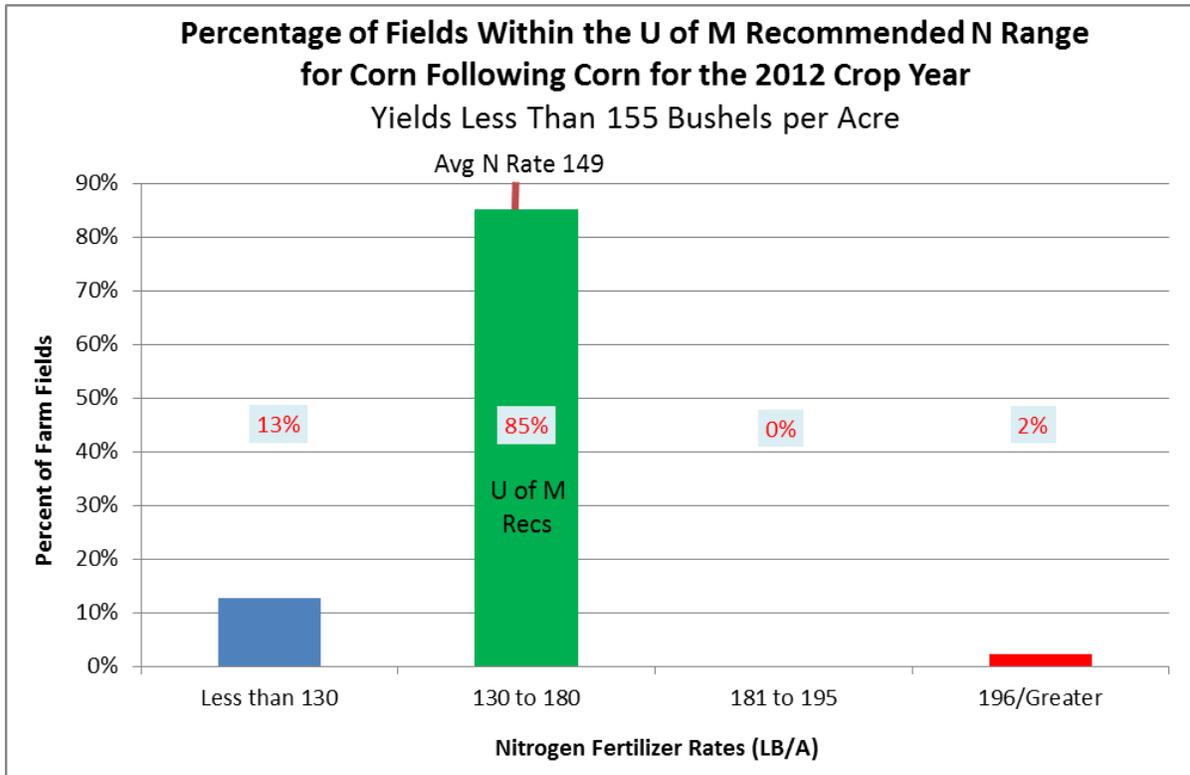


Figure 127. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SW BMP region for 2012: 47 fields.

Table 107. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	140	143	No Data	140
Avg N Rate LB/A	118	152	No Data	197

Figure 128 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 108 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 128.

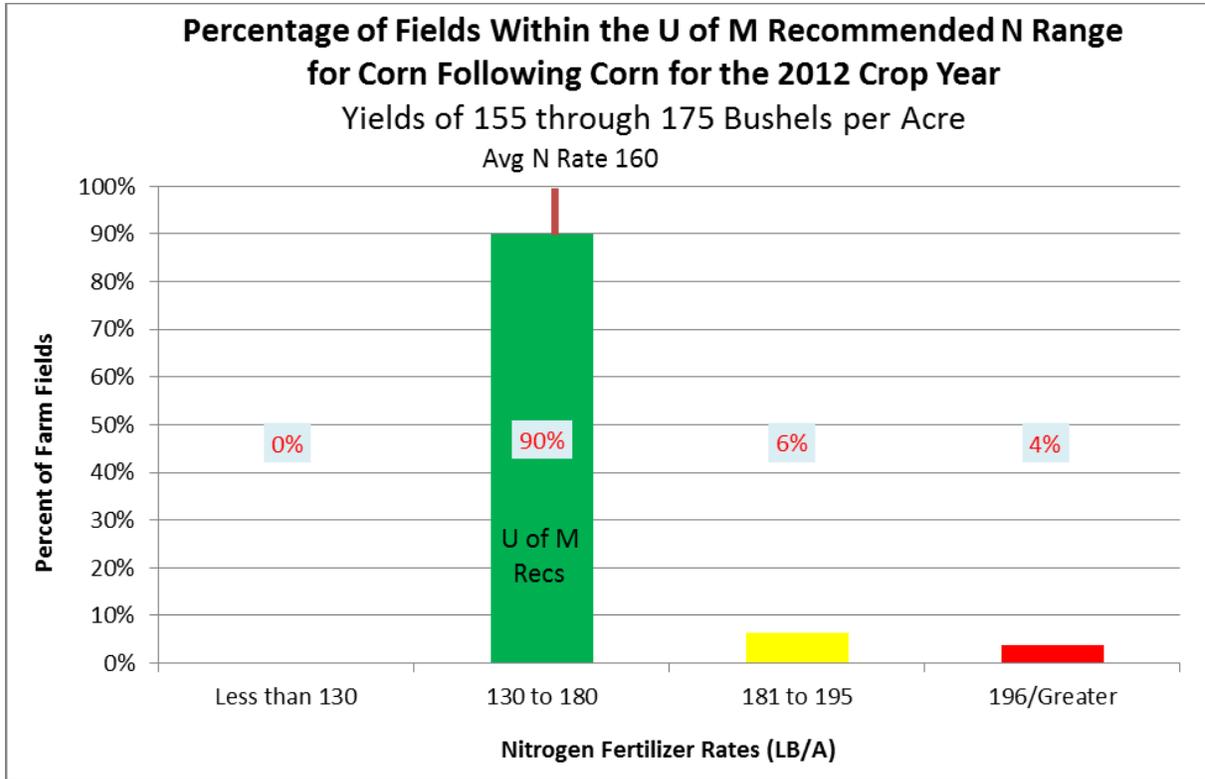


Figure 128. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 79 fields.

Table 108. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	165	163	162
Avg N Rate LB/A	No Data	157	187	200

Figure 129 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 109 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 129.

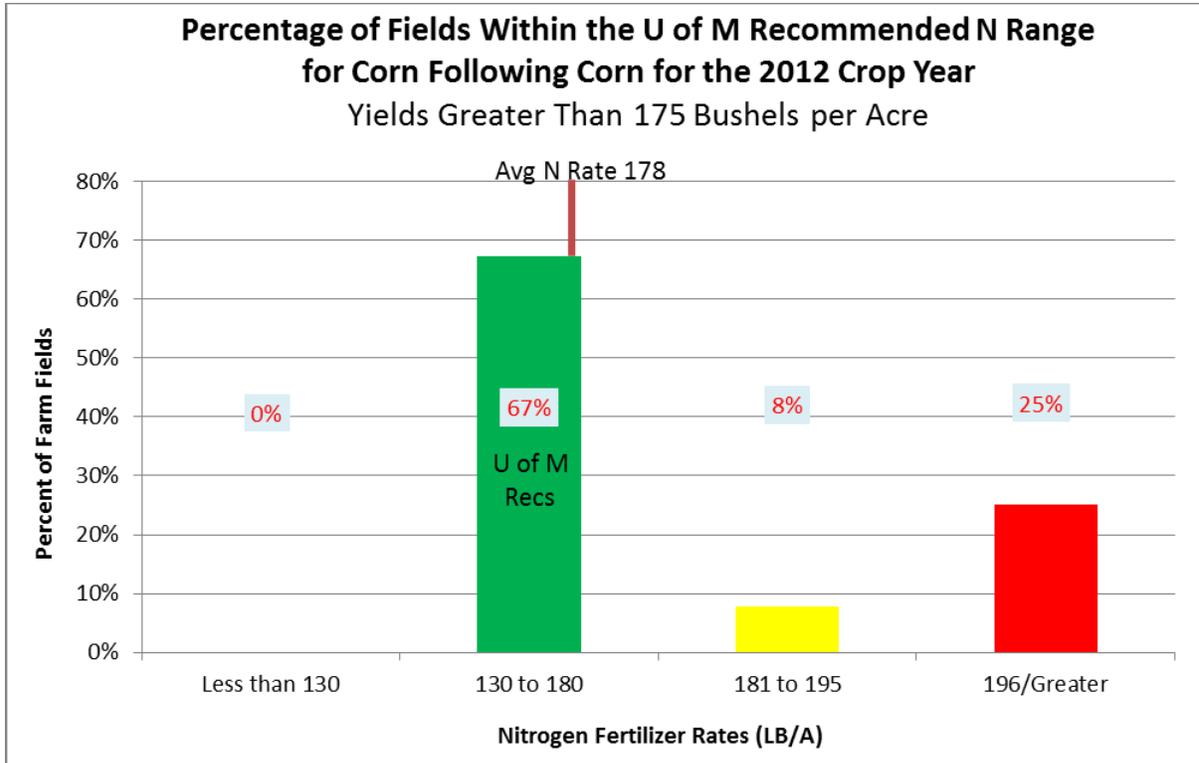


Figure 129. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SW BMP region for 2012: 52 fields.

Table 109. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	184	197	202
Avg N Rate LB/A	No Data	169	189	200

Northwestern Region: Corn Following Corn

Figure 130 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 110 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 130.

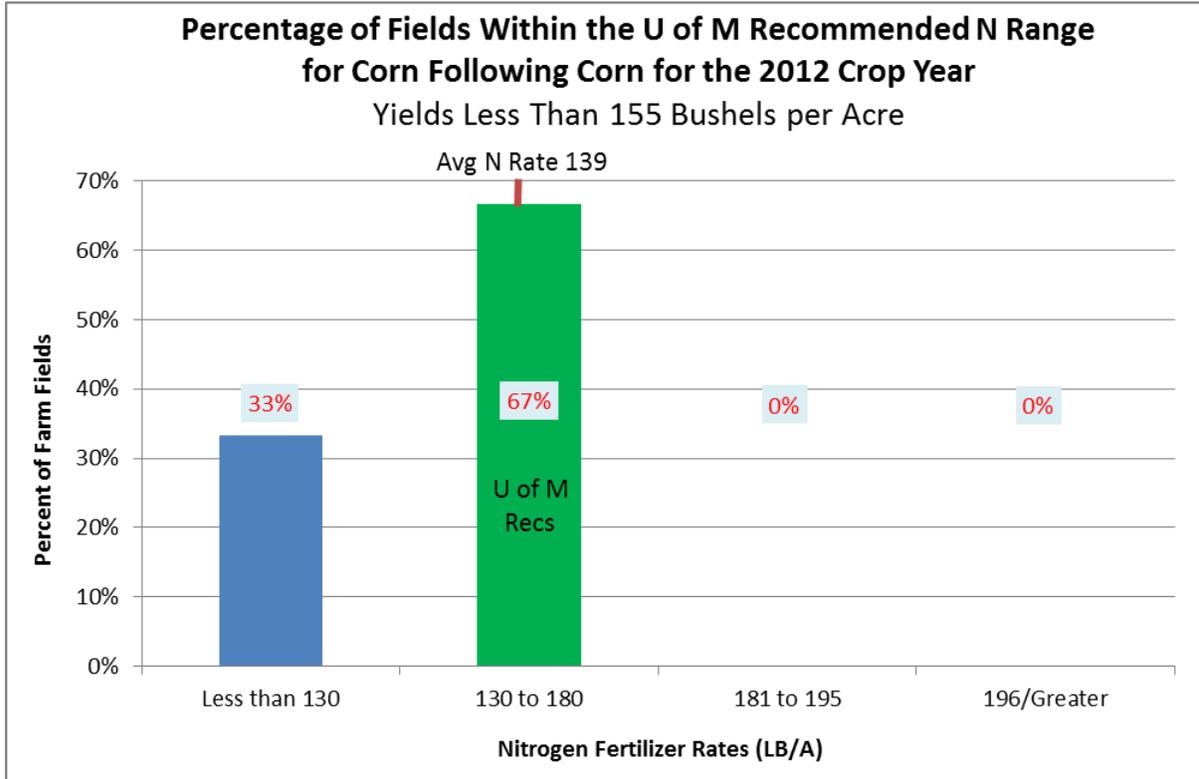


Figure 130. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the NW BMP region for 2012: 18 fields.

Table 110. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	112	141	No Data	No Data
Avg N Rate LB/A	107	155	No Data	No Data

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region for fields:

- With yields of 155 through 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Figure 131 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 111 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 131.

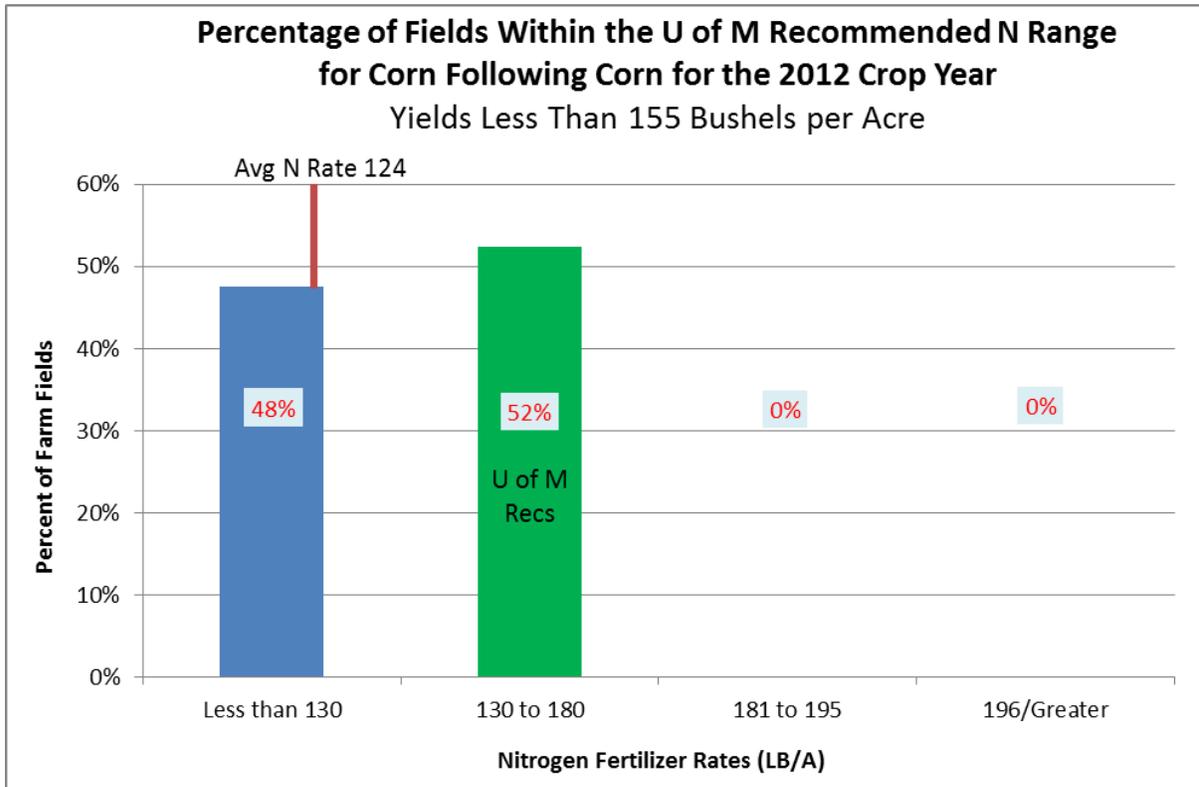


Figure 131. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the IRR BMP region for 2012: 84 fields.

Table 111. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	118	133	No Data	No Data
Avg N Rate LB/A	102	144	No Data	No Data

Figure 132 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 112 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 132.

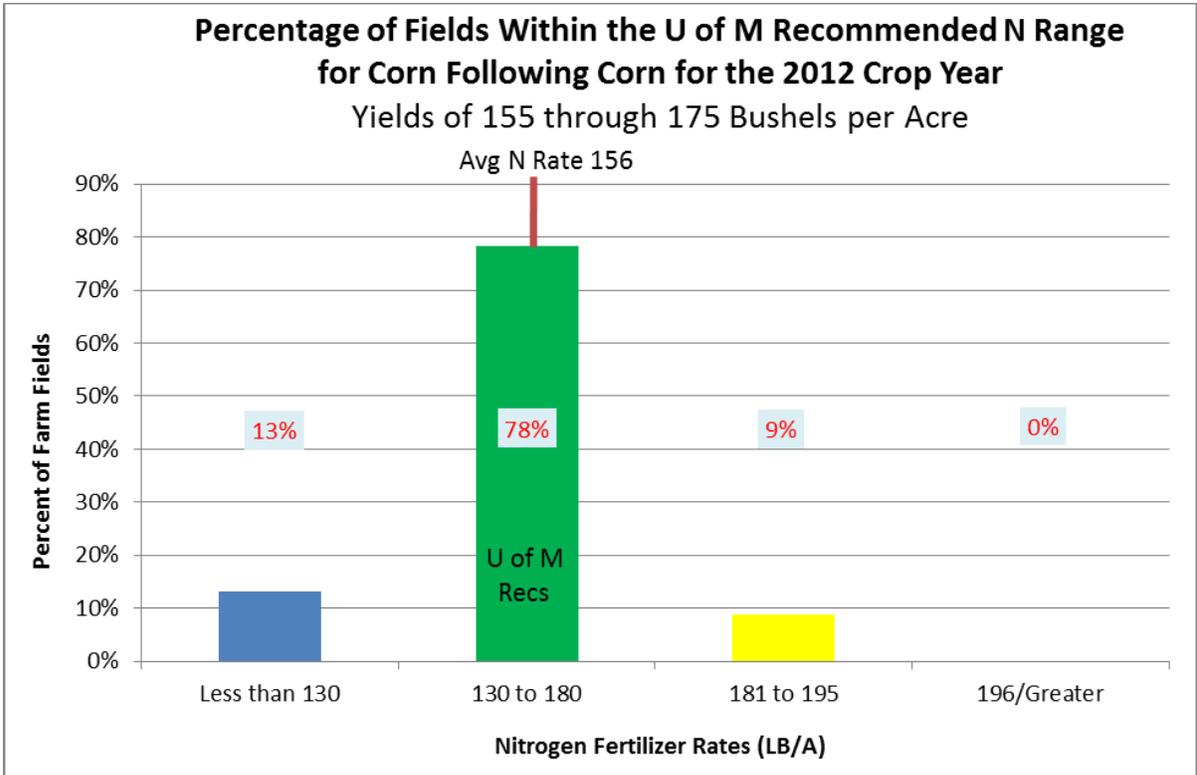


Figure 132. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 23 fields.

Table 112. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	170	161	173	No Data
Avg N Rate LB/A	122	158	189	No Data

Figure 133 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 113 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 133.

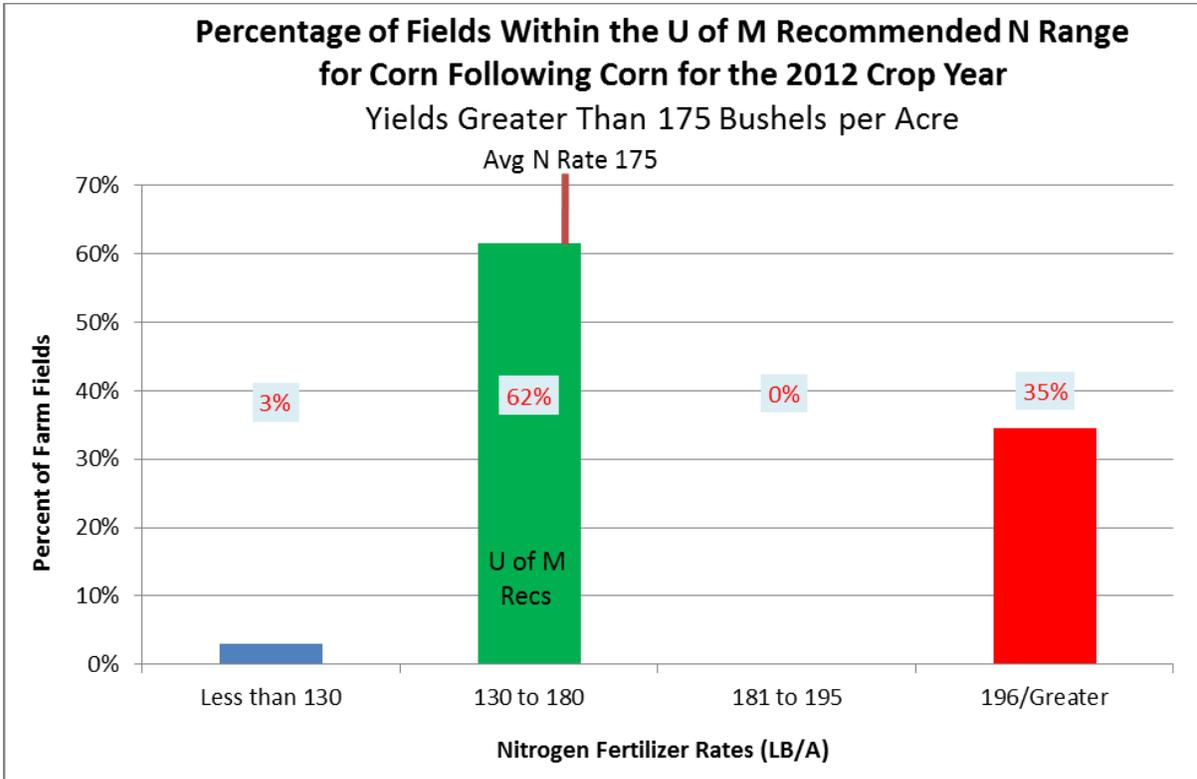


Figure 133. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the IRR BMP region for 2012: 26 fields.

Table 113. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	180	182	No Data	198
Avg N Rate LB/A	110	164	No Data	201

Statewide: Corn Following Corn Following Alfalfa

Figure 134 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 114 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 134.

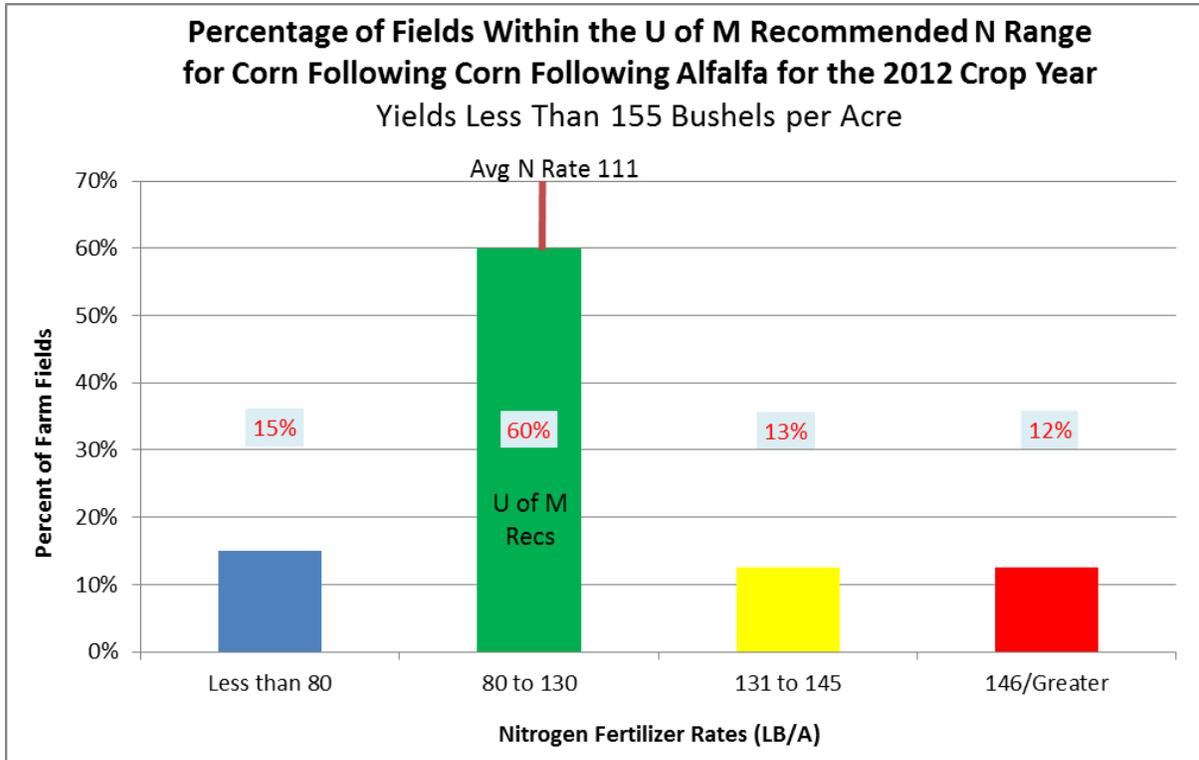


Figure 134. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2012: 40 fields.

Table 114. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	114	123	142	146
Avg N Rate LB/A	48	110	140	159

Figure 135 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 115 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 115.

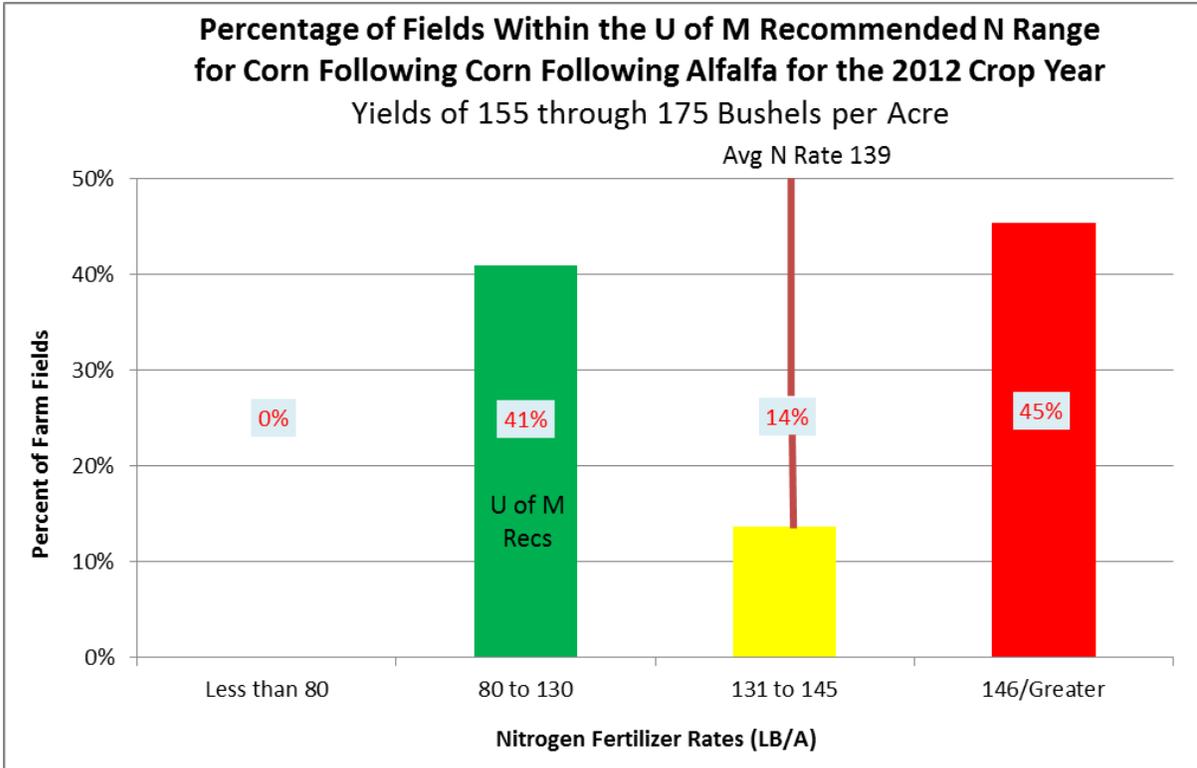


Figure 135. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2012: 22 fields.

Table 115. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	166	168	166
Avg N Rate LB/A	No Data	116	136	159

Figure 136 details the distribution of nitrogen fertilizer rates in Minnesota for corn following corn following alfalfa with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 116 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 136.

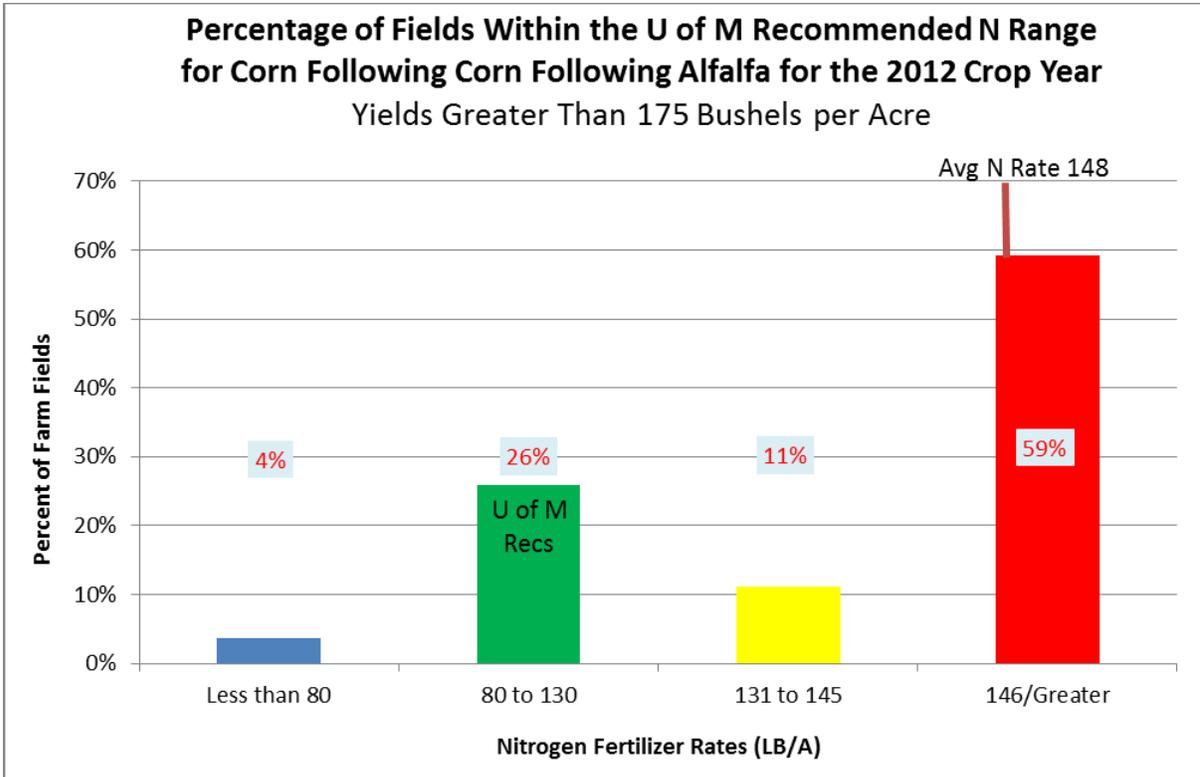


Figure 136. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2012: 27 fields.

Table 116. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	185	184	210	194
Avg N Rate LB/A	40	124	137	167

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 137 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 117 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 137.

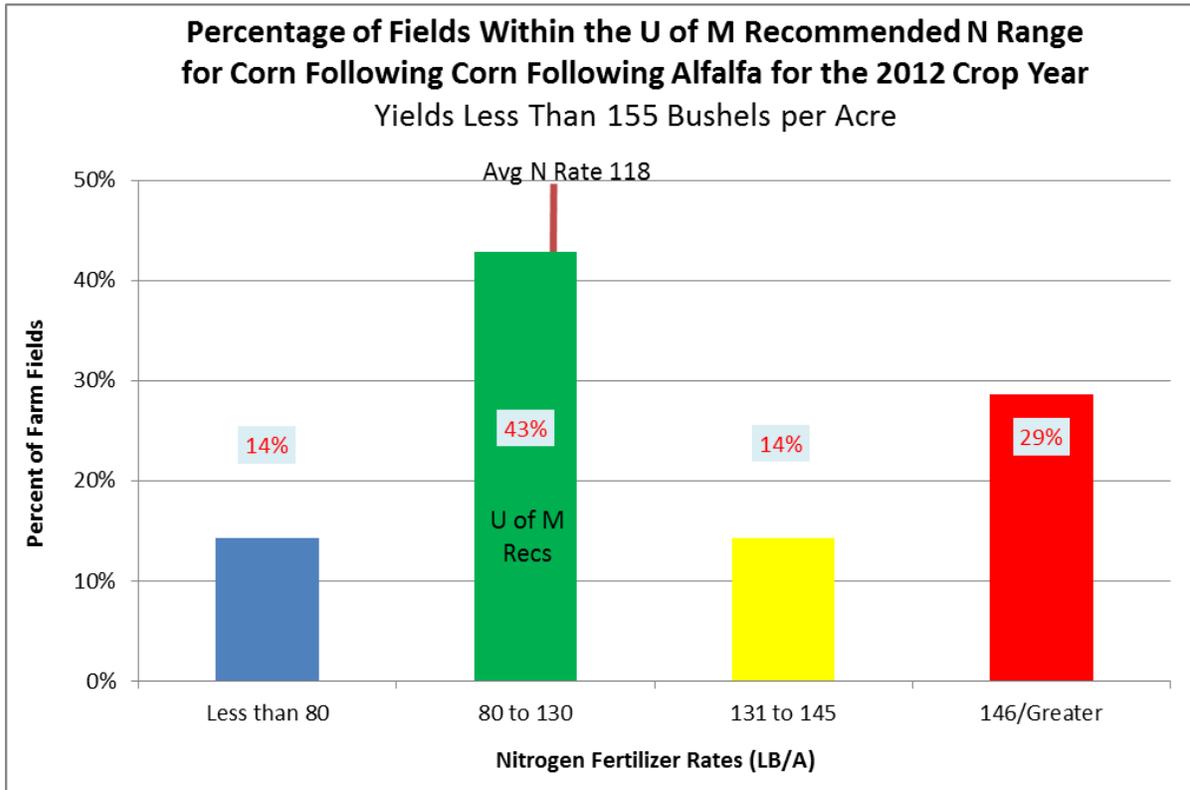


Figure 137. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SE BMP region for 2012: 7 fields.

Table 117. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	130	131	140	150
Avg N Rate LB/A	74	103	140	153

Figure 138 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 118 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 138.

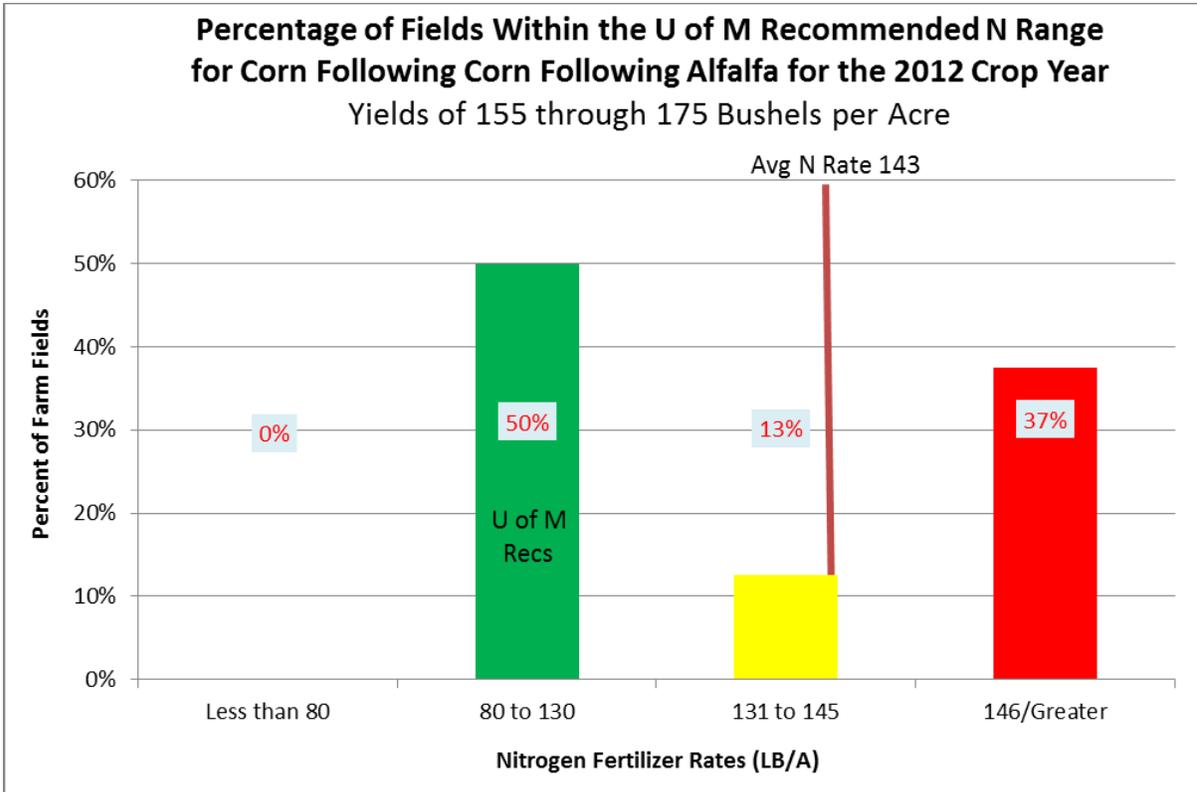


Figure 138. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 8 fields.

Table 118. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	165	175	165
Avg N Rate LB/A	No Data	124	135	172

Figure 139 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following corn following alfalfa with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 119 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 139.

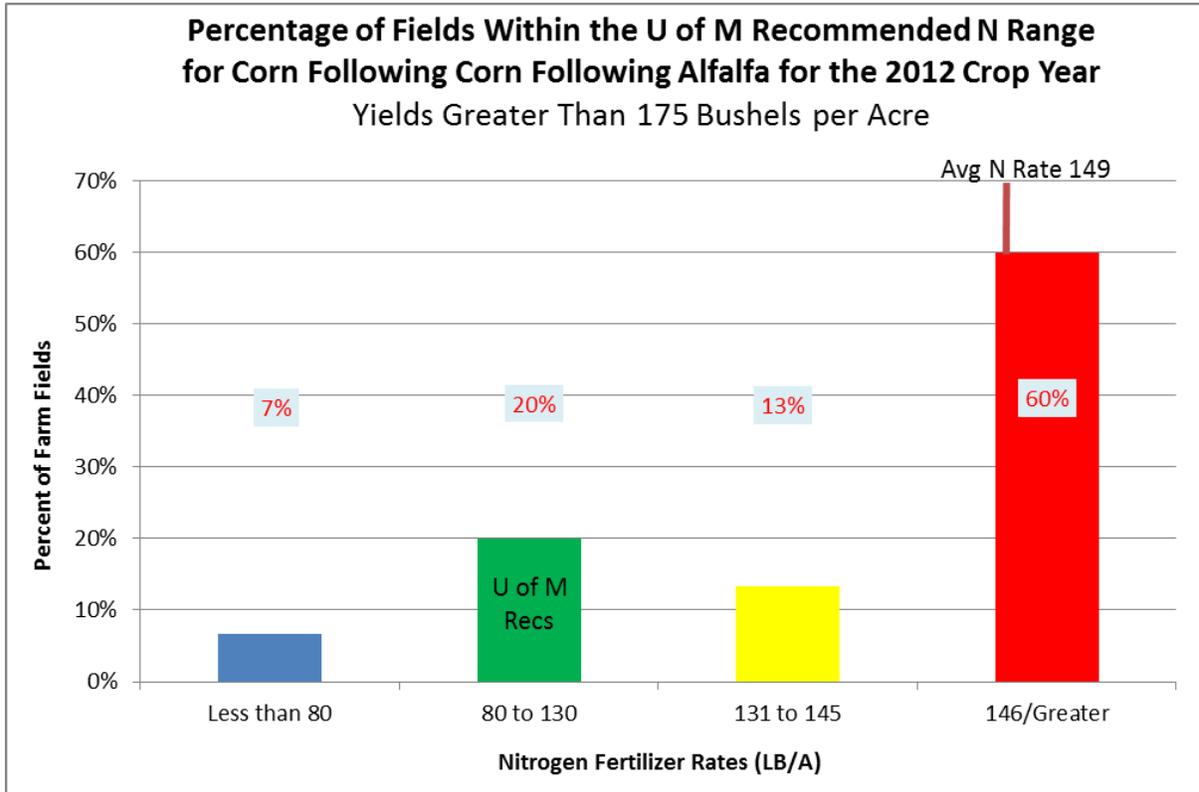


Figure 139. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SE BMP region for 2012: 15 fields.

Table 119. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	185	182	220	196
Avg N Rate LB/A	40	124	138	172

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region for fields with yields less than 155 bushels per acre.

Figure 140 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 120 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 140.

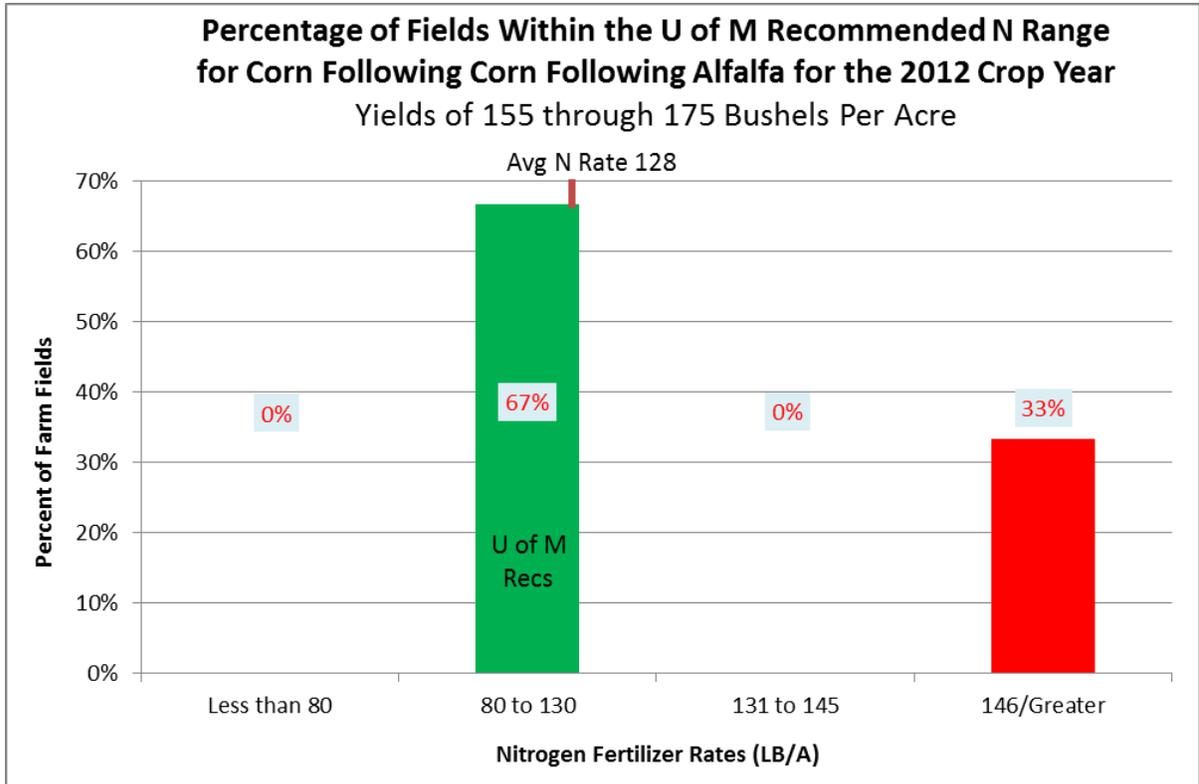


Figure 140. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SC BMP region for 2012: 6 fields.

Table 120. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SC BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	166	No Data	165
Avg N Rate LB/A	No Data	115	No Data	154

Figure 141 details the distribution of nitrogen fertilizer rates in the SC BMP region for corn following corn following alfalfa with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 121 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 141.

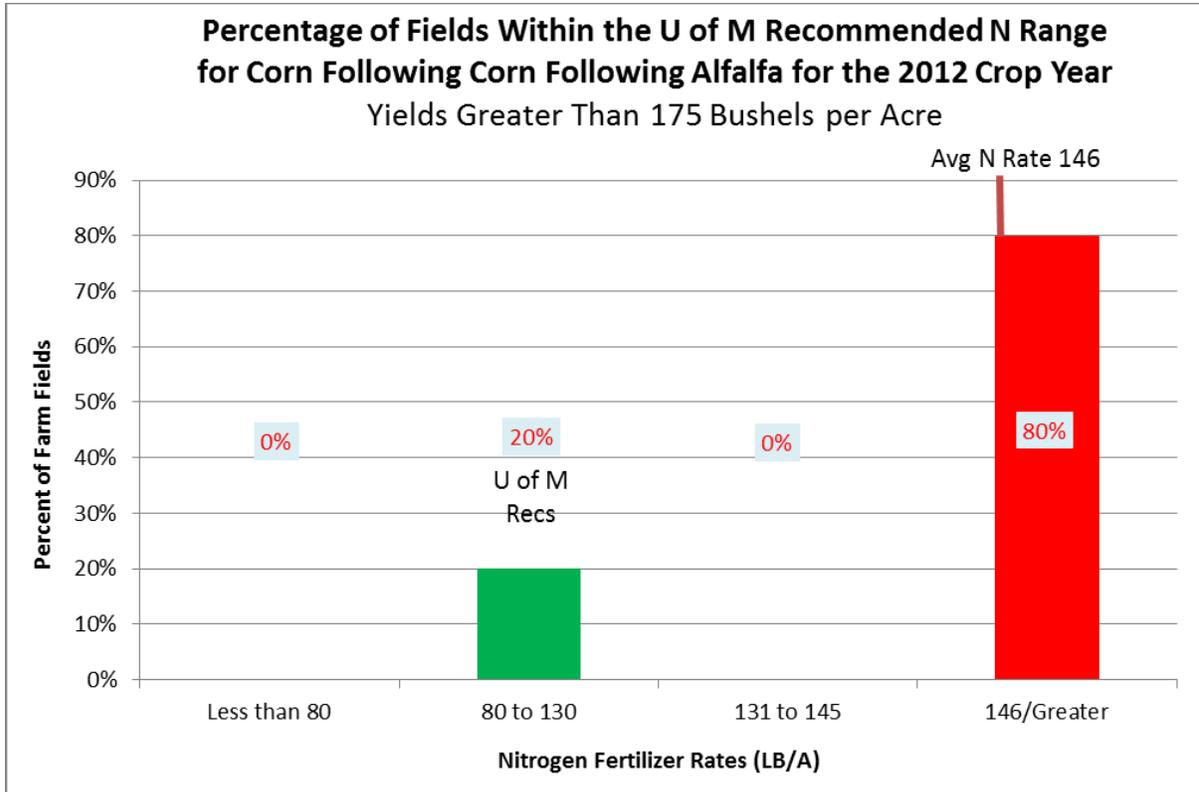


Figure 141. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SC BMP region for 2012: 5 fields.

Table 121. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	180	No Data	190
Avg N Rate LB/A	No Data	115	No Data	154

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Figure 142 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 122 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 142.

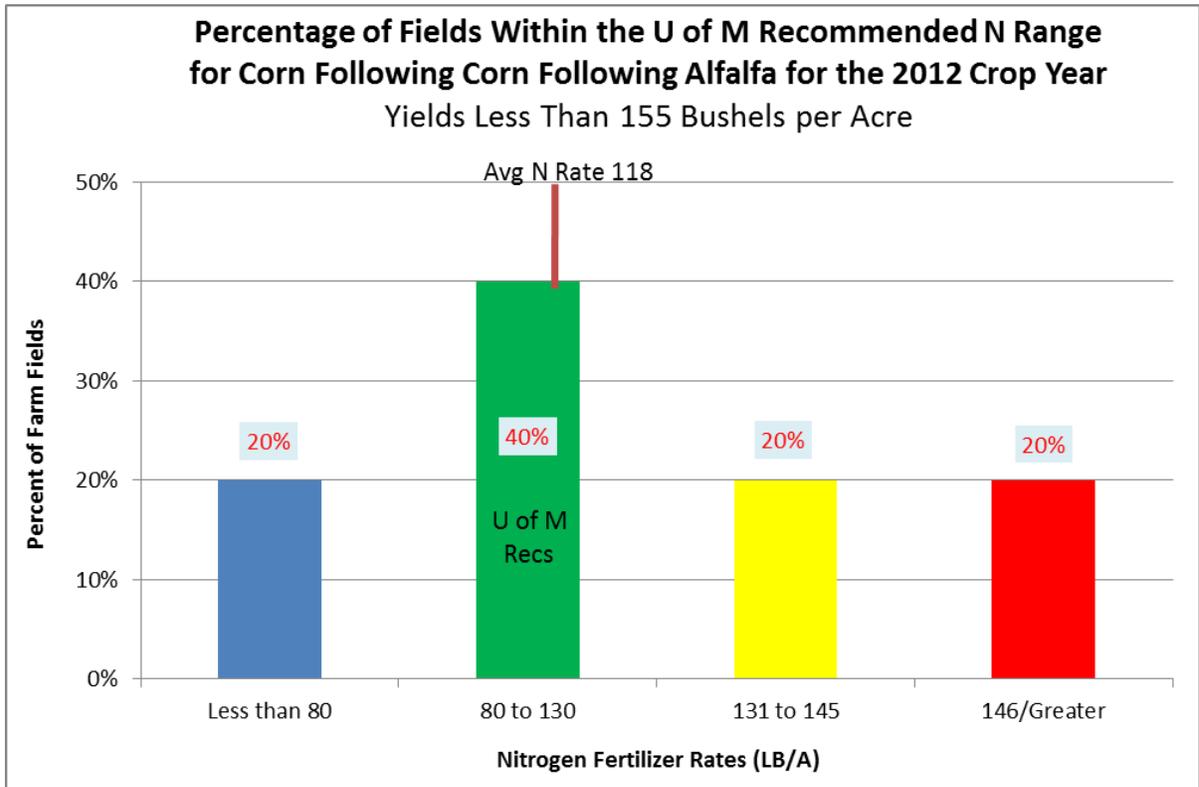


Figure 142. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SW BMP region for 2012: 5 fields.

Table 122. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	150	135	140	140
Avg N Rate LB/A	61	120	140	150

Figure 143 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 123 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 143.

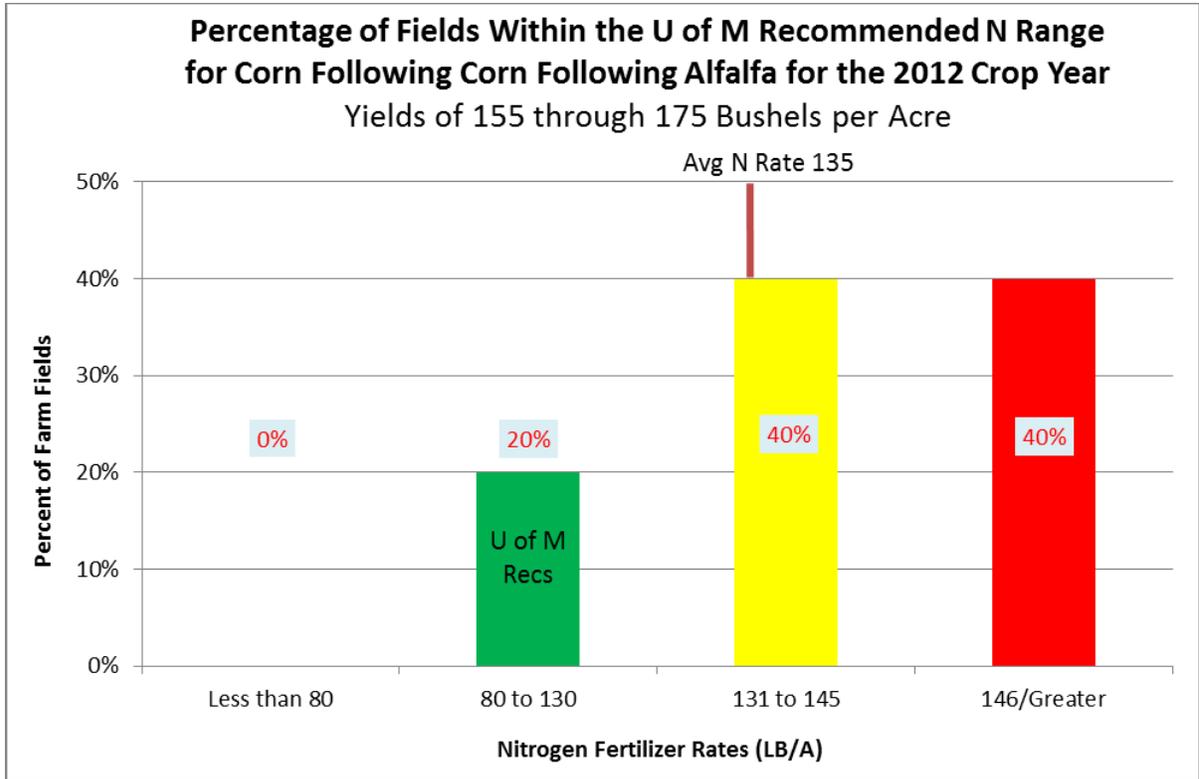


Figure 143. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SW BMP region for 2012: 5 fields.

Table 123. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SW BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	170	165	168
Avg N Rate LB/A	No Data	92	136	155

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region for fields with yields greater than 175 bushels per acre.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region for fields:

- With yields less than 155 bushels per acre.
- With yields of 155 through 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Figure 144 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 124 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 144.

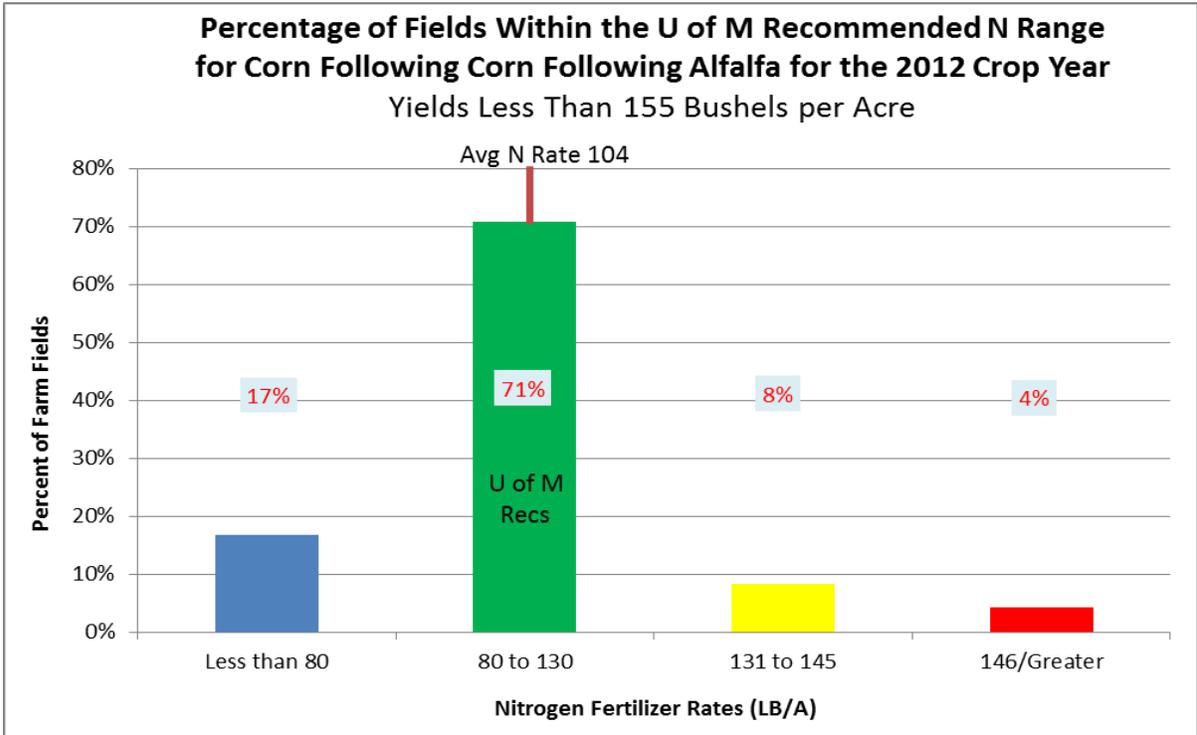


Figure 144. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2012: 24 fields.

Table 124. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	102	119	140	150
Avg N Rate LB/A	39	110	140	186

Less than five farmers reported planting corn following corn following alfalfa in the IRR BMP region for fields:

- With yields of 155 through 175 bushels per acre.
- With yields greater than 175 bushels per acre

Statewide: Corn Following Alfalfa

Figure 145 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 125 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 145.

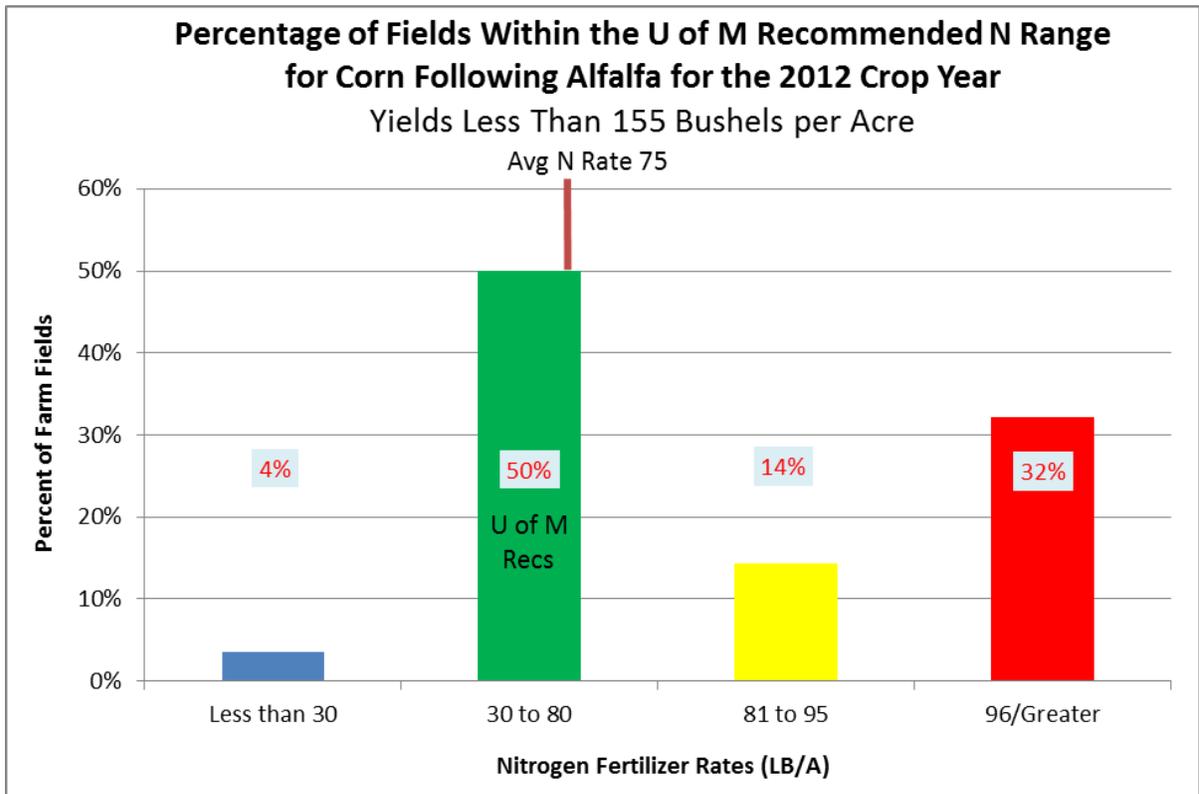


Figure 145. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2012: 28 fields.

Table 125. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	136	133	125
Avg N Rate LB/A	15	47	90	120

Figure 146 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 126 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 146.

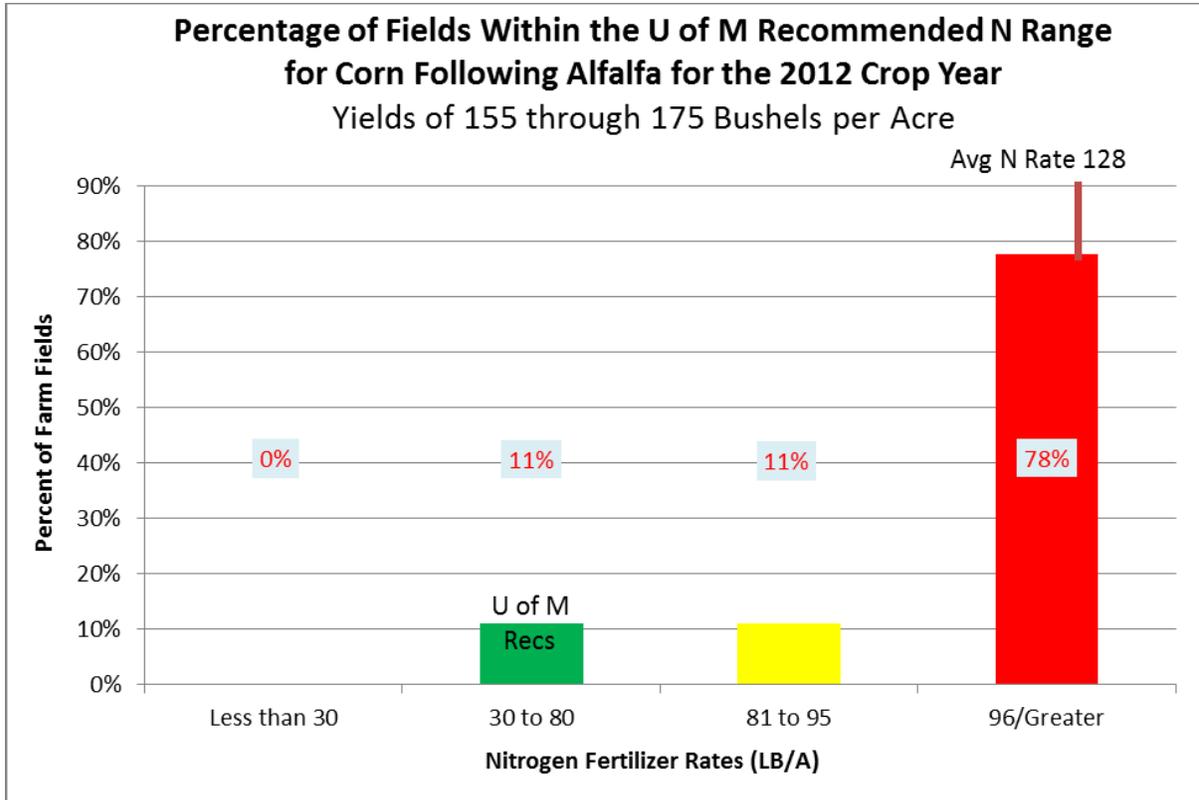


Figure 146. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2012: 18 fields.

Table 126. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	168	163	171
Avg N Rate LB/A	No Data	78	88	141

Figure 147 details the distribution of nitrogen fertilizer rates in Minnesota for corn following alfalfa with yields greater than 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 127 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 147.

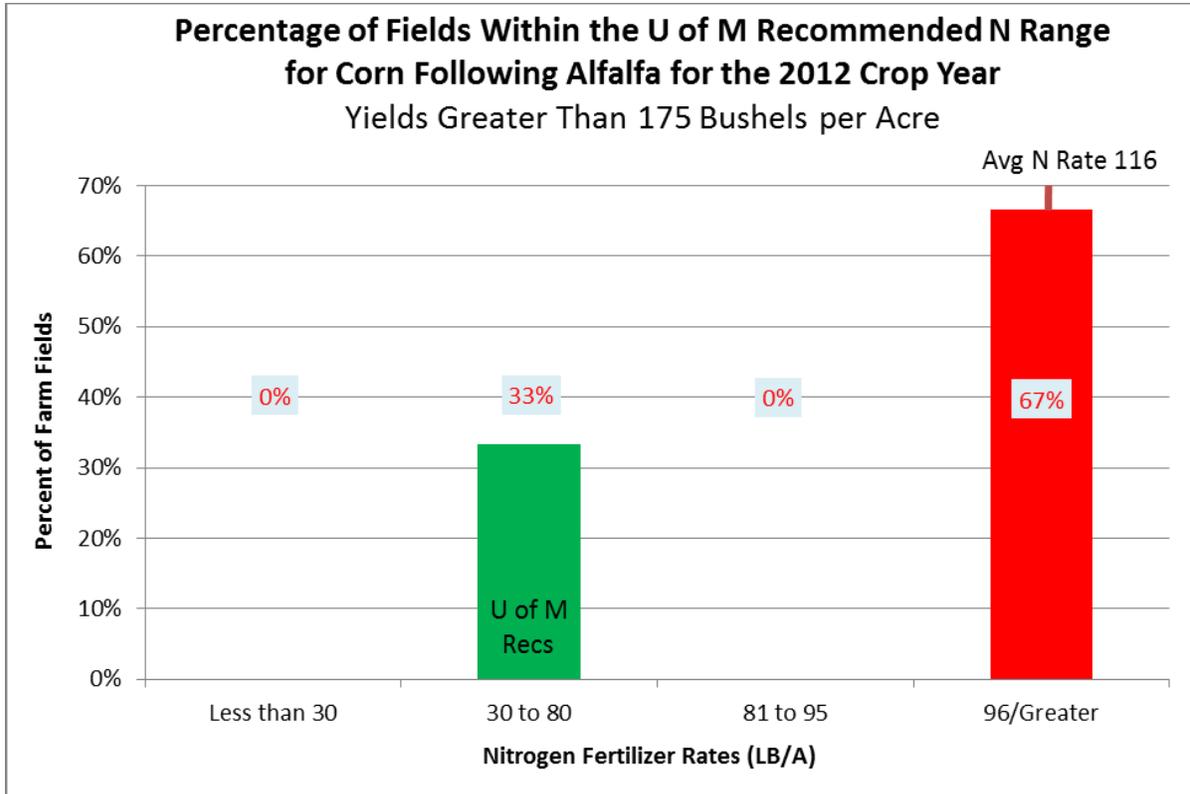


Figure 147. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2012: 6 fields.

Table 127. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	179	No Data	194
Avg N Rate LB/A	No Data	54	No Data	147

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region for fields with yields less than 155 bushels per acre.

Figure 148 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 128 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 148.

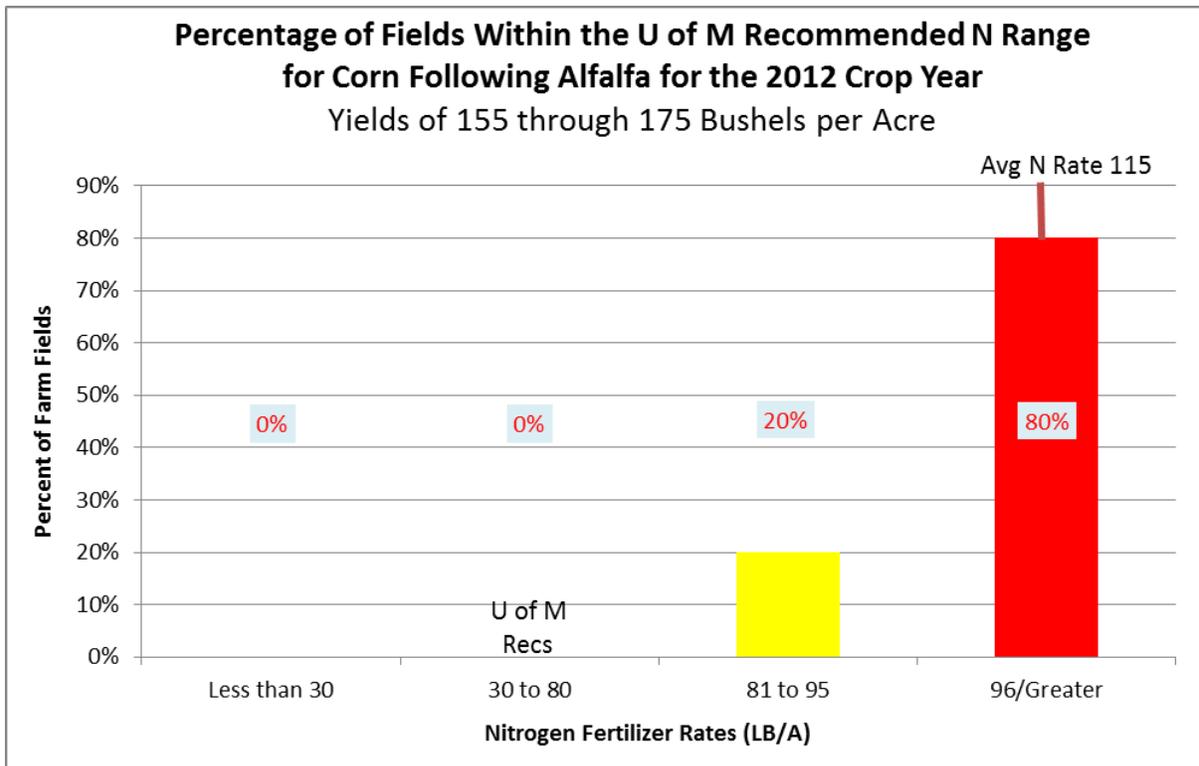


Figure 148. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2012: 5 fields.

Table 128. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	170	174
Avg N Rate LB/A	No Data	No Data	86	123

Less than five farmers reported planting corn following alfalfa in the SE BMP region for fields with yields greater than 175 bushels per acre.

South Central Region: Corn Following Alfalfa

Figure 149 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 129 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 149.

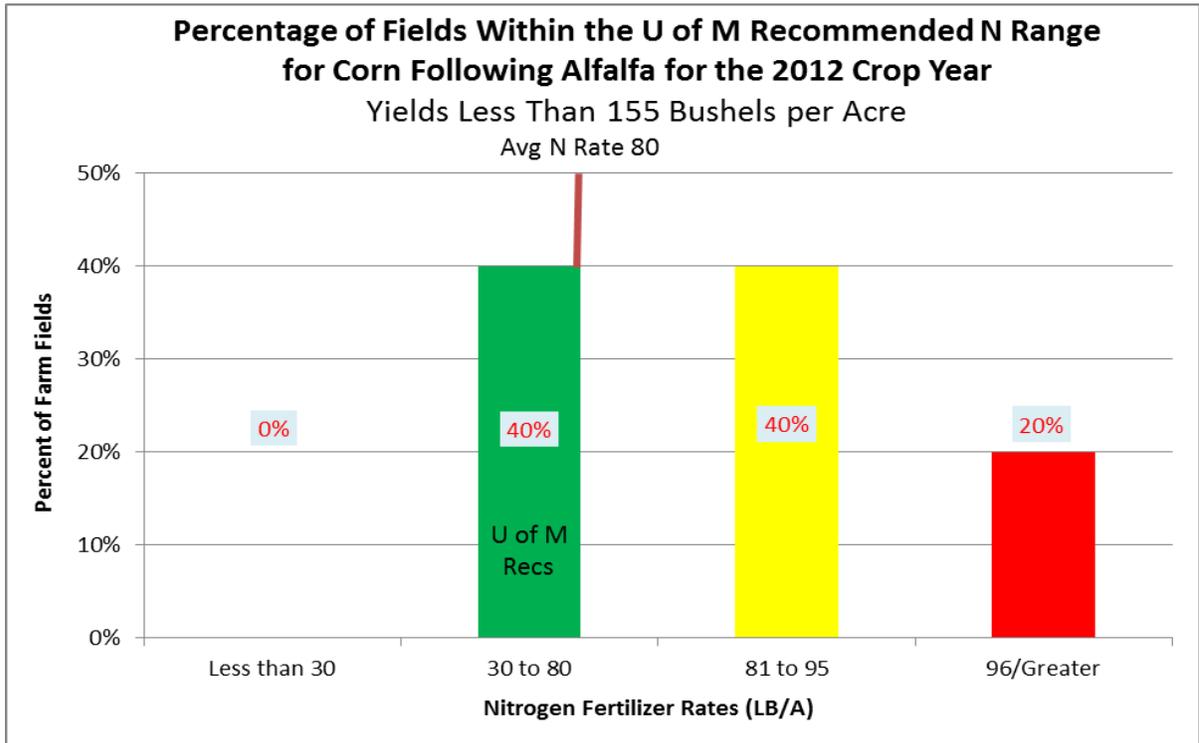


Figure 149. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the SC BMP region for 2012: 5 fields.

Table 129. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	150	135	150
Avg N Rate LB/A	No Data	45	91	130

Less than five farmers reported planting corn following alfalfa in the SC BMP region for fields:

- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Southwestern and West Central Region: Corn Following Alfalfa

Figure 150 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 130 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 150.

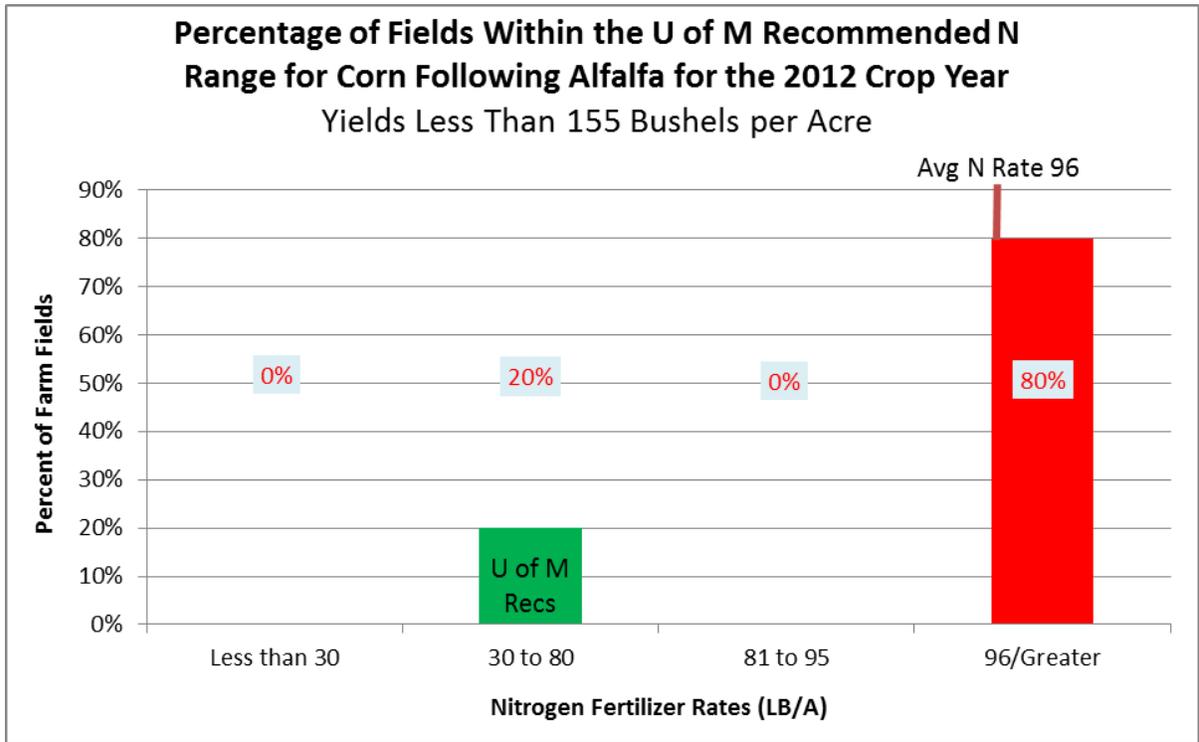


Figure 150. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the SC BMP region for 2012: 5 fields.

Table 130. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	150	No Data	121
Avg N Rate LB/A	No Data	30	No Data	113

Less than five farmers reported planting corn following alfalfa in the SW BMP region for fields:

- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region for fields:

- With yields less than 155 bushels per acre.
- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Figure 151 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following alfalfa with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 131 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 151.

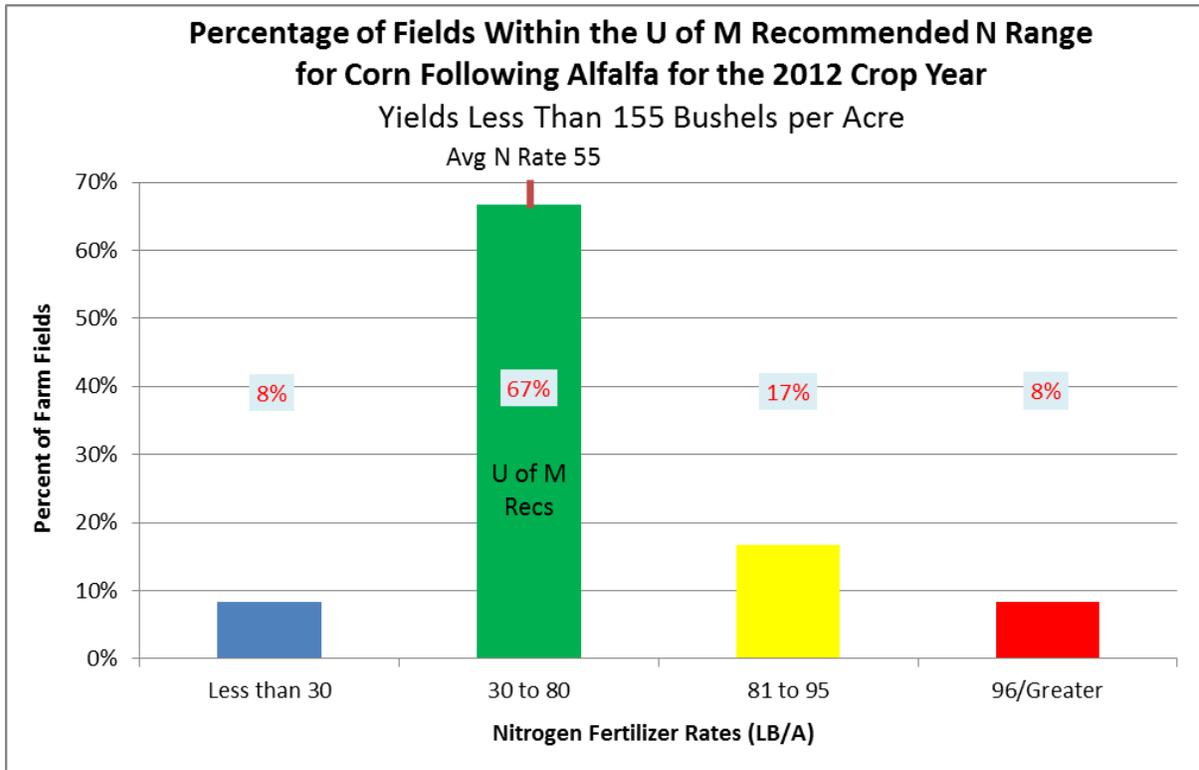


Figure 151. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2012: 12 fields.

Table 131. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	150	132	130	100
Avg N Rate LB/A	15	46	88	100

Figure 152 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following alfalfa with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 132 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 152.

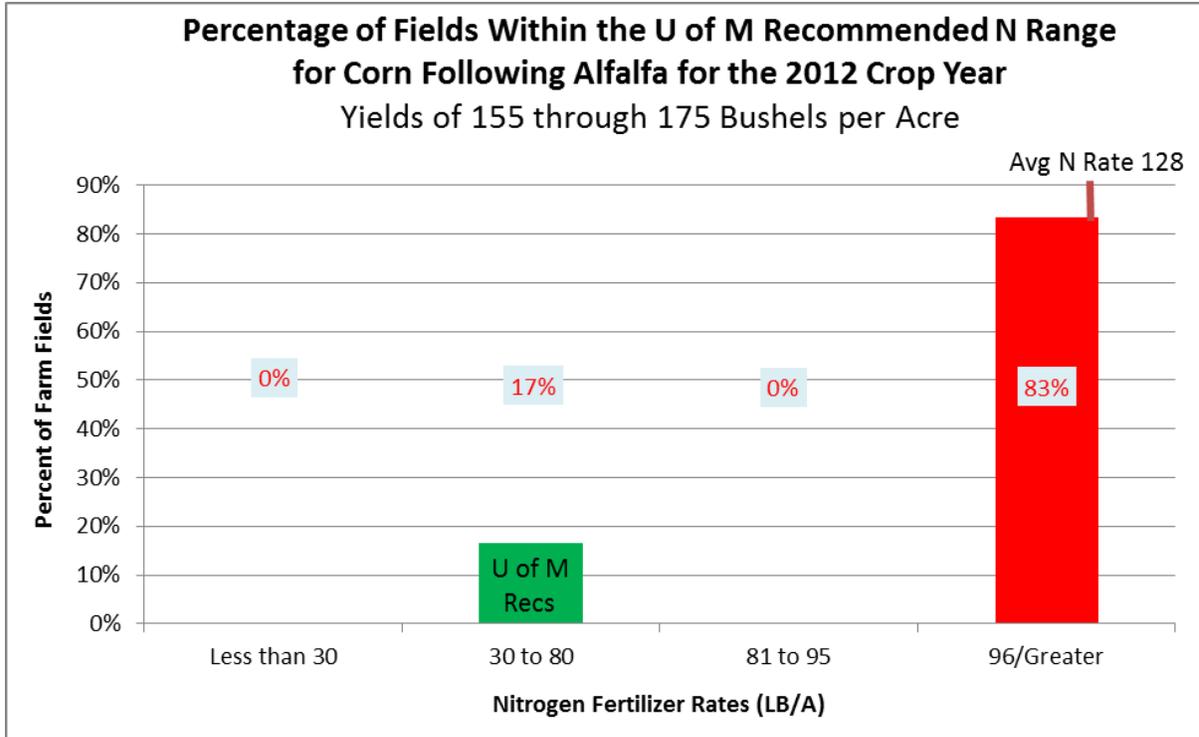


Figure 152. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in the IRR BMP region for 2012: 6 fields.

Table 132. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	175	No Data	170
Avg N Rate LB/A	No Data	75	No Data	138

Less than five farmers reported planting corn following alfalfa in the IRR BMP region for fields with yields greater than 175 bushels per acre.

Statewide: Corn Following Small Grains

Figure 153 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 133 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 153.

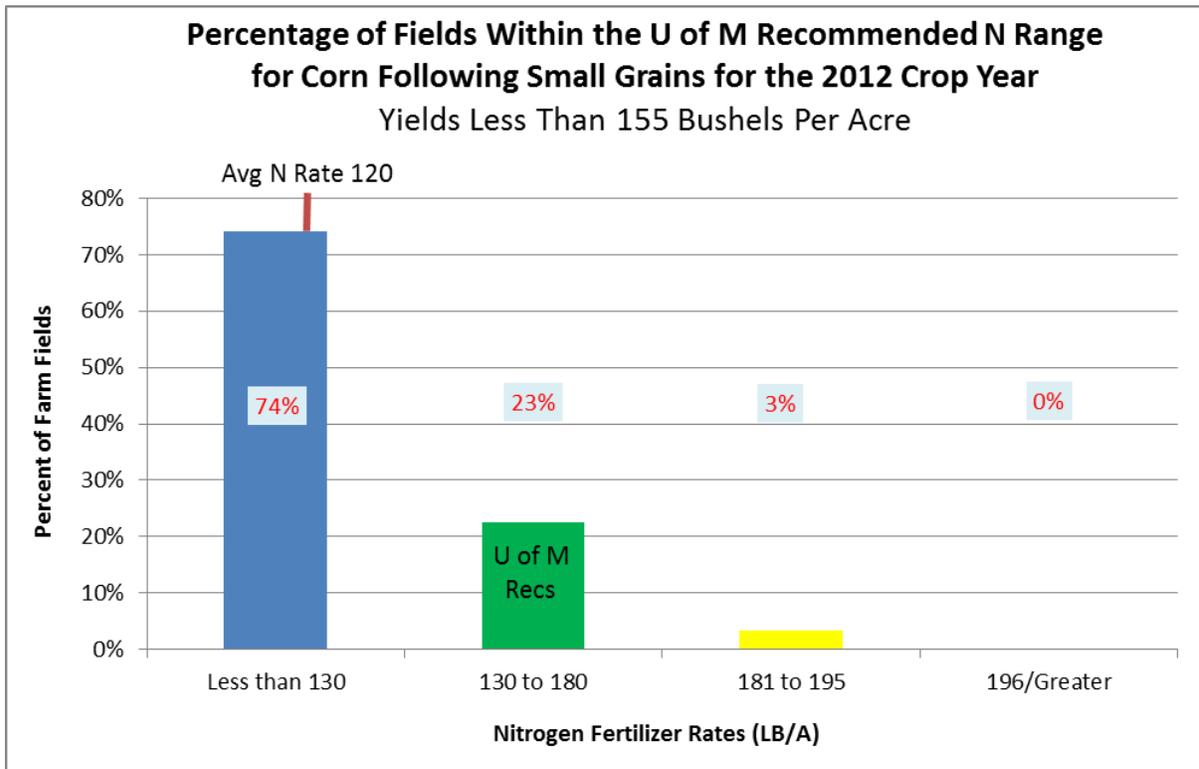


Figure 153. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in Minnesota for 2012: 31 fields.

Table 133. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	112	132	115	No Data
Avg N Rate LB/A	107	153	185	No Data

Figure 154 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains with yields of 155 through 175 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 134 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 154.

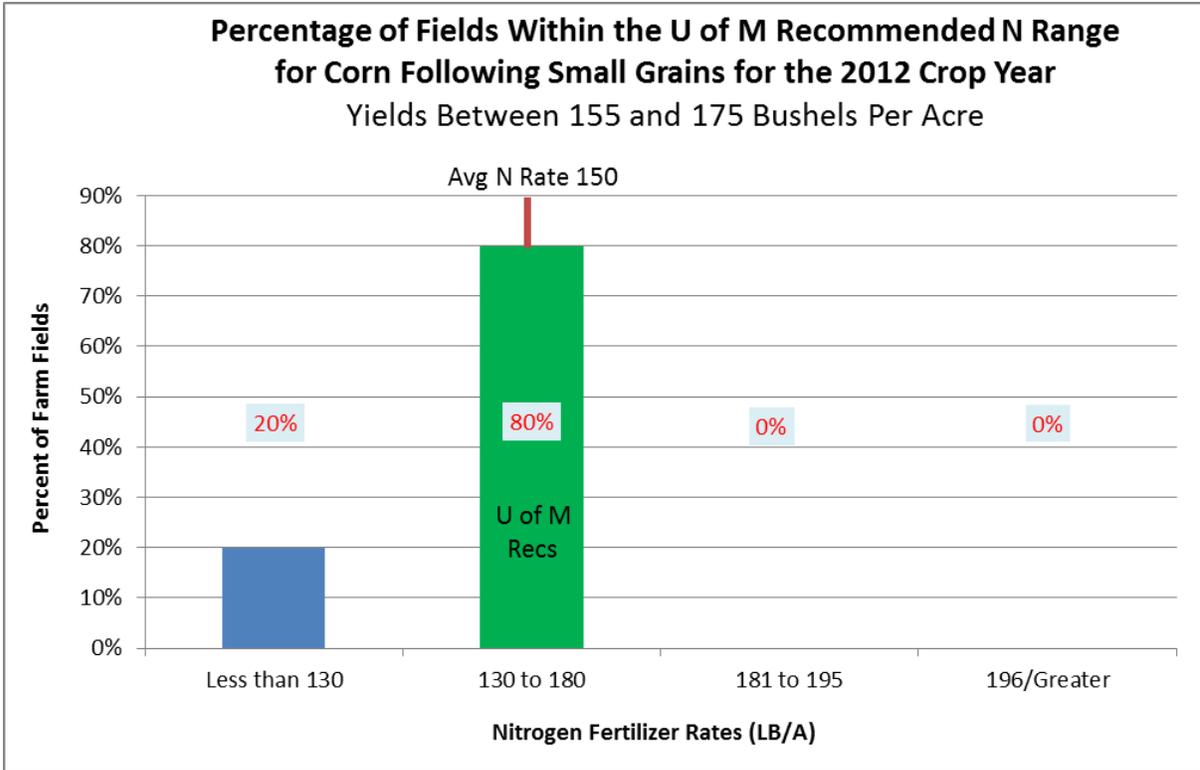


Figure 154. Percentage of fields within the U of M recommended N range for corn following small grains with yields of 155 through 175 bushels per acre in Minnesota for 2012: 5 fields.

Table 134. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields of 155 through 175 bushels per acre for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	160	161	No Data	No Data
Avg N Rate LB/A	129	155	No Data	No Data

Less than five farmers reported planting corn following small grains in Minnesota for fields with yields greater than 175 bushels per acre.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region for fields:

- With yields less than 155 bushels per acre.
- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region for fields:

- With yields less than 155 bushels per acre.
- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region for fields:

- With yields less than 155 bushels per acre.
- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Northwestern Region: Corn Following Small Grains

Figure 155 details the distribution of nitrogen fertilizer rates in the NW BMP region for corn following small grains with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 135 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 155.

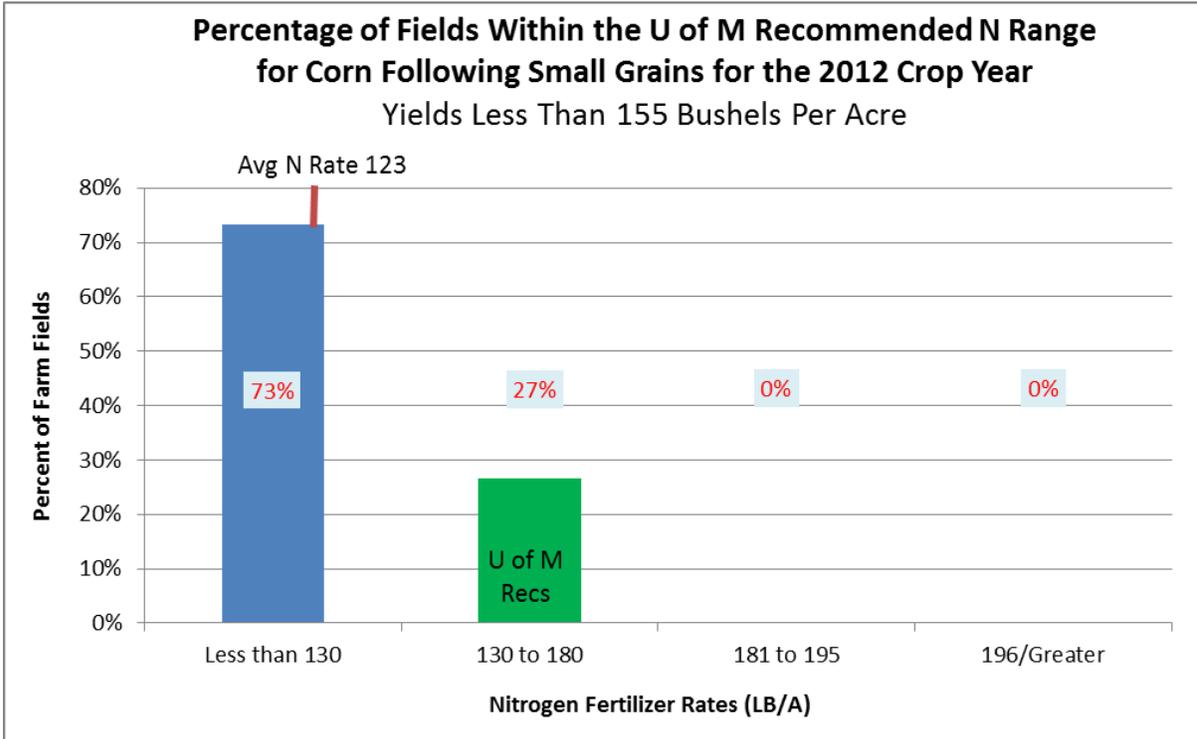


Figure 155. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the NW BMP region for 2012: 15 fields.

Table 135. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in the NW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	113	138	No Data	No Data
Avg N Rate LB/A	111	154	No Data	No Data

Less than five farmers reported planting corn following small grains in the NW BMP region for fields:

- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

Figure 156 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following small grains with yields less than 155 bushels per acre using a “nitrogen to corn price ratio” of 0.05. Table 136 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 156.

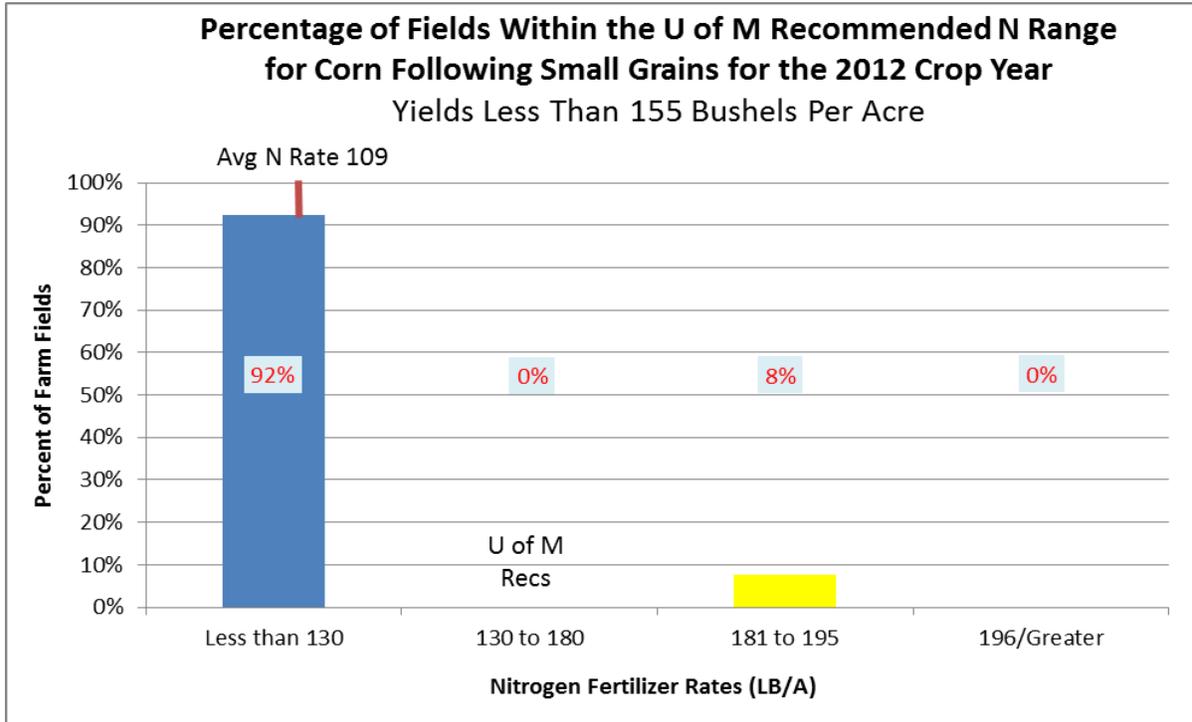


Figure 156. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the IRR BMP region for 2012: 13 fields.

Table 136. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	110	No Data	115	No Data
Avg N Rate LB/A	102	No Data	185	No Data

Less than five farmers reported planting corn following small grains in the IRR BMP region for fields:

- With yields between 155 and 175 bushels per acre.
- With yields greater than 175 bushels per acre.

Analysis of Nitrogen Rate Applications on Manured Corn Acres

Analysis was broken down by livestock manure type, crop history on manured fields planted with corn in 2012, and BMP region. Comparisons were made on whether the field was applied with manure or manure and commercial nitrogen fertilizer. In 2012, crop history was reported on manured acres. Analysis was conducted when five or more farmers reported that particular crop rotation. A price to nitrogen ratio of 0.05 was used for all manured acres. Fields were included only if the farmer reported the manure source and the first year mineralization of the nitrogen content of the manure source to their field. Fields applied with manure for the 2012 crop year, which included 2011 fall applications of manure, were included in the following analysis.

The following analysis includes five types of manure application to the 2012 corn crop:

- All sources of manure.
- Dairy manure.
- Beef manure.
- Hog manure.
- Poultry manure.

Nitrogen recommendations are detailed to the five most common crop histories:

- Corn following soybeans.
- Corn following corn.
- Corn following corn following alfalfa.
- Corn following alfalfa.
- Corn following small grains.

Manure Applications from All Sources Statewide: Corn Following Soybeans

Figure 157 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with manure⁵ or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 137 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 157.

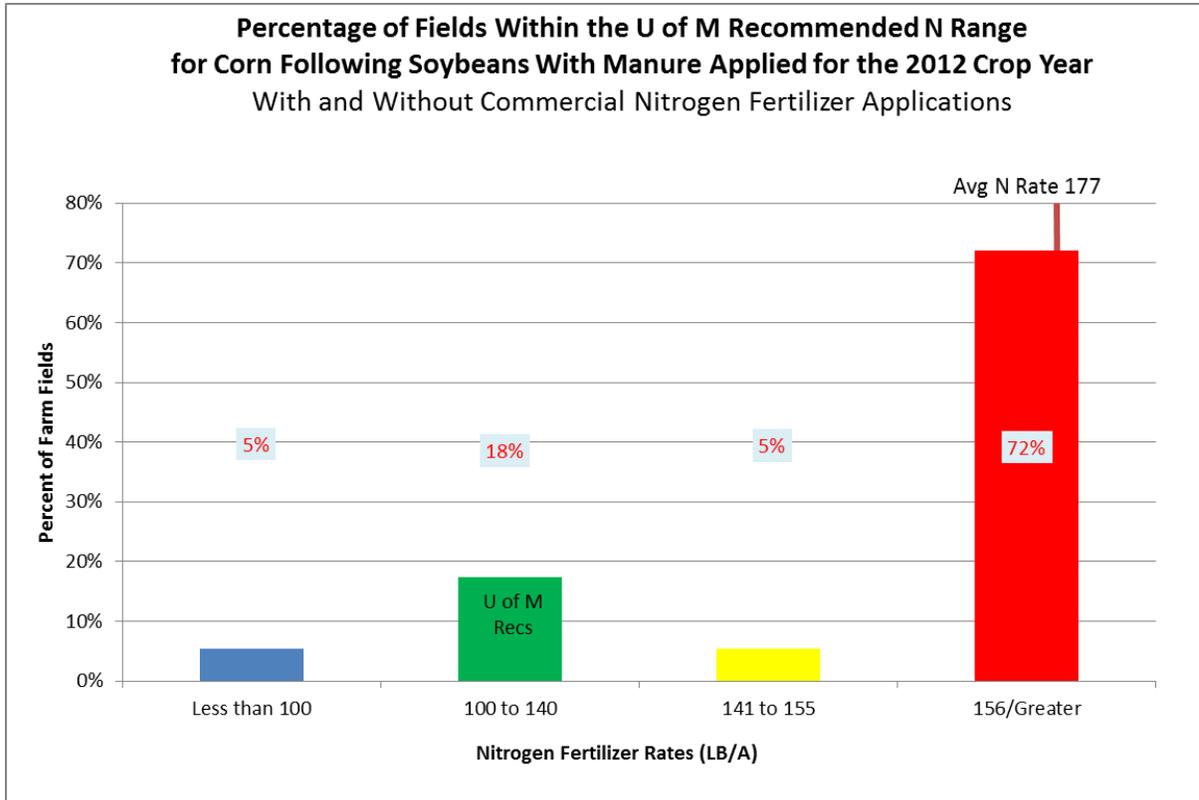


Figure 157. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 75 fields.

Table 137. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	156	174	174	172
Avg N Rate LB/A	61	126	149	199

⁵ Manure is from all manure sources

Figure 158 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 138 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 158.

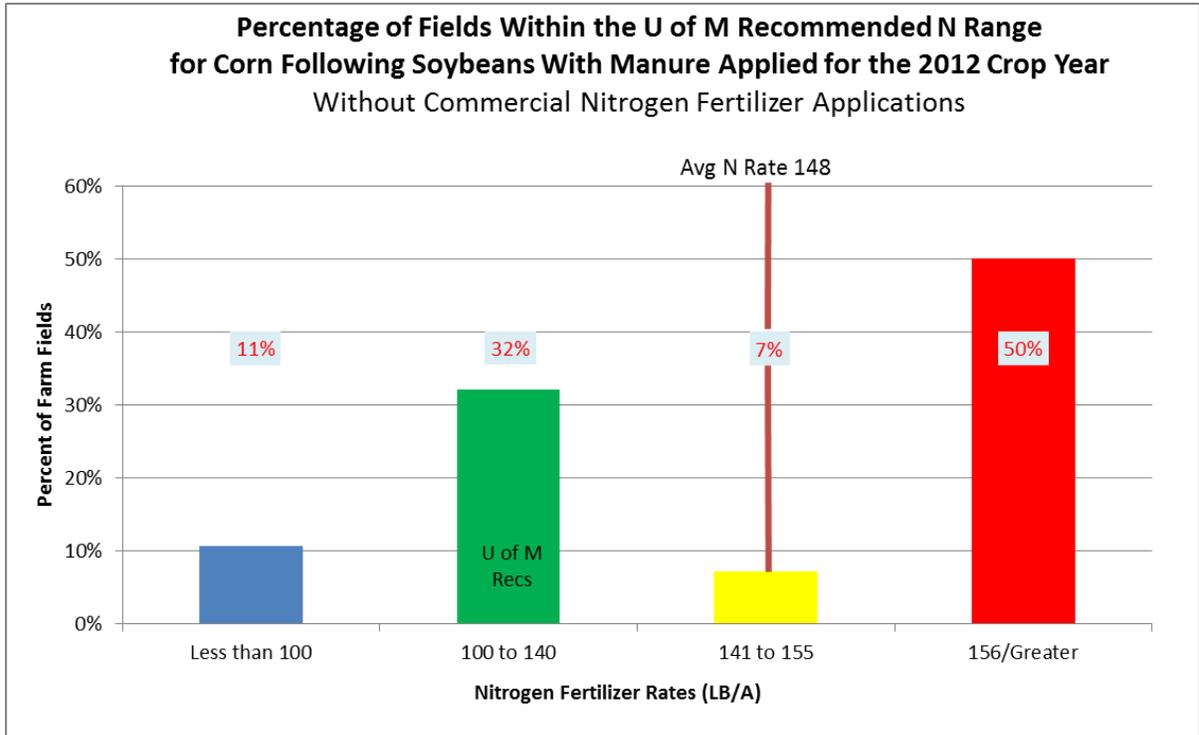


Figure 158. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 28 fields.

Table 138. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	158	168	158	181
Avg N Rate LB/A	57	127	150	181

Figure 159 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 139 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 159.

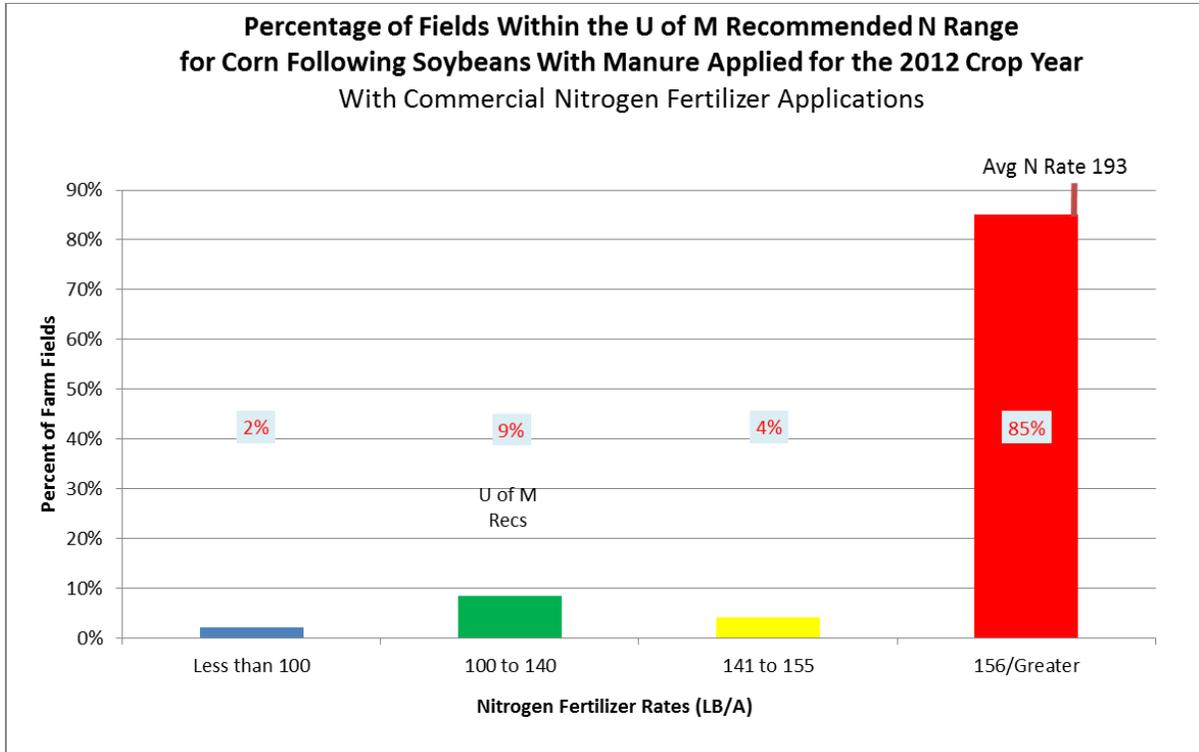


Figure 159. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 47 fields.

Table 139. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	150	188	190	169
Avg N Rate LB/A	70	123	148	206

Southeastern Region: Corn Following Soybeans

Figure 160 details the distribution of nitrogen rates in the SE BMP region for corn following soybeans applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 140 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 160.

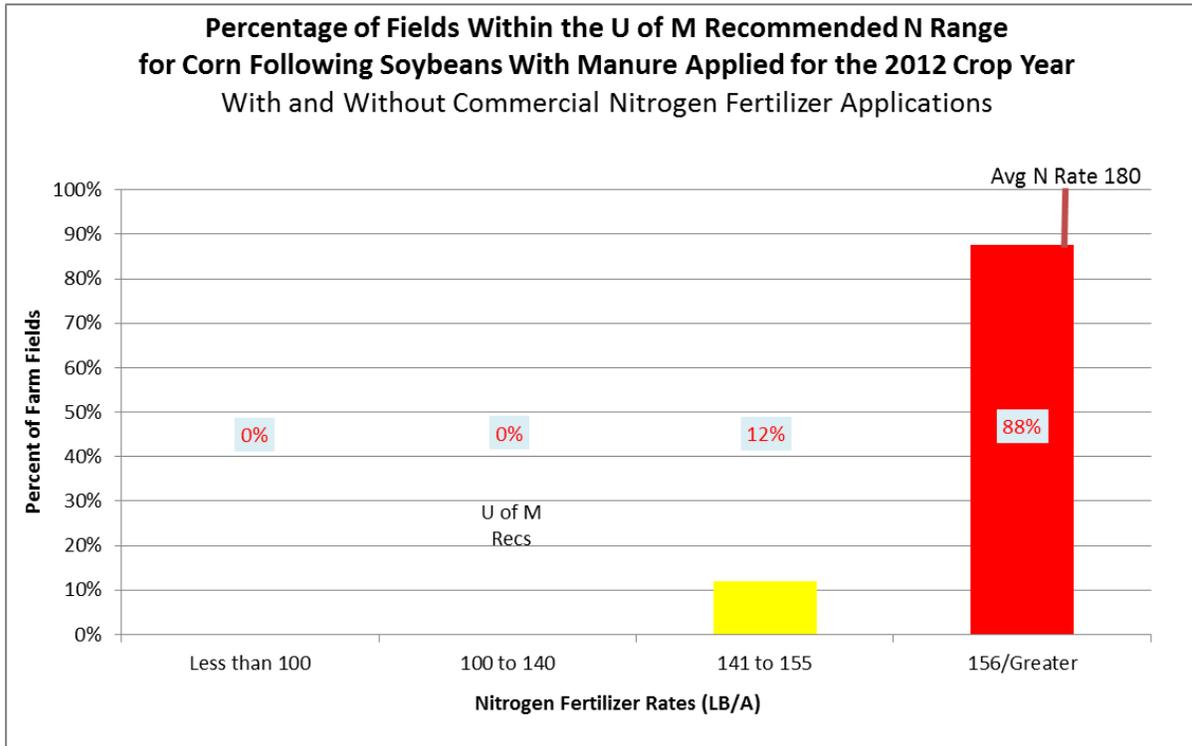


Figure 160. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 8 fields

Table 140. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	No Data	165	165
Avg N Rate LB/A	No Data	No Data	150	188

Less than five farmers reported planting corn following soybeans in the SE BMP region on fields applied with manure and no commercial nitrogen fertilizer.

Figure 161 details the distribution of nitrogen rates in the SE BMP region for corn following soybeans applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 141 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 161.

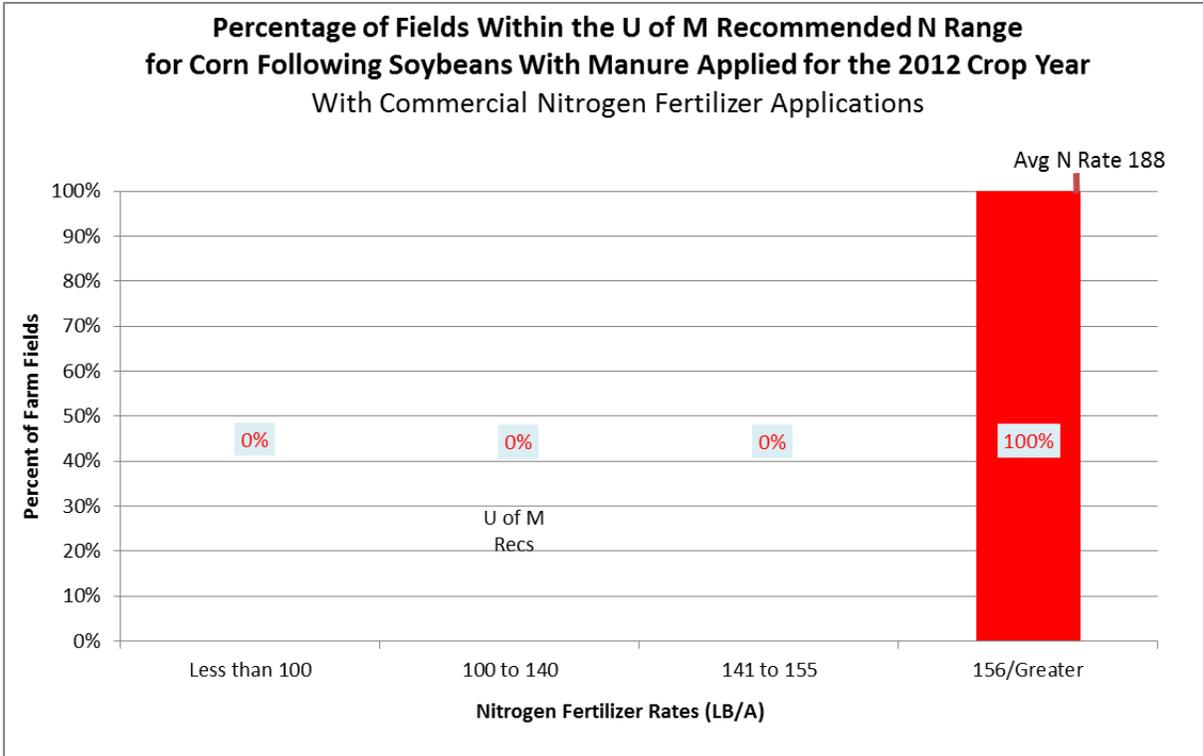


Figure 161. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields

Table 141. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	165
Avg N Rate LB/A	No Data	No Data	No Data	188

South Central Region: Corn Following Soybeans

Figure 162 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 142 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 162.

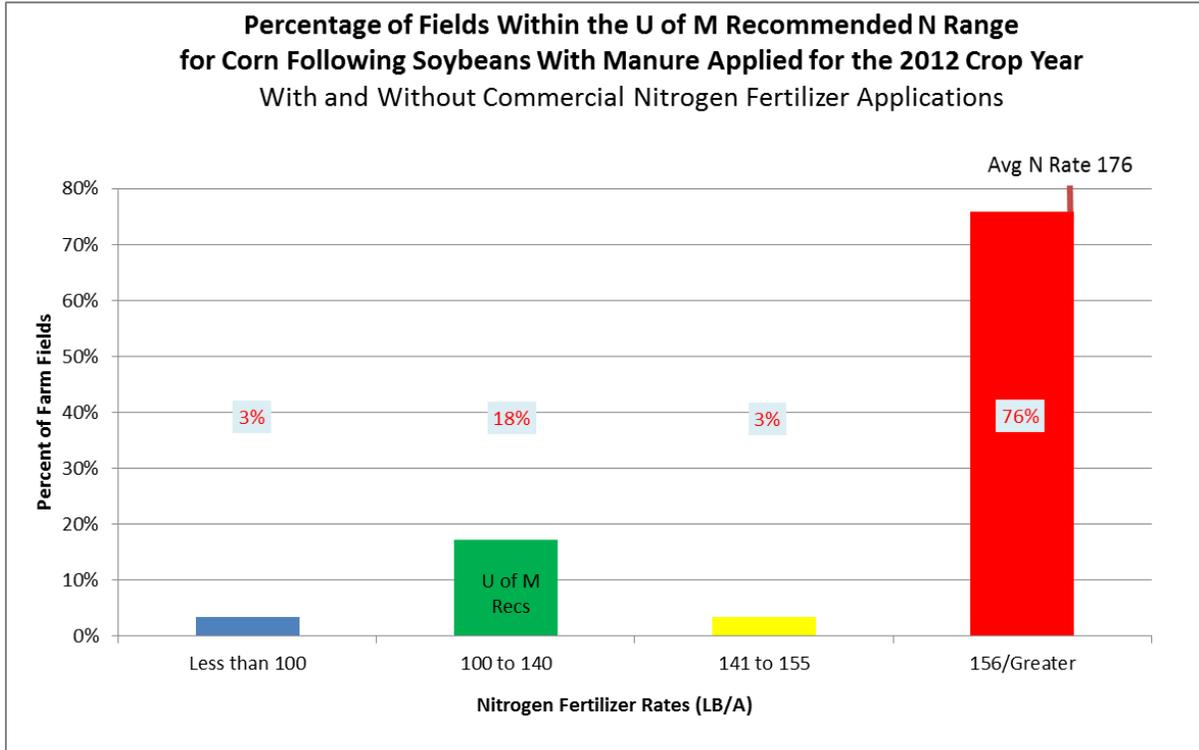


Figure 162. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 29 fields.

Table 142. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	165	177	200	176
Avg N Rate LB/A	52	128	145	194

Figure 163 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 143 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 163.

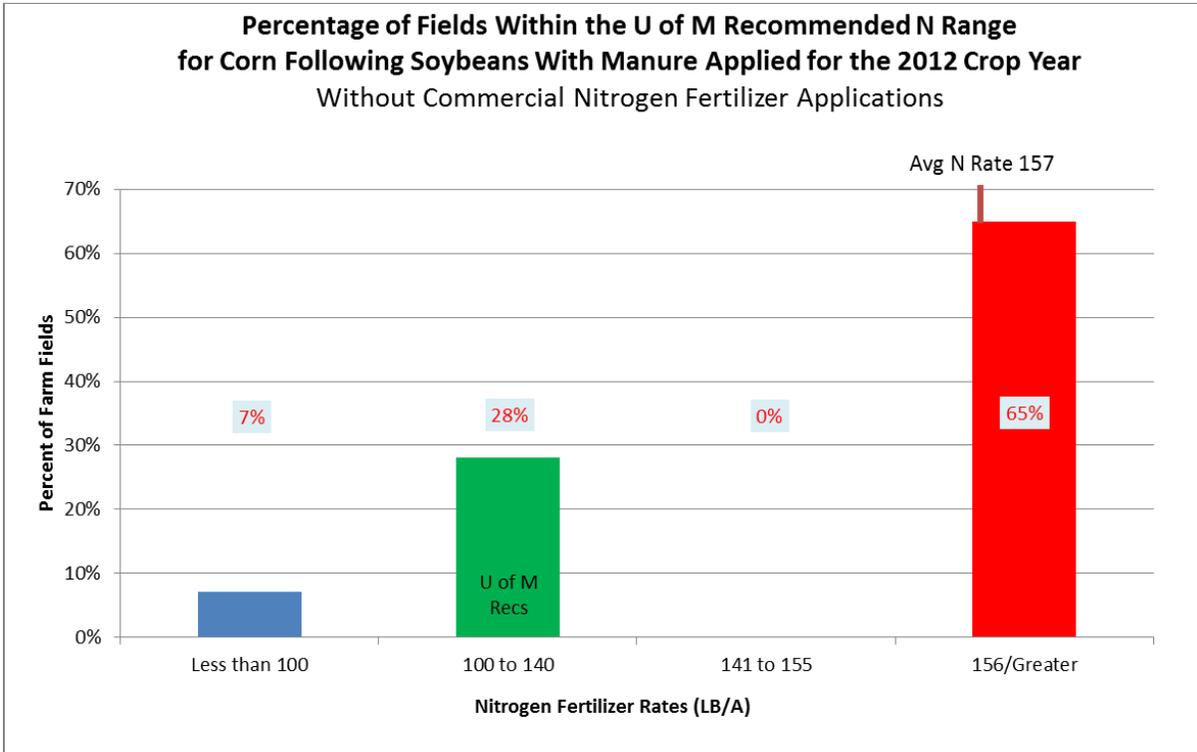


Figure 163. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 14 fields.

Table 143. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	165	176	No Data	179
Avg N Rate LB/A	52	127	No Data	182

Figure 164 details the distribution of nitrogen rates in the SC BMP region for corn following soybean fields applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 144 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 164.

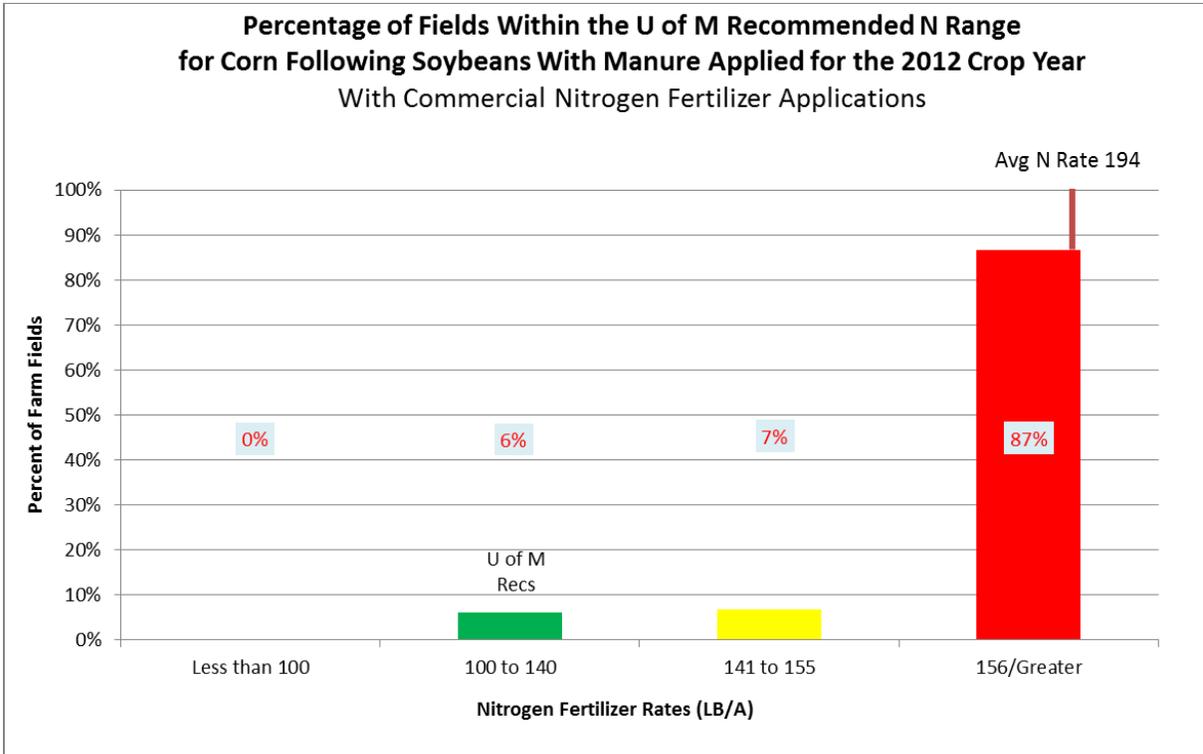


Figure 164. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 15 fields.

Table 144. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	180	200	174
Avg N Rate LB/A	No Data	130	145	203

Southwestern and West Central Region: Corn Following Soybeans

Figure 165 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 145 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 165.

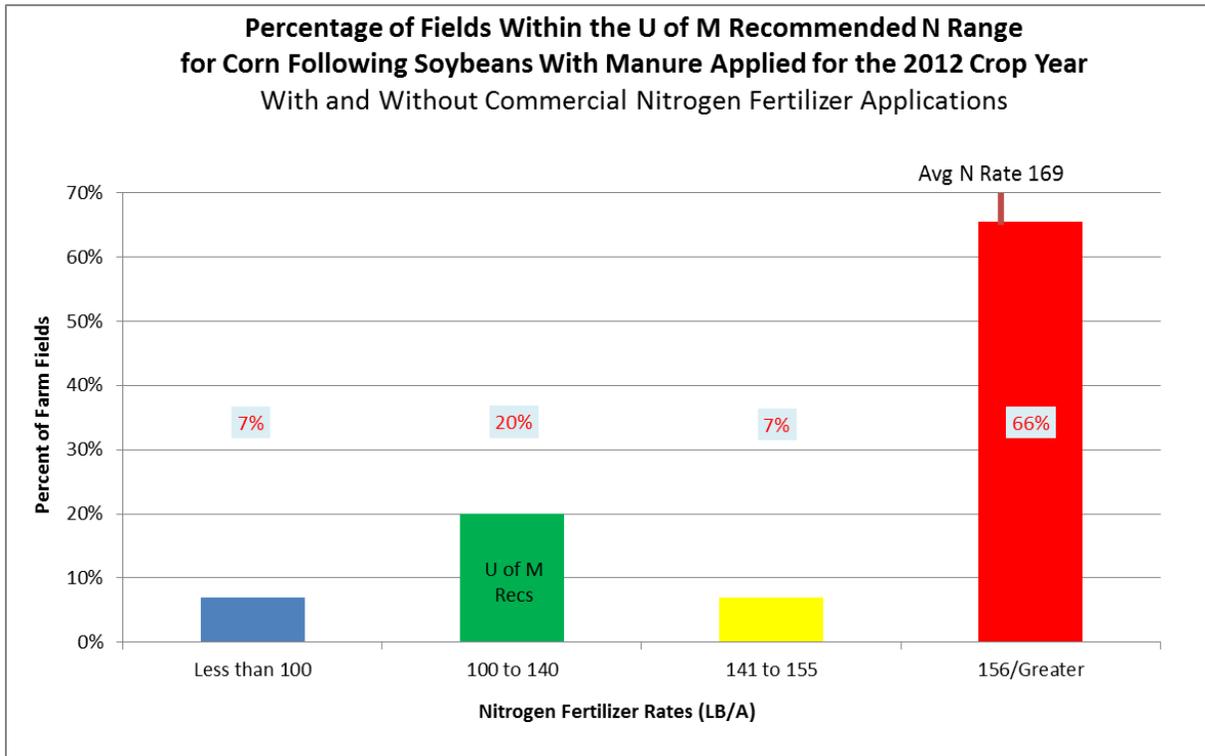


Figure 165. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 29 fields.

Table 145. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	155	177	165	169
Avg N Rate LB/A	60	122	150	197

Figure 166 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 146 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 166.

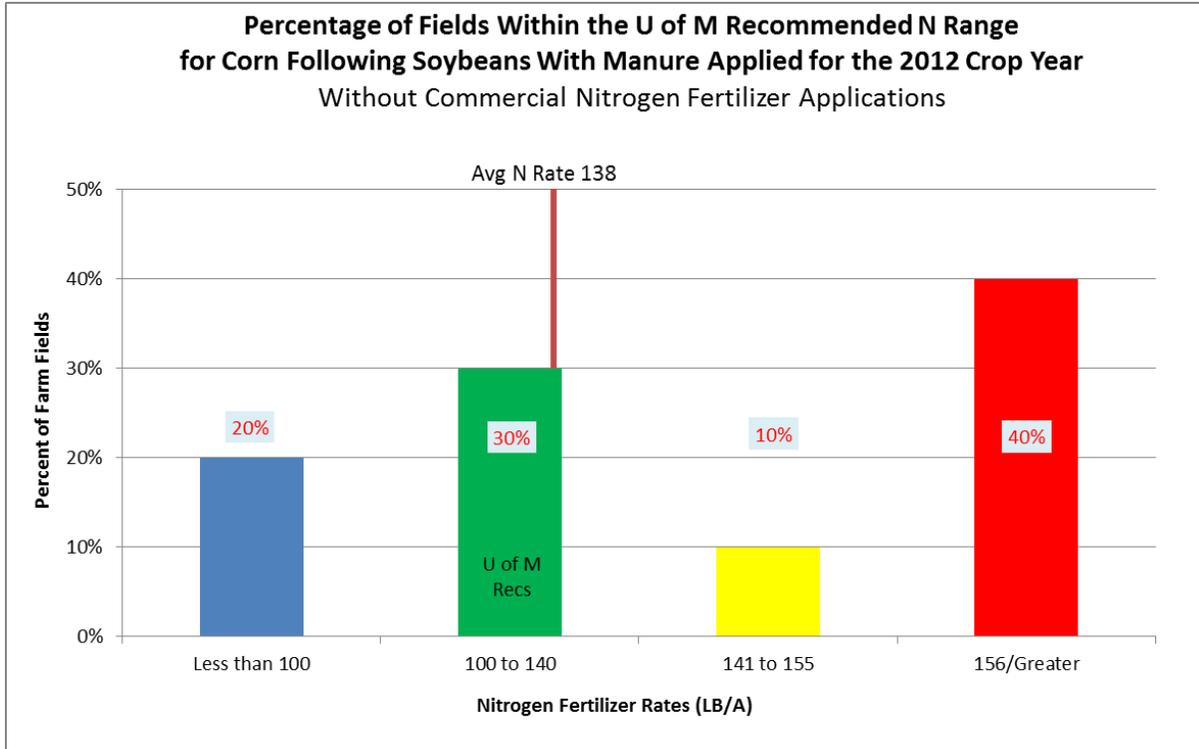


Figure 166. . Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 10 fields.

Table 146. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	155	163	150	181
Avg N Rate LB/A	60	124	150	185

Figure 167 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 147 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 167.

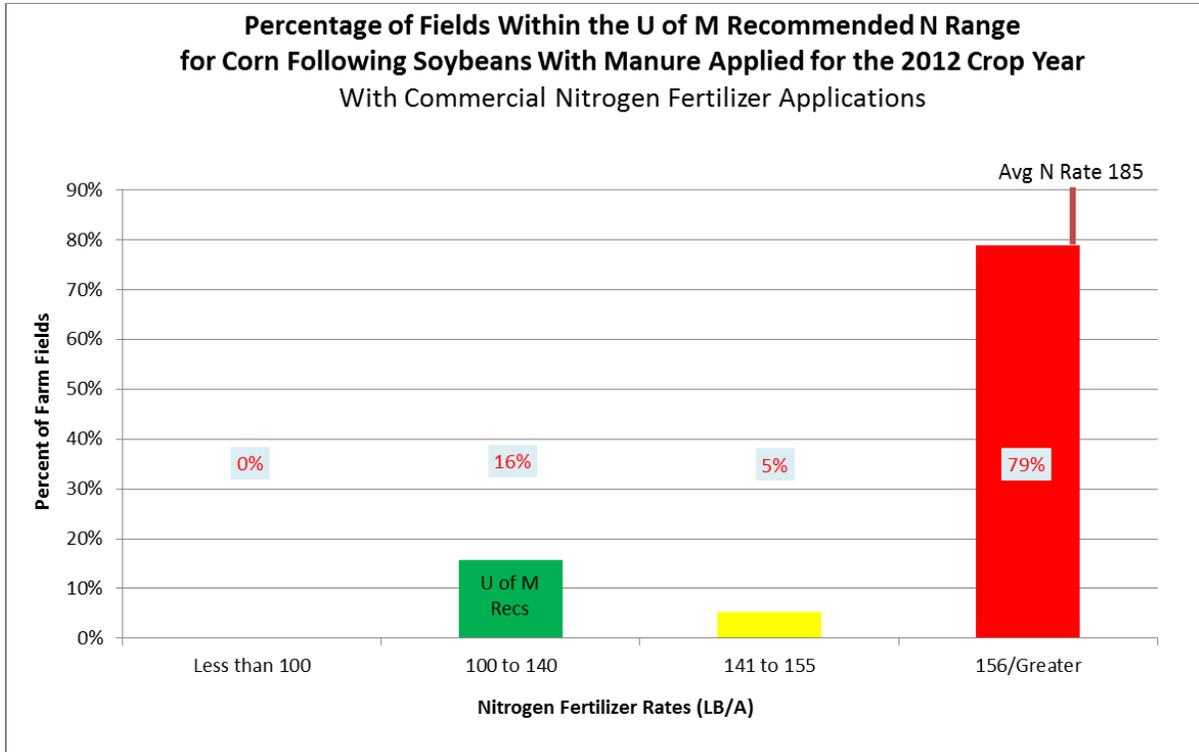


Figure 167. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 19 fields.

Table 147. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	191	180	160
Avg N Rate LB/A	No Data	120	150	200

Northwestern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

Figure 168 details the distribution of nitrogen rates in the IRR BMP region for corn following soybeans applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 148 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 168.

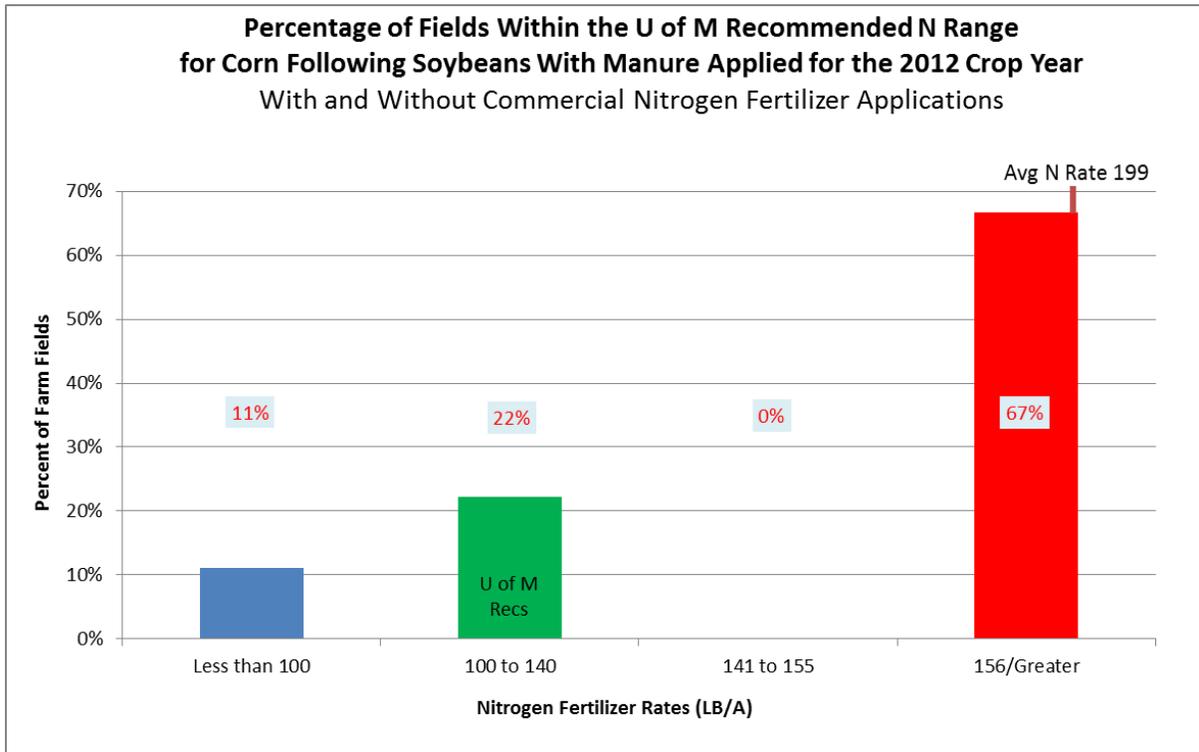


Figure 168. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 9 fields.

Table 148. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	150	160	No Data	167
Avg N Rate LB/A	70	130	No Data	244

Less than five farmers reported planting corn following soybeans in the IRR BMP region on fields applied with manure and no commercial nitrogen fertilizer.

Figure 169 details the distribution of nitrogen fertilizer rates in the IRR BMP region for corn following soybeans applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 149 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 169.

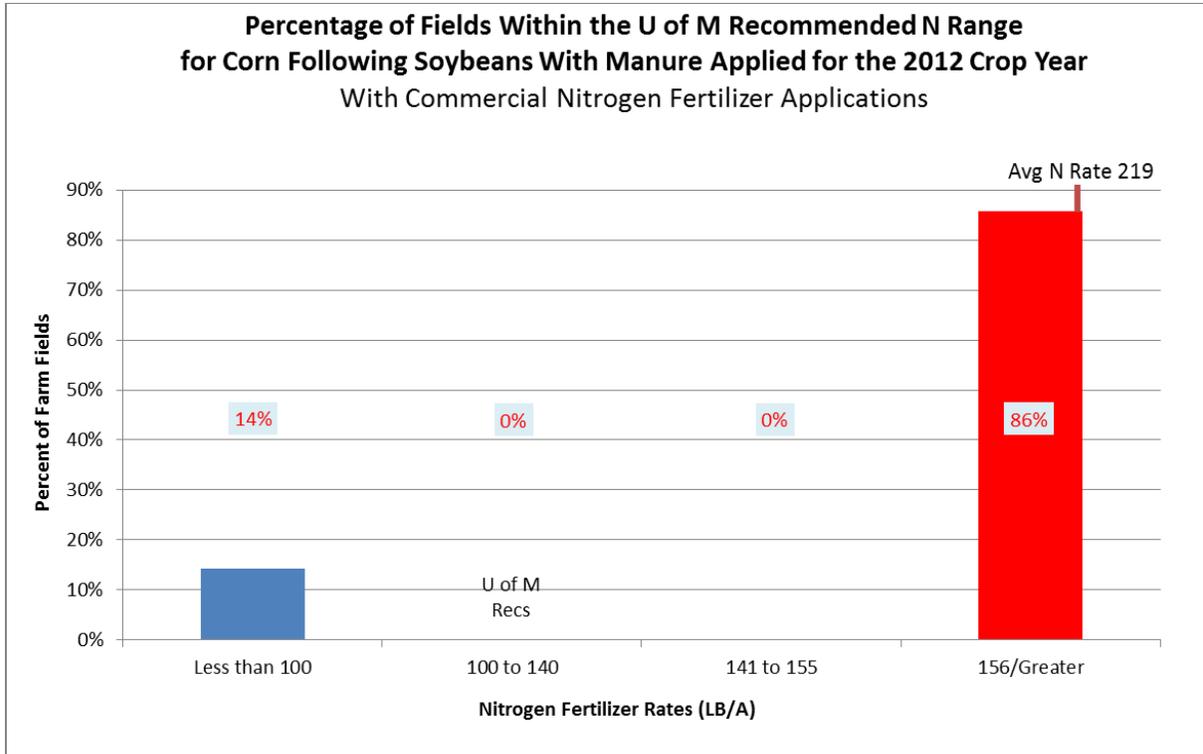


Figure 169. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 7 fields.

Table 149. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	150	No Data	No Data	167
Avg N Rate LB/A	70	No Data	No Data	244

Statewide: Corn Following Corn

Figure 170 details the distribution of nitrogen rates in Minnesota for corn following corn applied with manure⁶ or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 150 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 170.

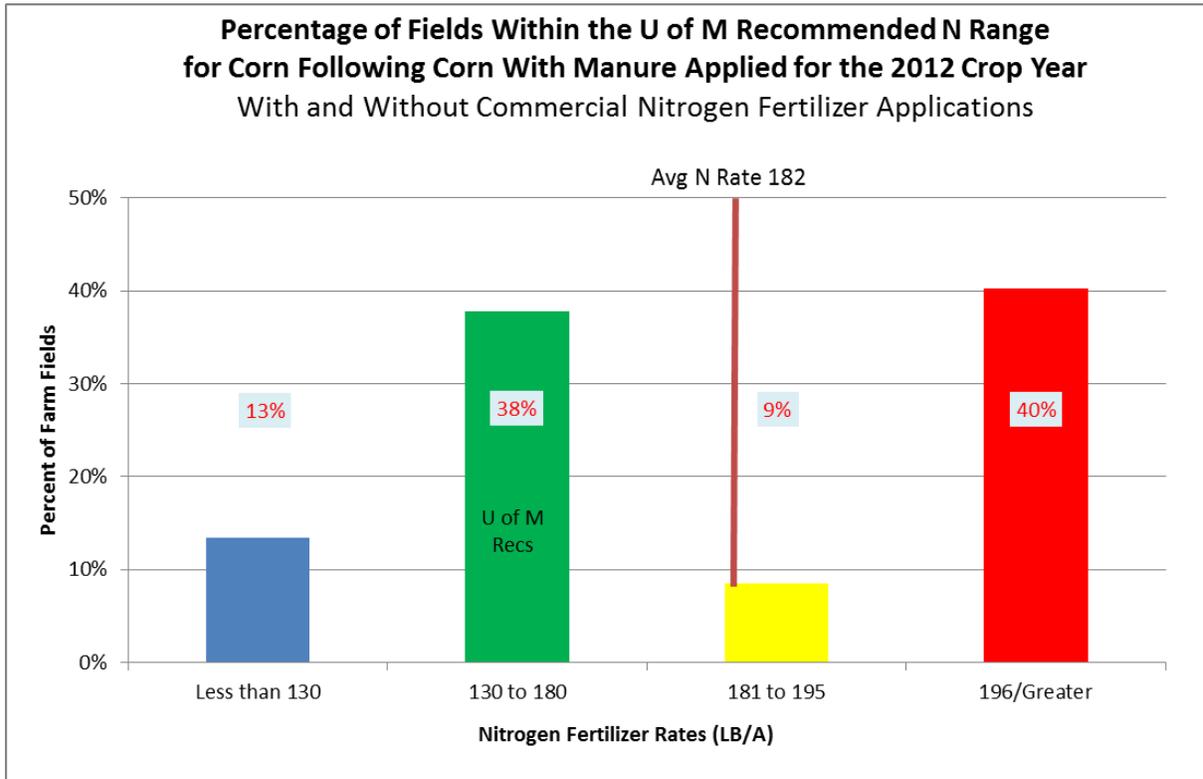


Figure 170. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 82 fields.

Table 150. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	161	166	207	170
Avg N Rate LB/A	93	158	191	233

⁶ Manure is from all manure sources

Figure 171 details the distribution of nitrogen rates in Minnesota for corn following corn applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 151 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 171.

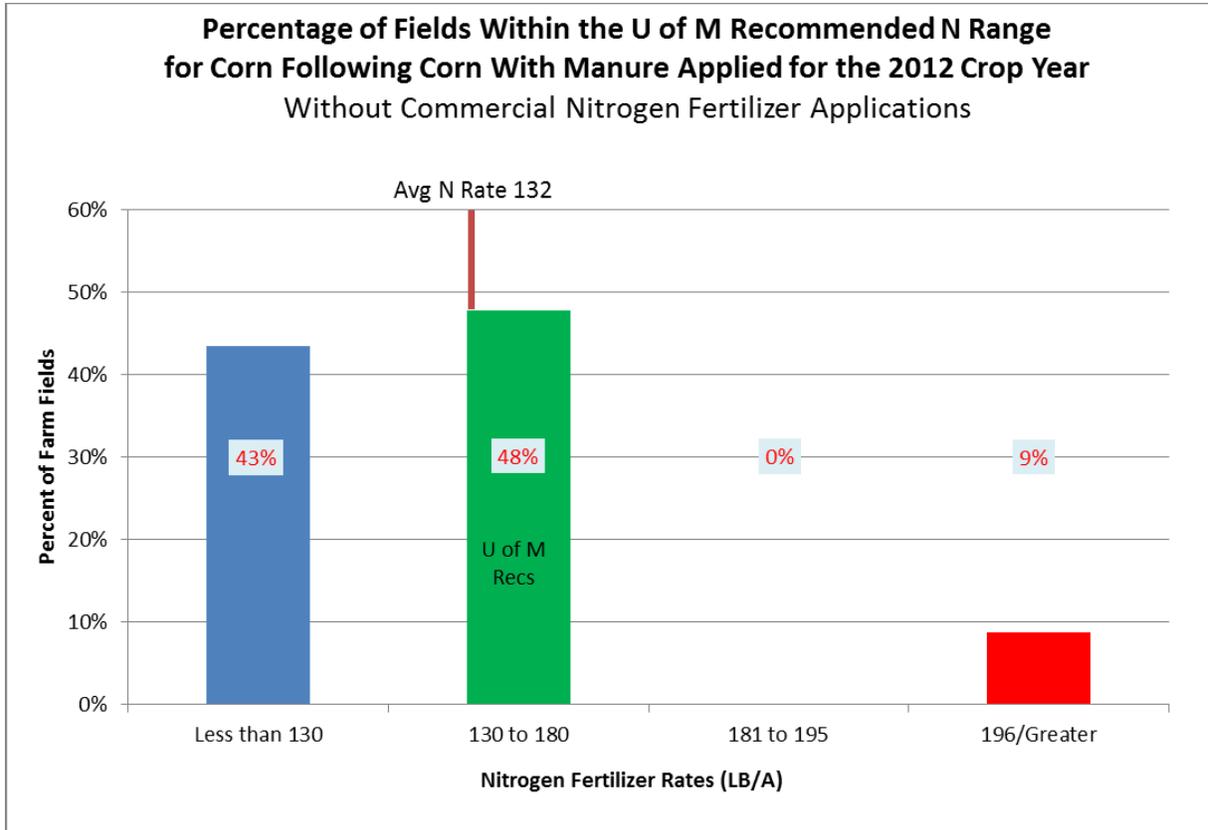


Figure 171. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 23 fields.

Table 151. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	162	181	No Data	190
Avg N Rate LB/A	90	151	No Data	235

Figure 172 details the distribution of nitrogen rates in Minnesota for corn following corn applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 152 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 172.

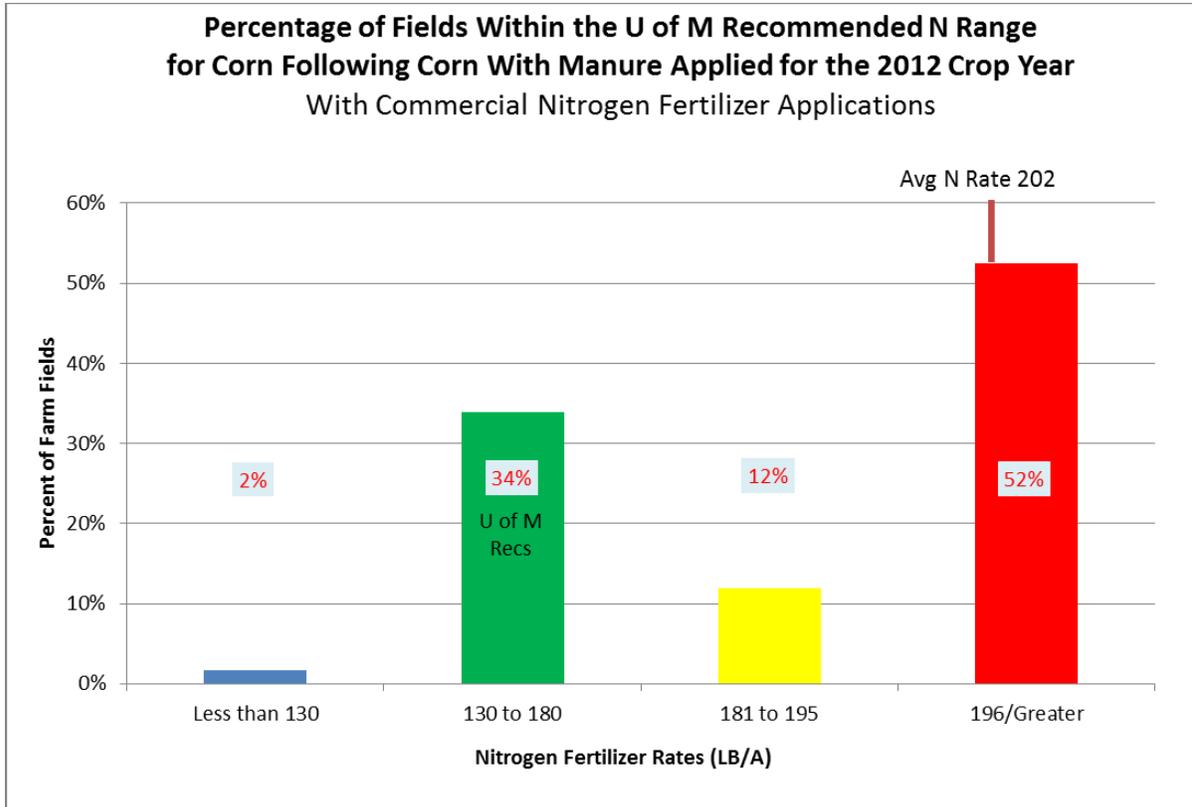


Figure 172. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 59 fields.

Table 152. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	159	207	169
Avg N Rate LB/A	123	162	191	233

Southeastern Region: Corn Following Corn

Figure 173 details the distribution of nitrogen rates in the SE BMP region for corn following corn applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 153 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 173.

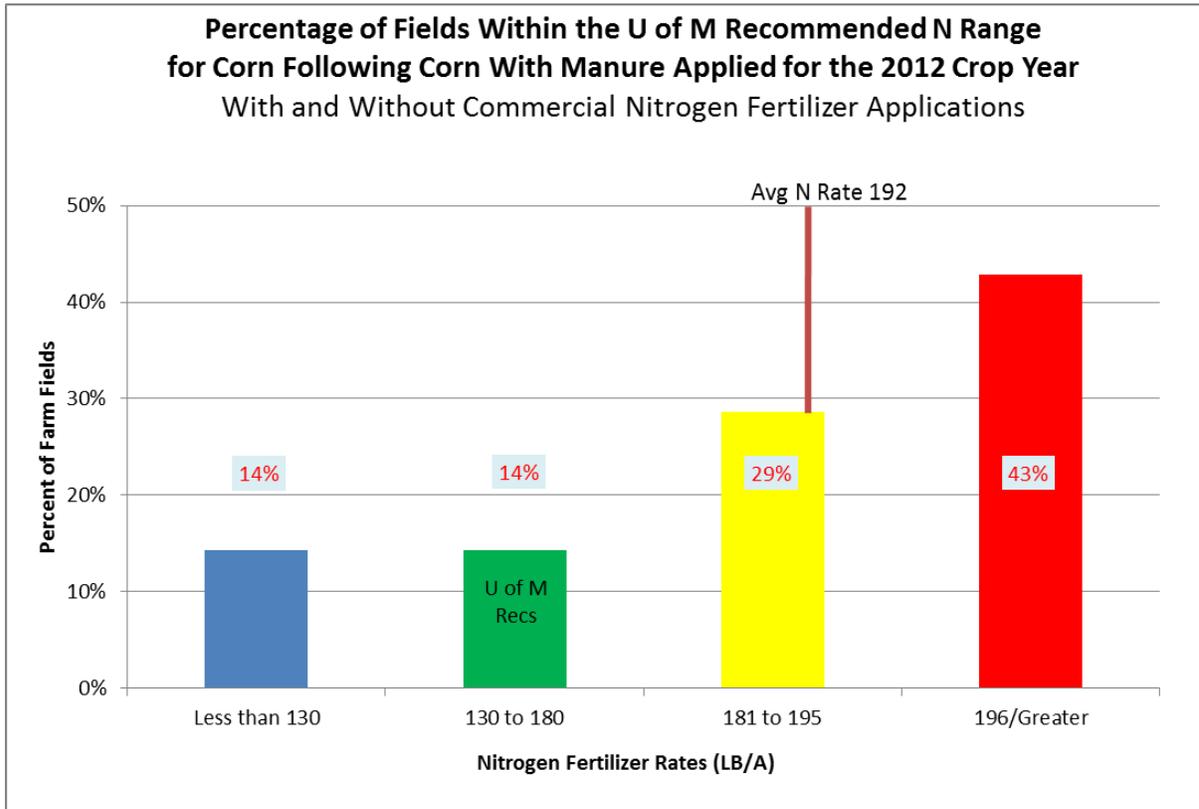


Figure 173. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 14 fields.

Table 153. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	181	179	205	184
Avg N Rate LB/A	80	148	191	245

Less than five farmers reported planting corn following corn in the SE BMP region on fields applied with manure and no commercial nitrogen fertilizer.

Figure 174 details the distribution of nitrogen rates in the SE BMP region for corn following corn applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 154 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 174.

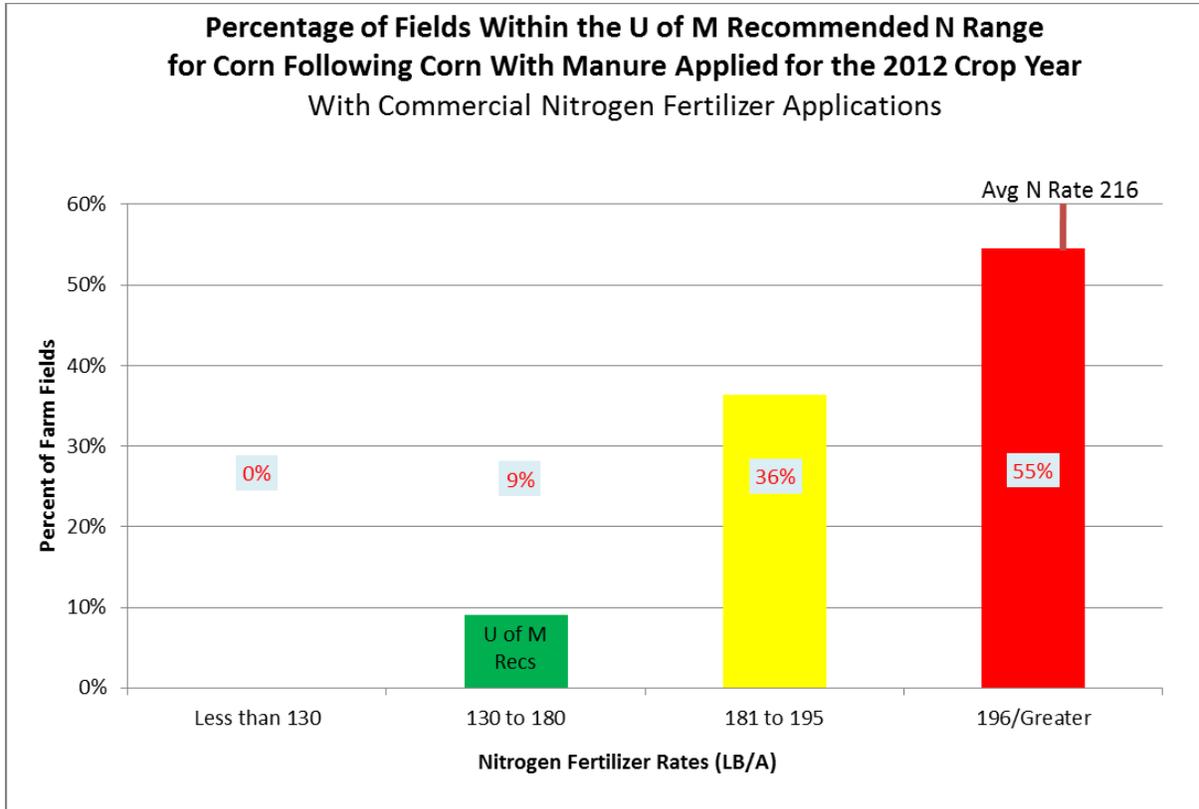


Figure 174. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 11 fields.

Table 154. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	163	205	184
Avg N Rate LB/A	No Data	135	191	245

South Central Region: Corn Following Corn

Figure 175 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 155 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 175.

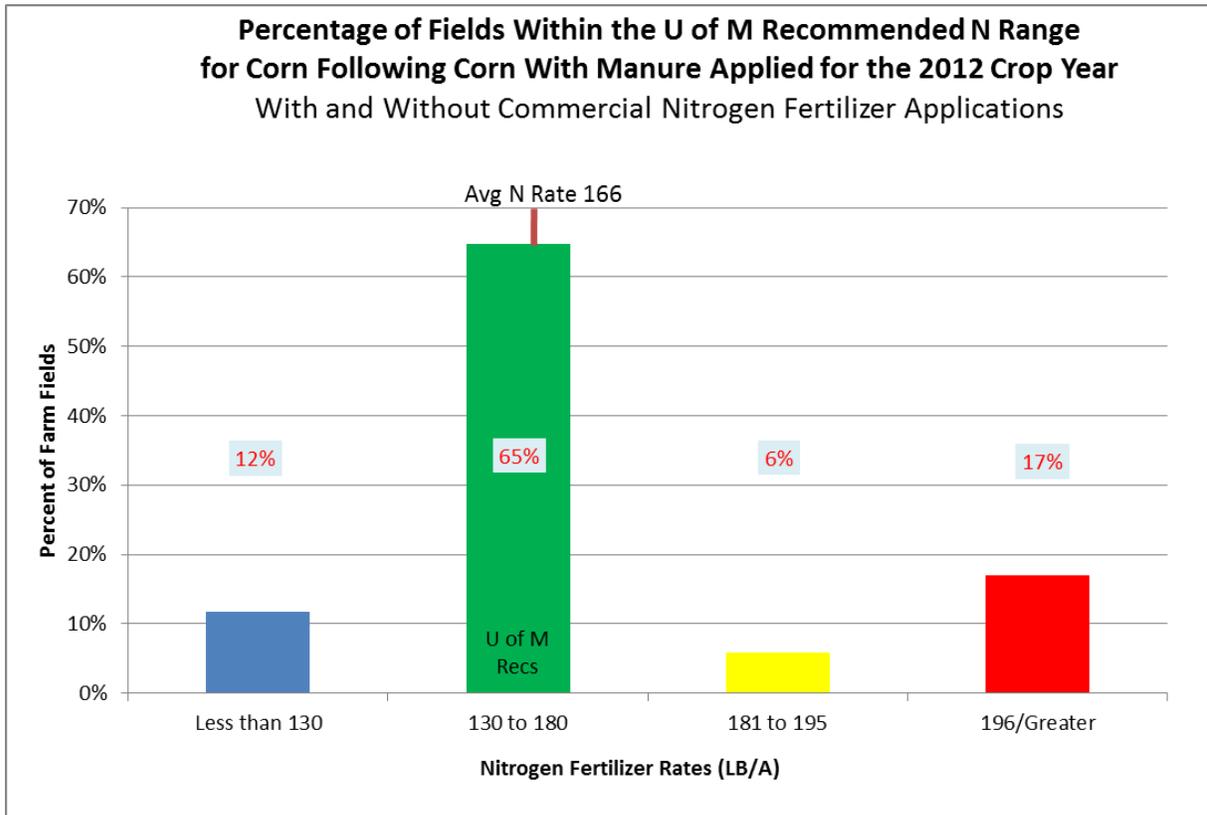


Figure 175. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 17 fields.

Table 155. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	163	184	185	187
Avg N Rate LB/A	83	159	189	242

Figure 176 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 156 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 176.

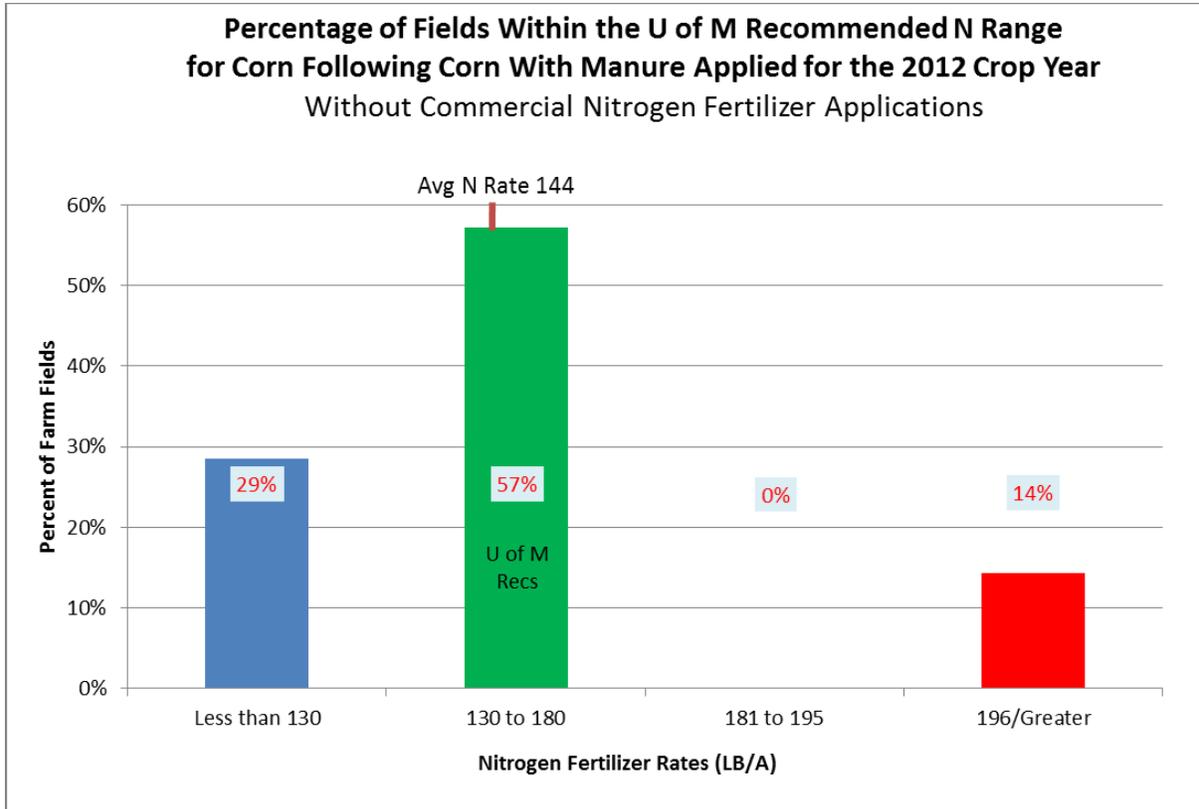


Figure 176. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 7 fields.

Table 156. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	163	185	No Data	195
Avg N Rate LB/A	83	146	No Data	260

Figure 177 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 157 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 177.

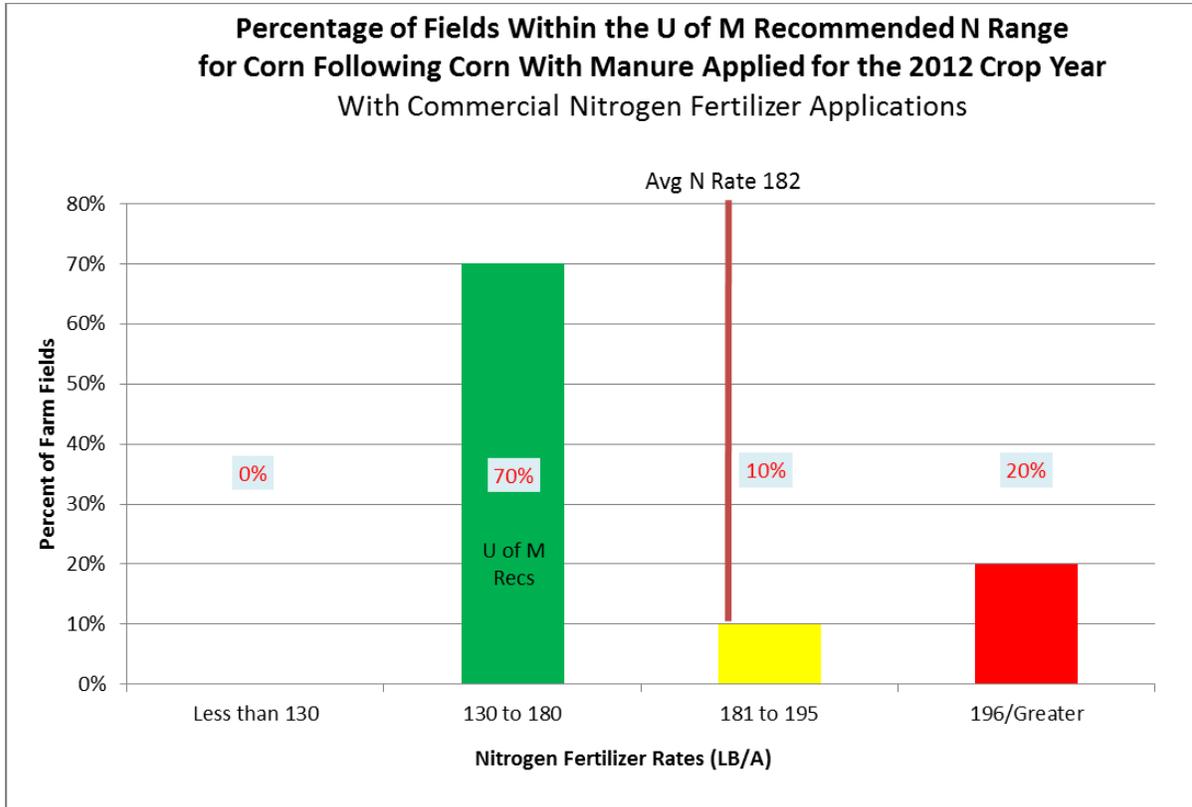


Figure 177. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 10 fields.

Table 157. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	183	185	183
Avg N Rate LB/A	No Data	166	189	233

Southwestern and West Central Region: Corn Following Corn

Figure 178 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05.. Table 158 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 178.

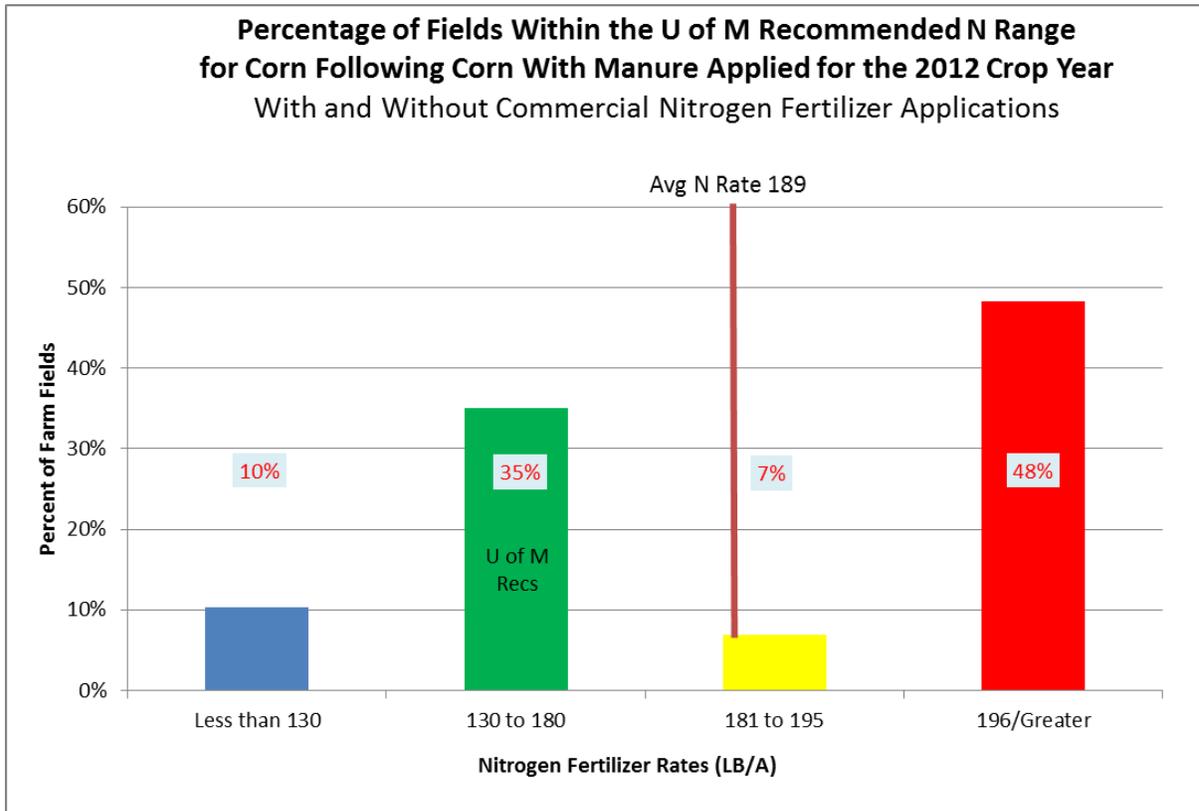


Figure 178. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 29 fields.

Table 158. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	170	160	223	176
Avg N Rate LB/A	113	158	193	226

Figure 179 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 159 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 179.

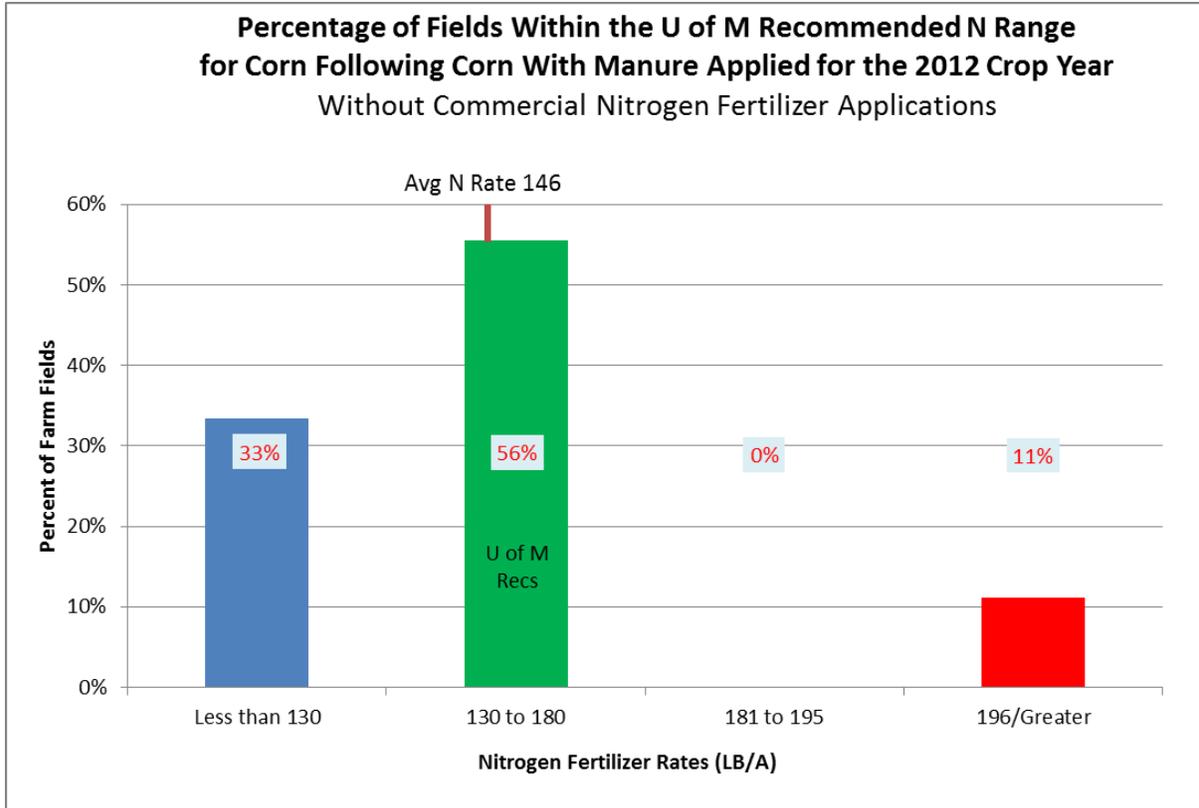


Figure 179. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.

Table 159. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	170	173	No Data	185
Avg N Rate LB/A	113	153	No Data	210

Figure 180 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 160 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 180.

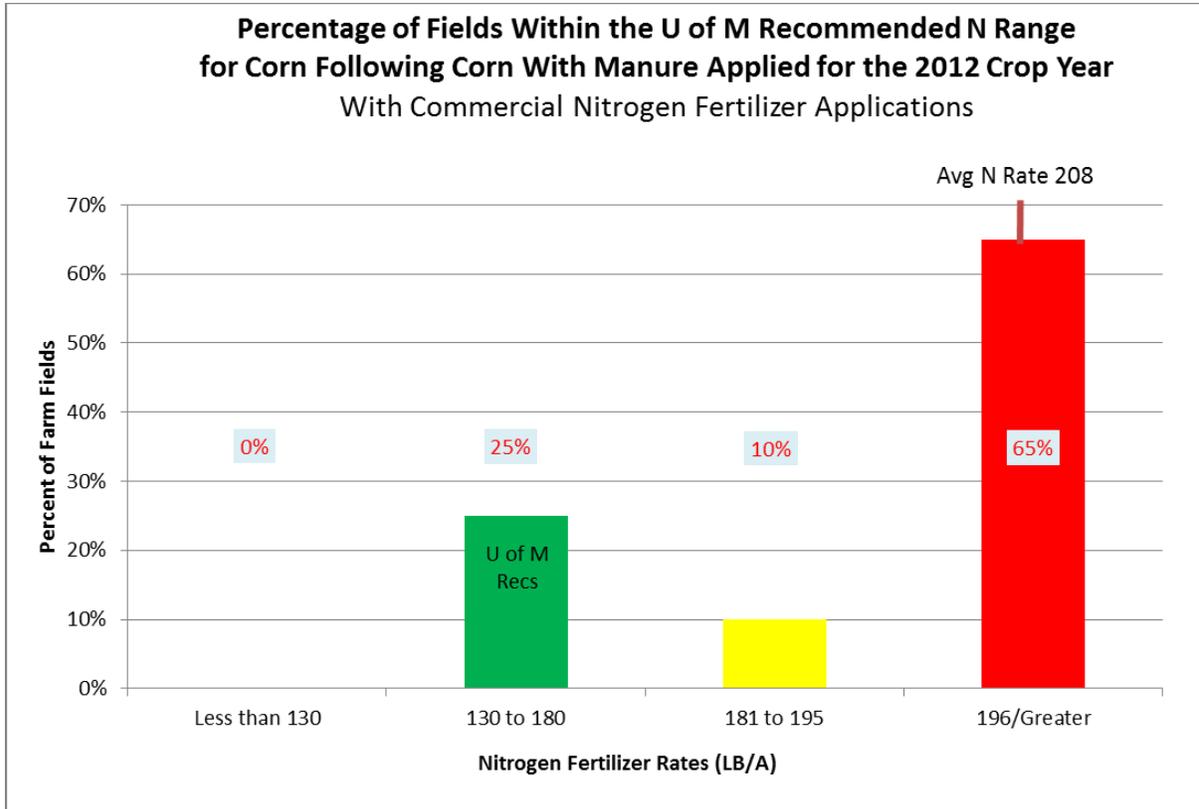


Figure 180 Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 20 fields.

Table 160. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	147	223	175
Avg N Rate LB/A	No Data	163	193	228

Northwestern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the NW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Figure 181 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 161 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 181.

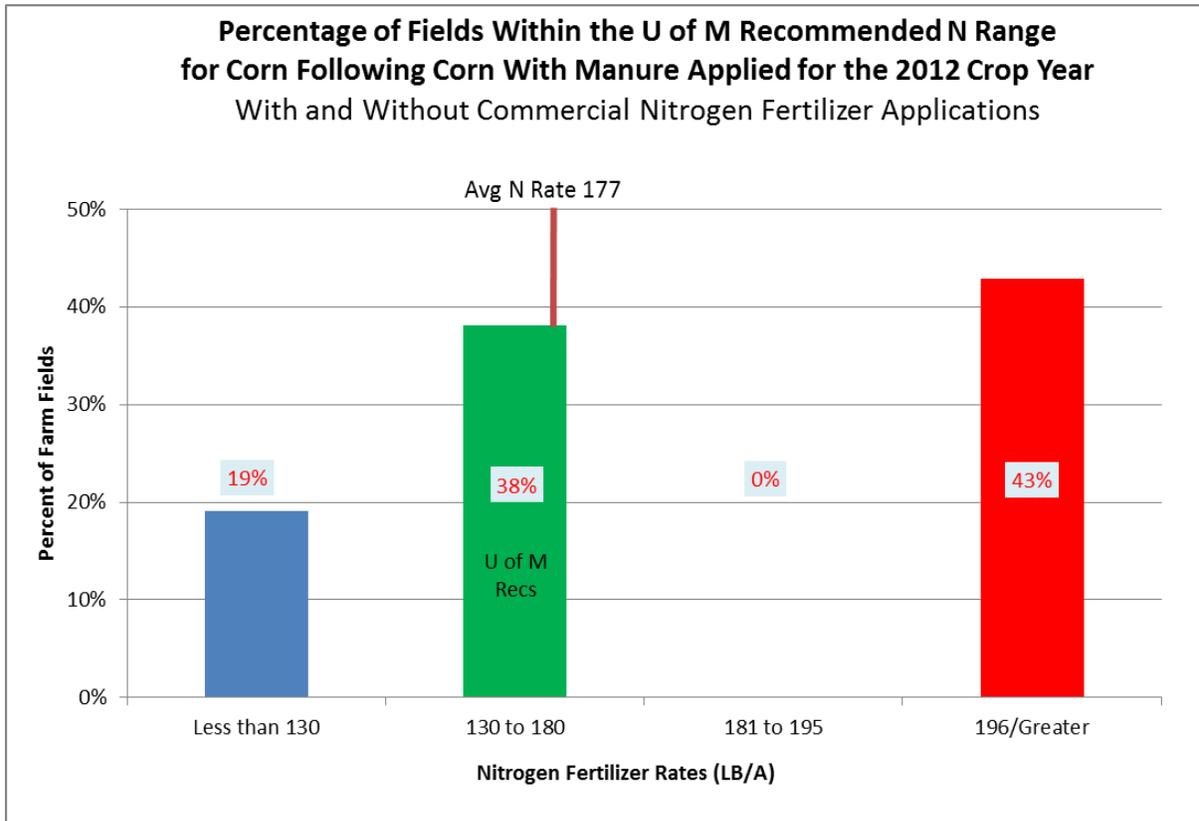


Figure 181. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 21 fields.

Table 161. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	142	148	No Data	148
Avg N Rate LB/A	90	159	No Data	233

Less than five farmers reported planting corn following corn in the IRR BMP region on fields applied with manure and no commercial nitrogen fertilizer.

Figure 182 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 162 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 182.

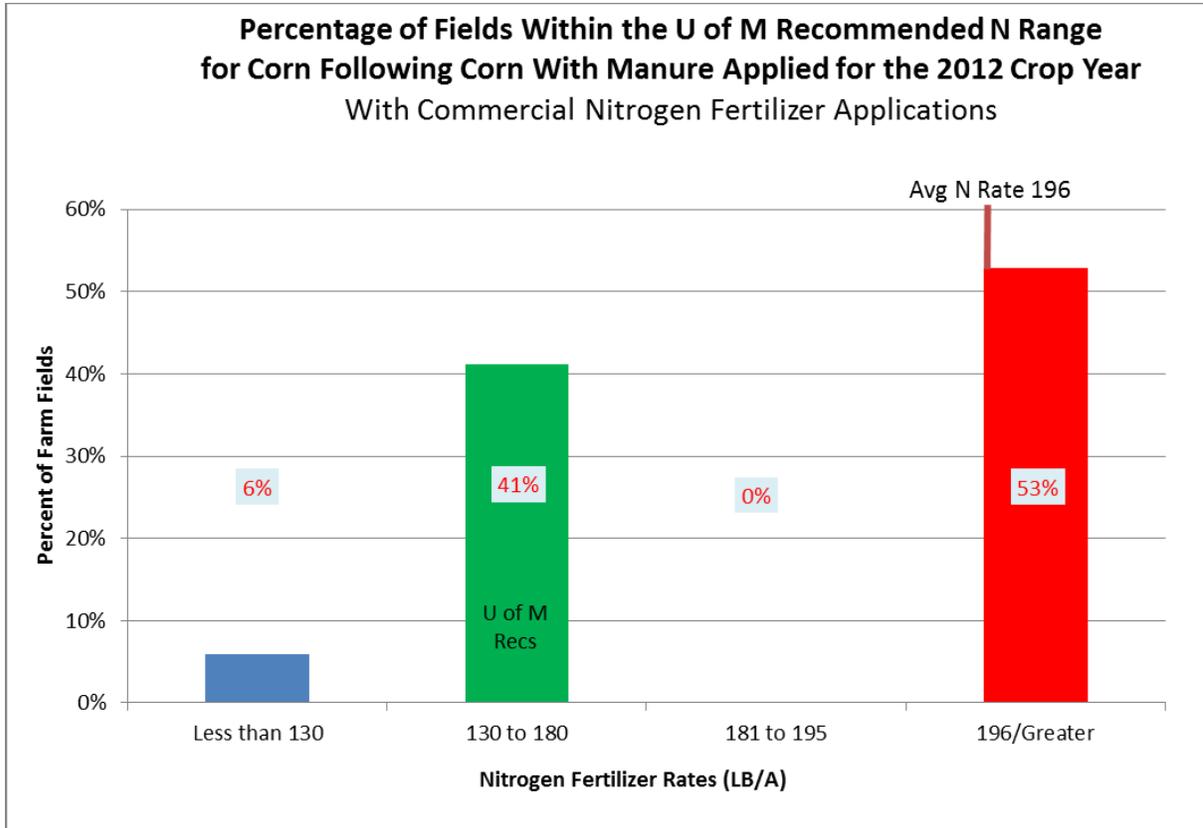


Figure 182. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 17 fields.

Table 162. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2012 crop year in in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	142	No Data	148
Avg N Rate LB/A	123	160	No Data	233

Statewide: Corn Following Corn Following Alfalfa

Figure 183 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with manure⁷ or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 163 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 183.

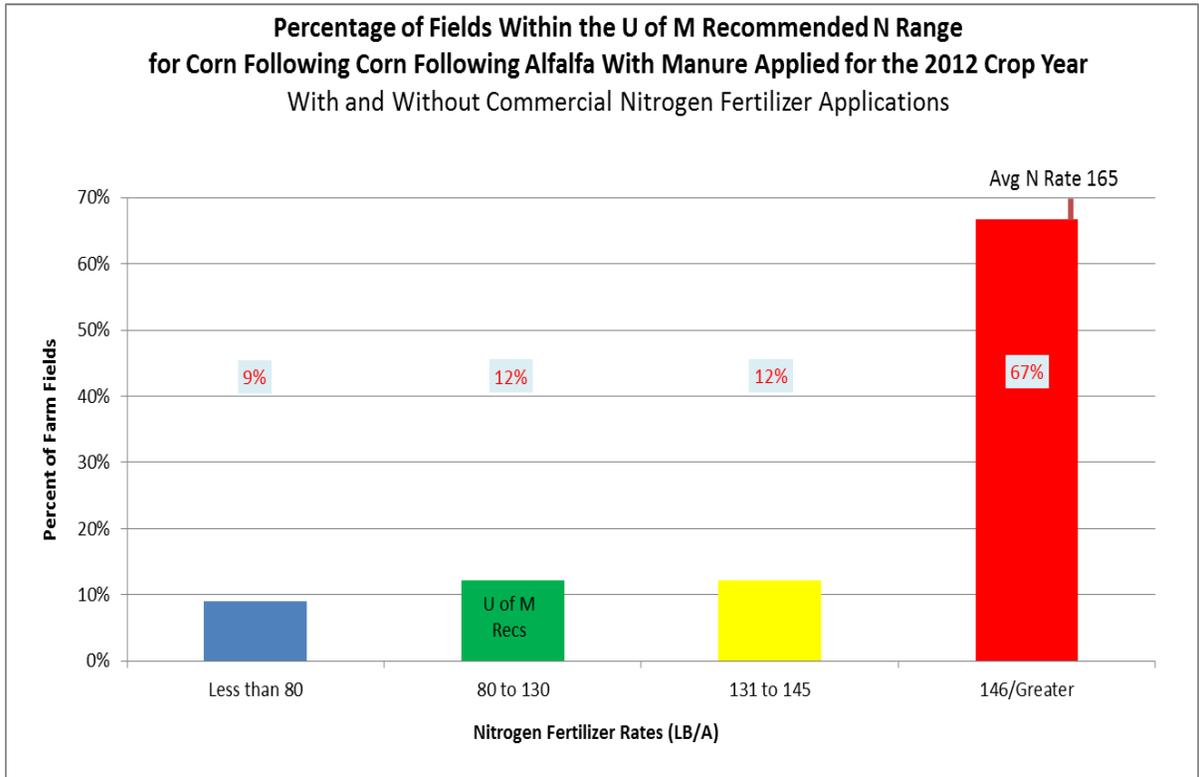


Figure 183. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 33 fields.

Table 163. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	153	135	143	165
Avg N Rate LB/A	52	103	140	196

⁷ Manure is from all manure sources

Figure 184 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 164 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 184.

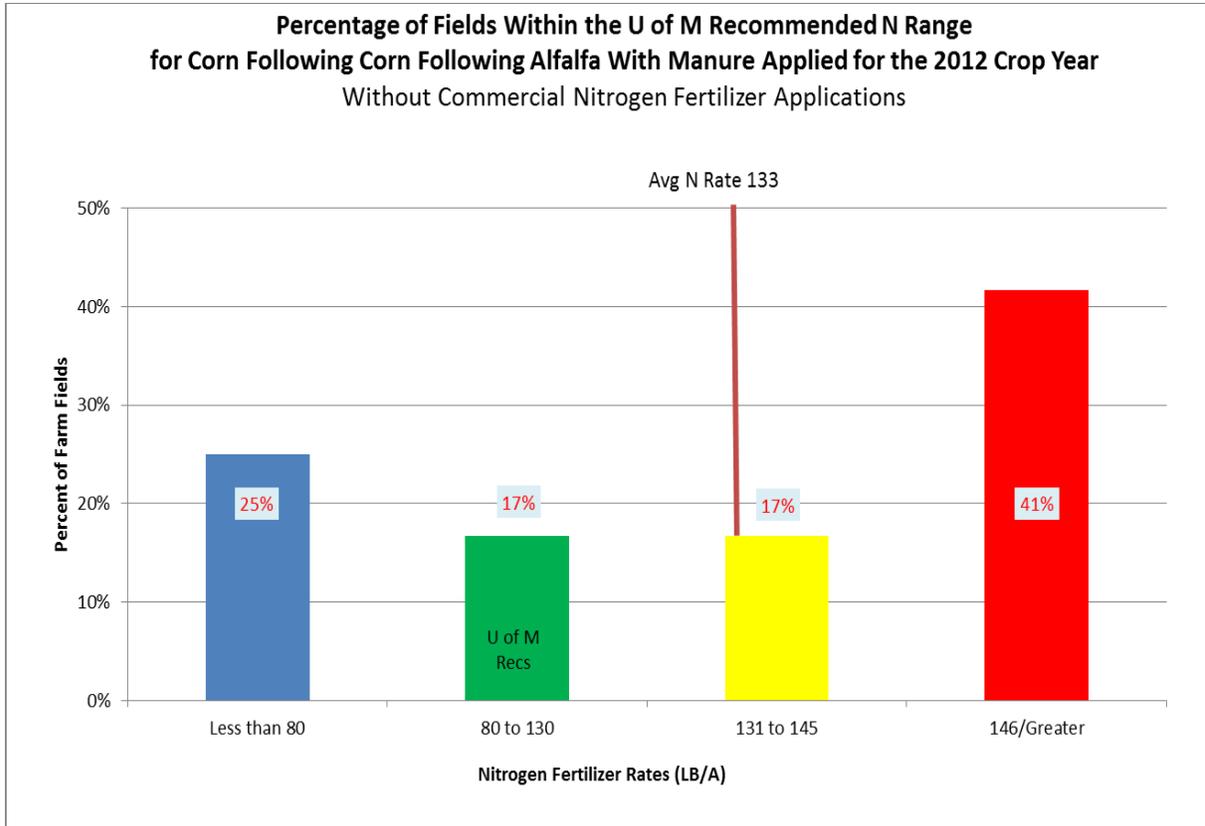


Figure 184. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.

Table 164. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	153	124	145	181
Avg N Rate LB/A	52	85	140	198

Figure 185 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 165 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 185.

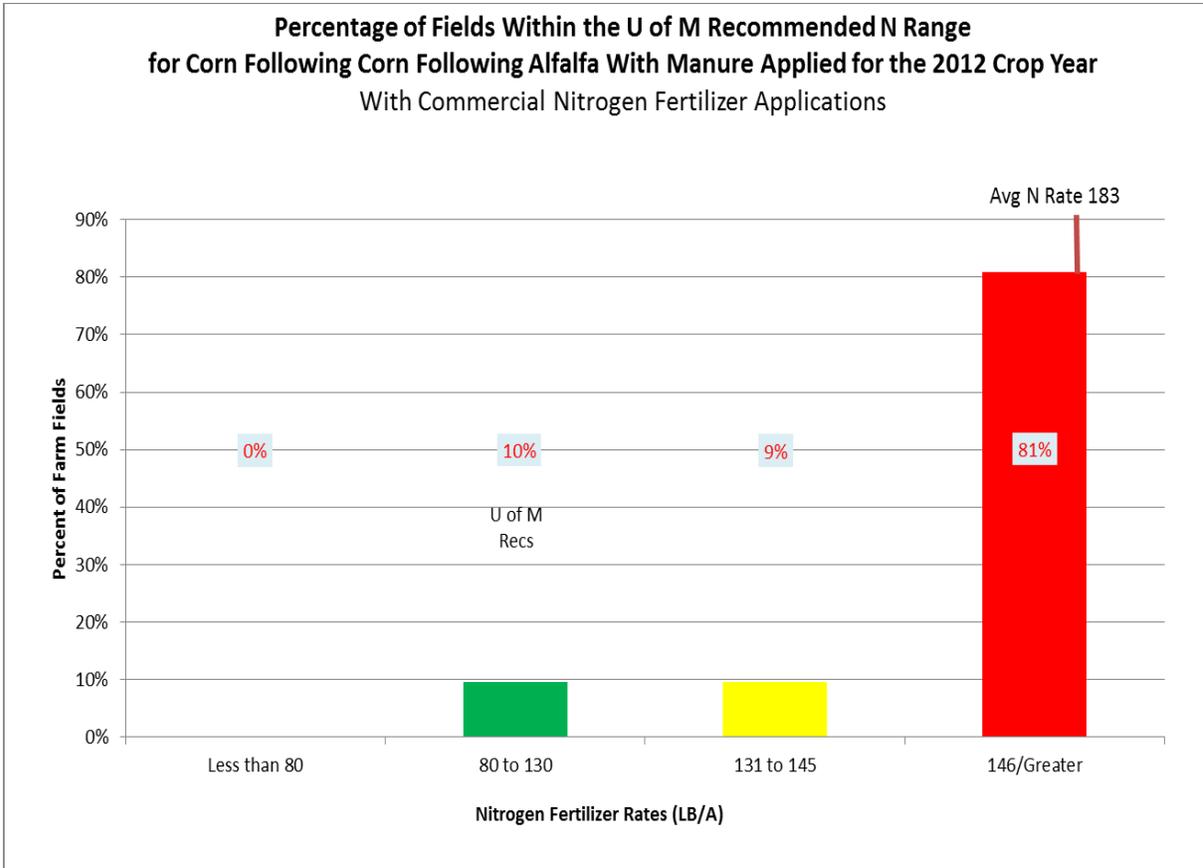


Figure 185. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 21 fields.

Table 165. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	146	141	160
Avg N Rate LB/A	No Data	120	139	196

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 186 details the distribution of nitrogen rates in the SE BMP region for corn following corn following alfalfa applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 166 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 186.

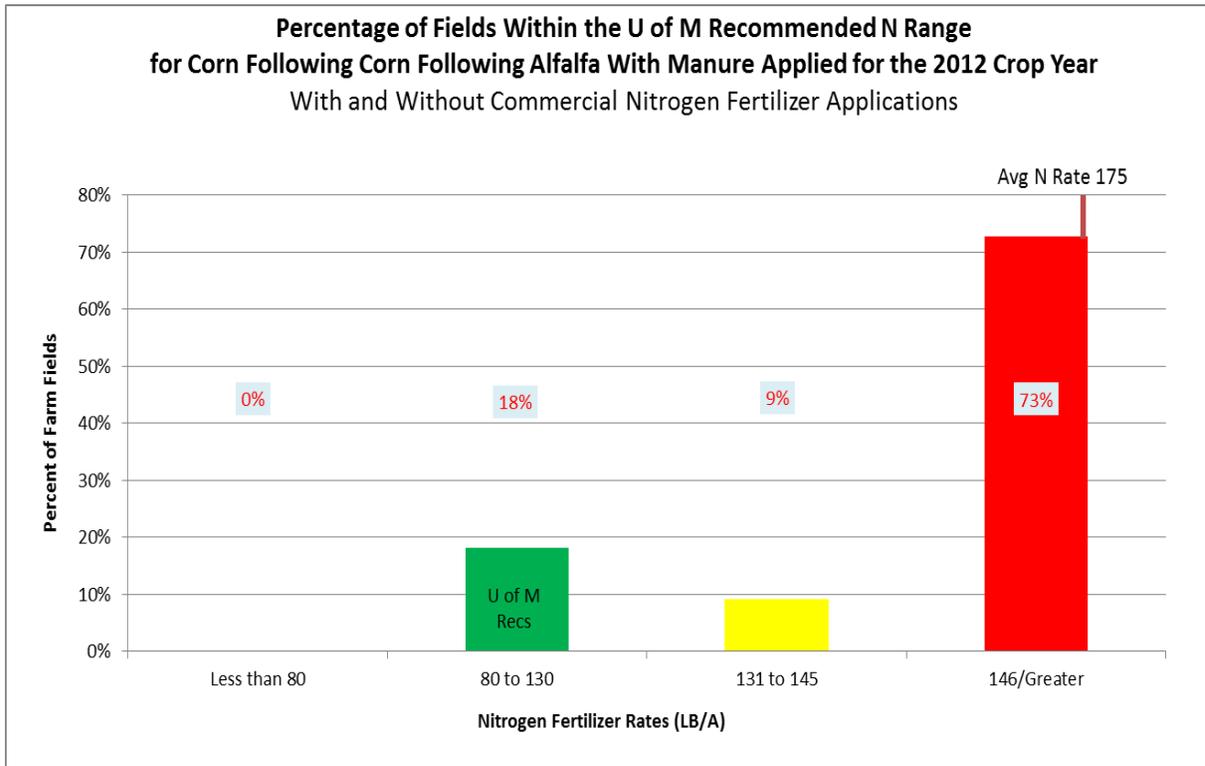


Figure 186. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in SE BMP region for 2012: 11 fields.

Table 166. Nitrogen rates and associated yields of corn following corn following alfalfa fields applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	146	141	160
Avg N Rate LB/A	No Data	120	139	196

Less than five farmers reported planting corn following corn following alfalfa in the SE BMP region on fields applied with manure and no commercial nitrogen fertilizer.

Figure 187 details the distribution of nitrogen rates in the SE BMP region for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 167 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 187.

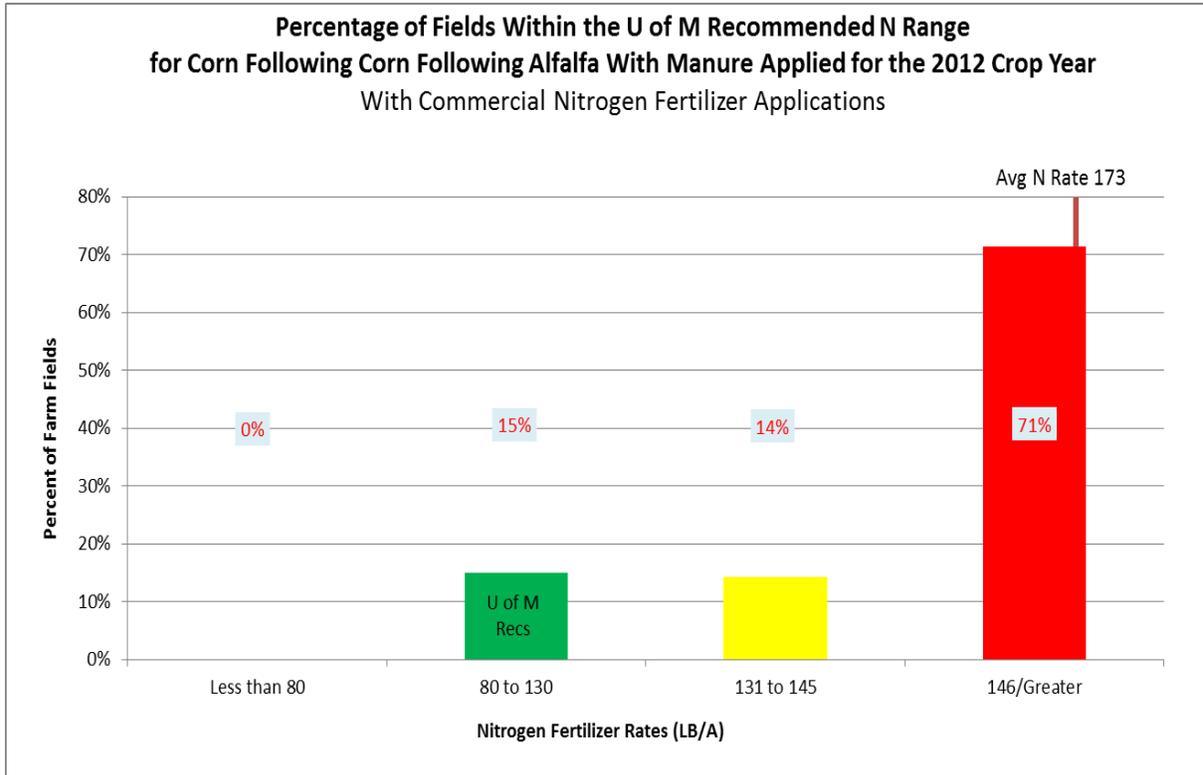


Figure 187. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in SE BMP region for 2012: 7 fields.

Table 167. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	128	182	183
Avg N Rate LB/A	No Data	130	135	189

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Figure 188 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 168 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 188.

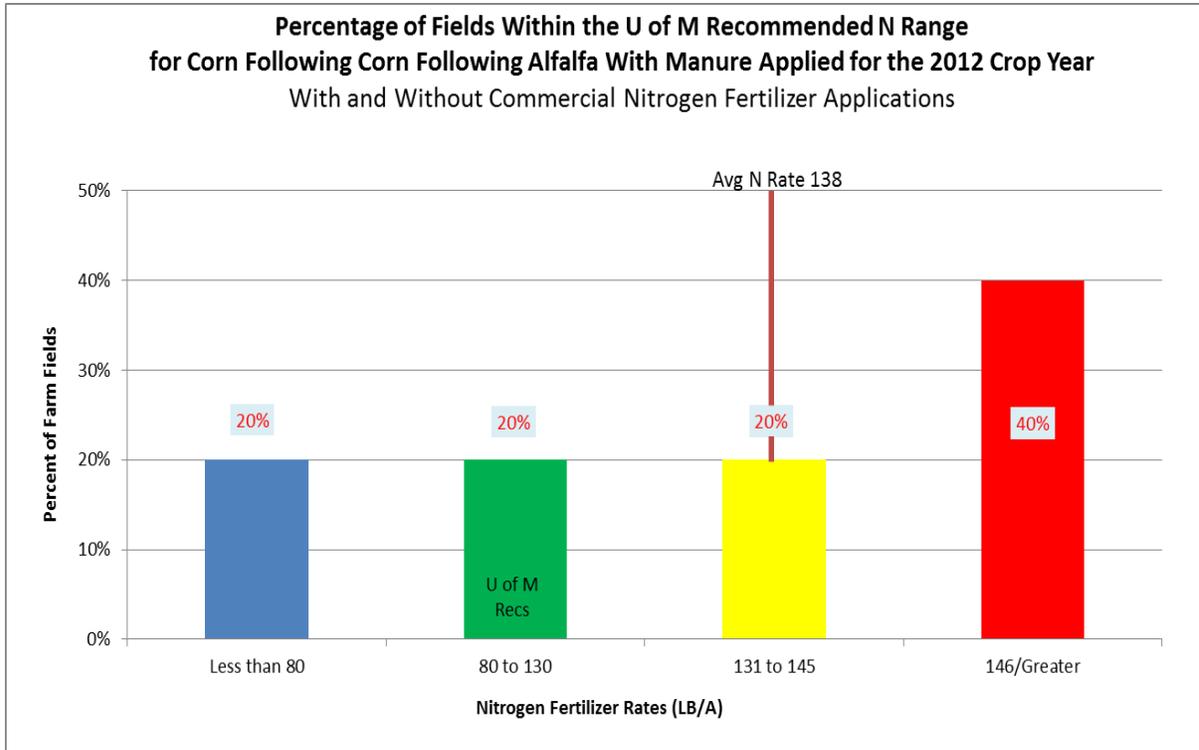


Figure 188. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in SW BMP region for 2012: 5 fields.

Table 168. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	180	164	140	172
Avg N Rate LB/A	50	110	140	195

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region on fields applied:

- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Figure 189 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 169 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 189.

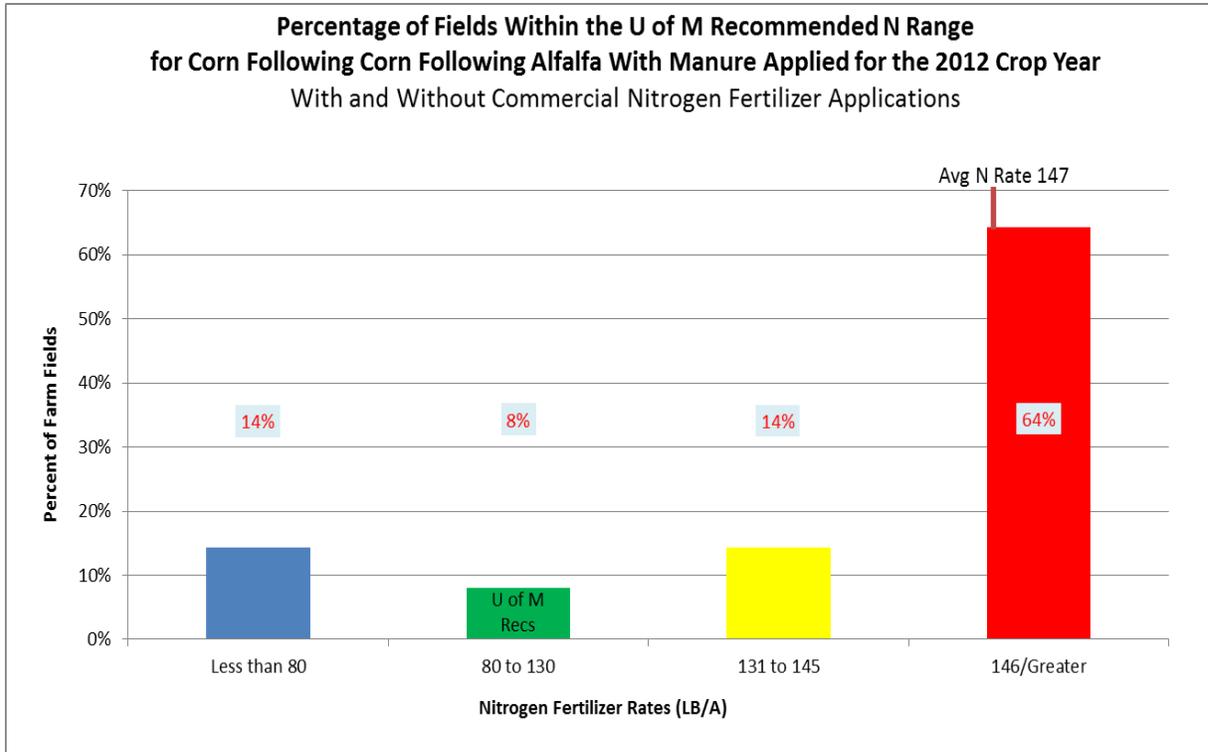


Figure 189. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in IRR BMP region for 2012: 14 fields.

Table 169. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	140	136	125	136
Avg N Rate LB/A	53	90	142	175

Figure 190 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 170 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 190.

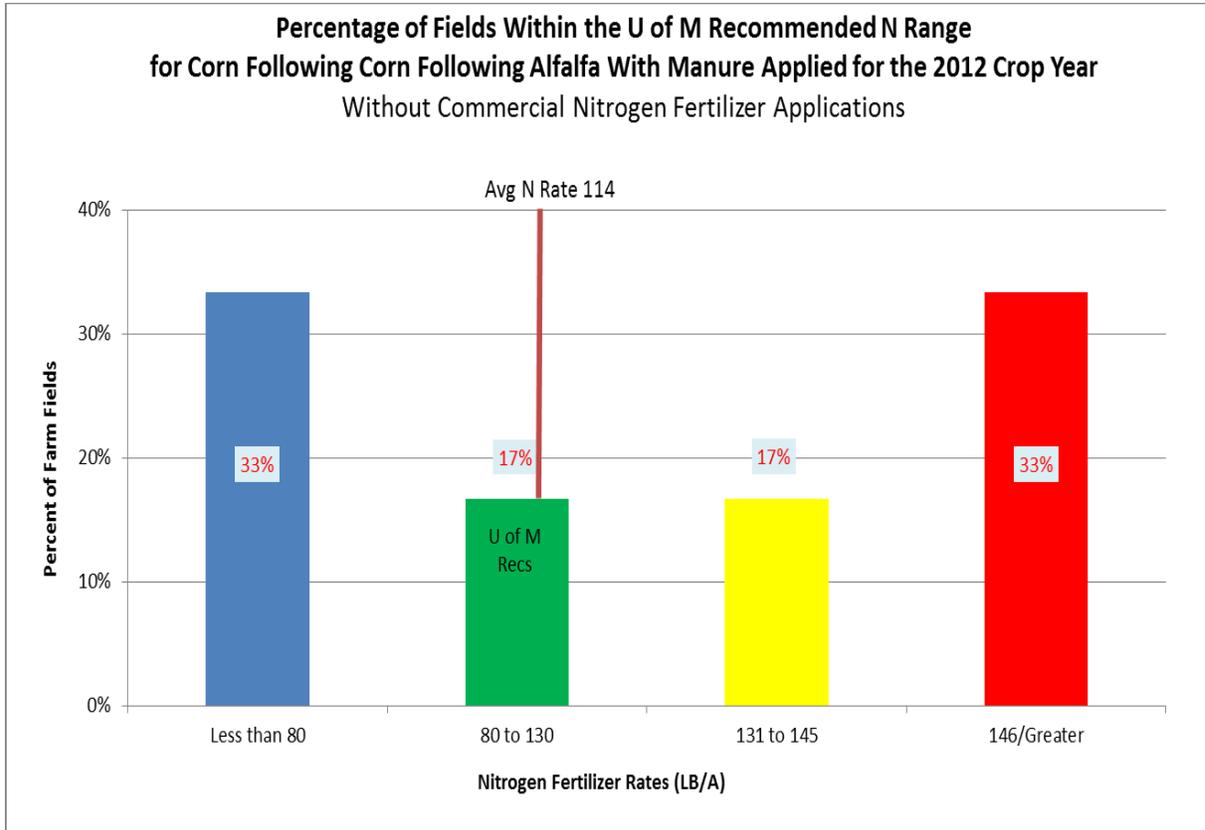


Figure 190. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer in IRR BMP region for 2012: 6 fields.

Table 170. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	140	136	150	142
Avg N Rate LB/A	53	90	140	175

Figure 191 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 171 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 191.

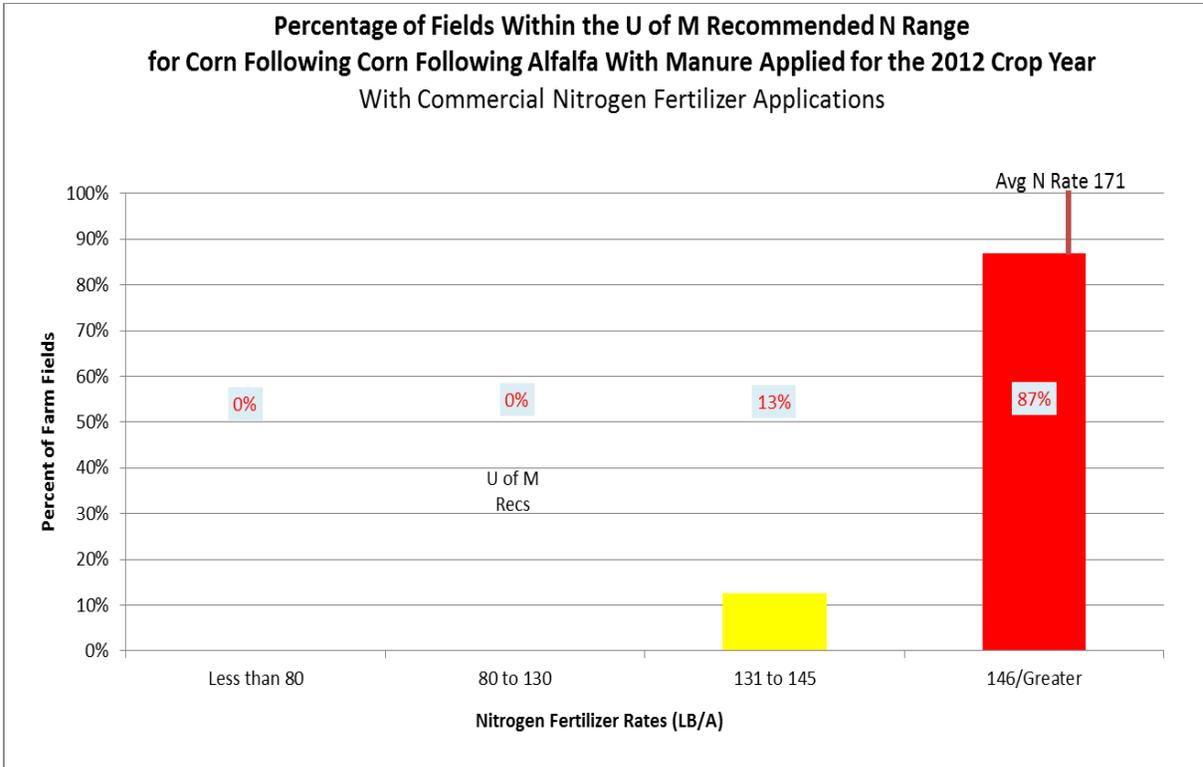


Figure 191. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in IRR BMP region for 2012: 8 fields.

Table 171. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	No Data	100	143
Avg N Rate LB/A	No Data	No Data	143	175

Statewide: Corn Following Alfalfa

Figure 192 details the distribution of nitrogen rates in Minnesota for corn following alfalfa applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 172 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 192.

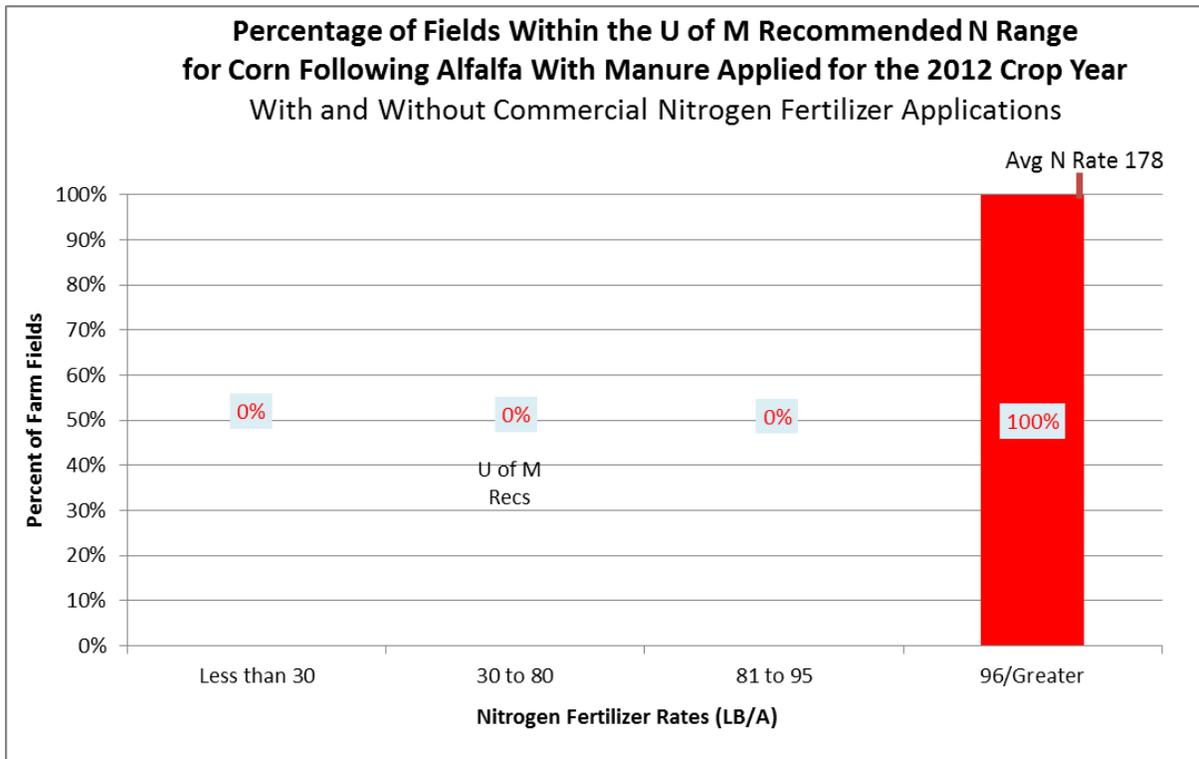


Figure 192. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 15 fields.

Table 172. Nitrogen rates and associated yields for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	171
Avg N Rate LB/A	No Data	No Data	No Data	178

Figure 193 details the distribution of nitrogen rates in Minnesota for corn following alfalfa applied with manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 173 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 193.

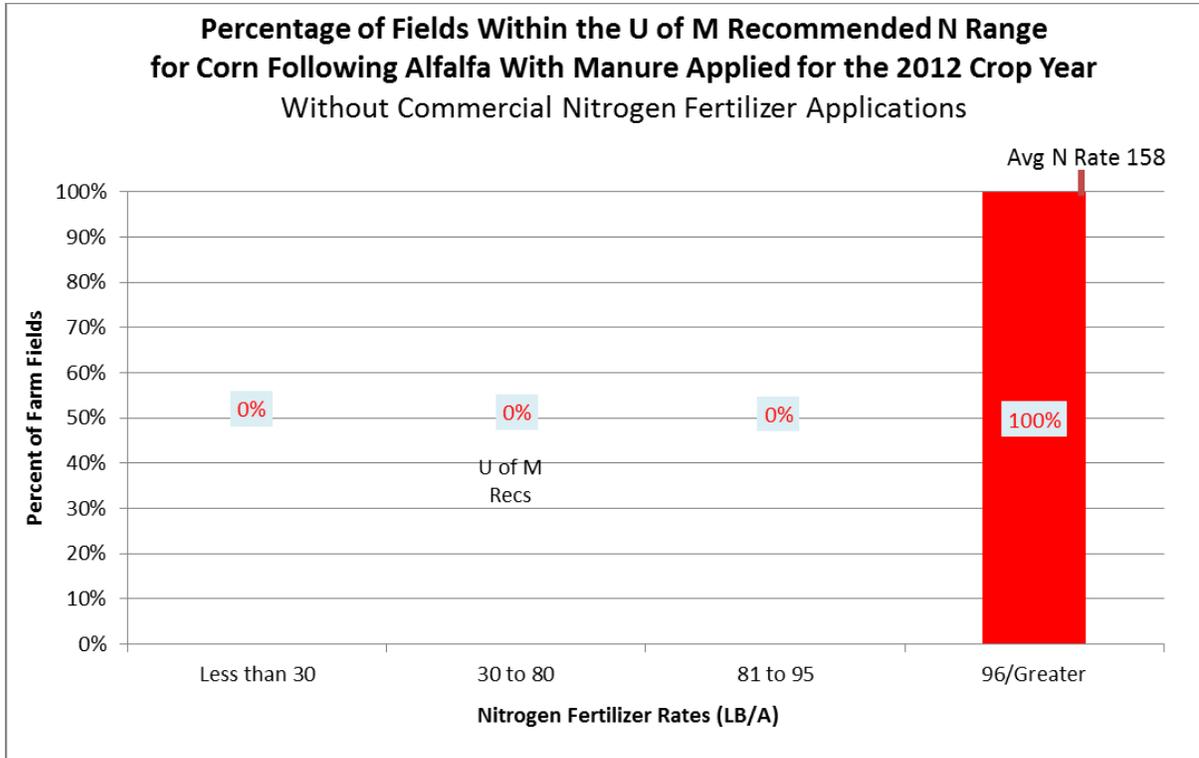


Figure 193. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2012: 7 fields.

Table 173. Nitrogen rates and associated yields for corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	167
Avg N Rate LB/A	No Data	No Data	No Data	158

Figure 194 details the distribution of nitrogen rates in Minnesota for corn following alfalfa applied with manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 174 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 194.

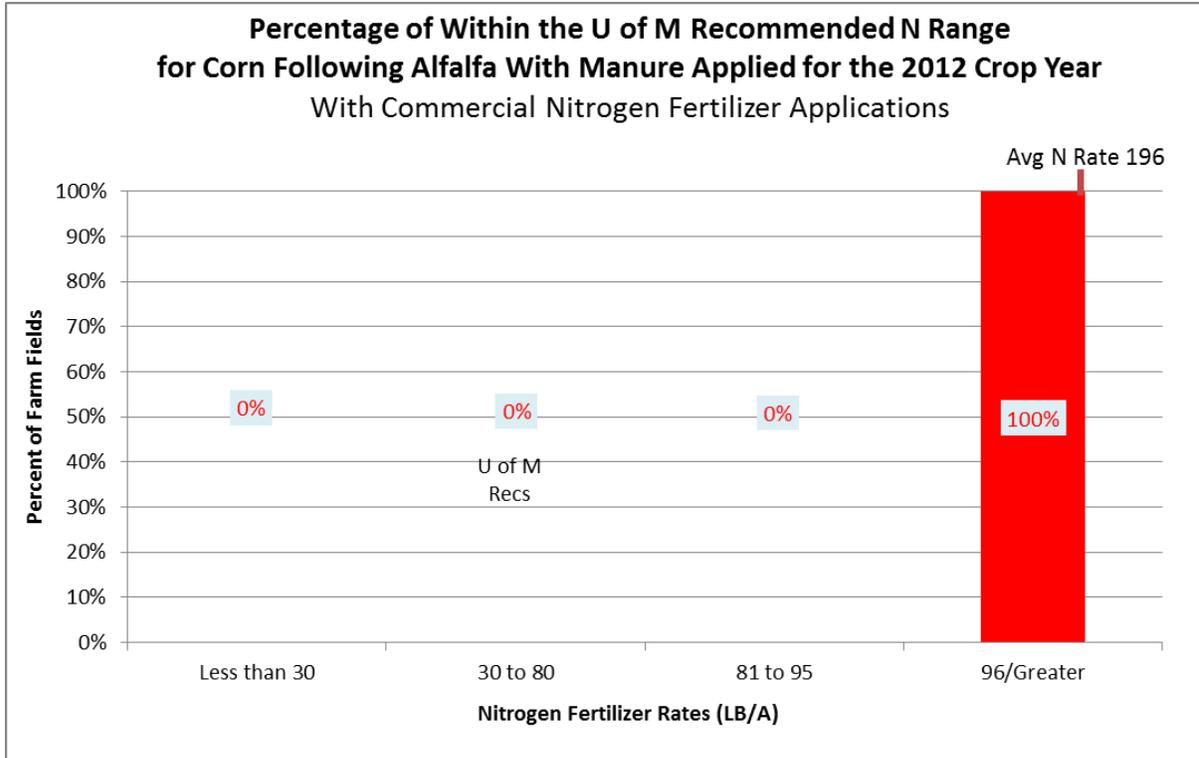


Figure 194. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.

Table 174. Nitrogen rates and associated yields for corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	174
Avg N Rate LB/A	No Data	No Data	No Data	196

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer

Southwestern and West Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Figure 195 details the distribution of nitrogen rates in the IRR BMP region for corn following alfalfa applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 175 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 195.

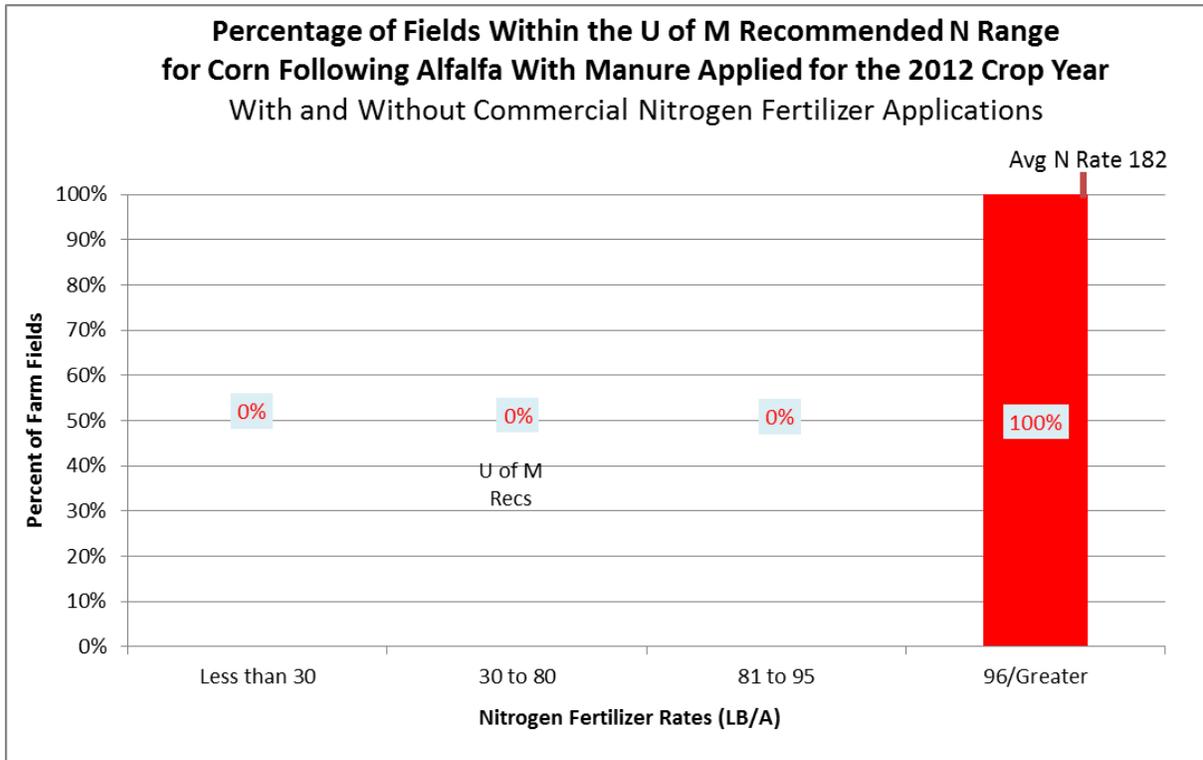


Figure 195. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 8 fields.

Table 175. Nitrogen rates and associated yields for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	160
Avg N Rate LB/A	No Data	No Data	No Data	182

Less than five farmers reported planting corn following alfalfa in the IRR BMP region on fields applied:

- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Statewide: Corn Following Small Grains

Figure 196 details the distribution of nitrogen rates in Minnesota for corn following small grains applied with manure or manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 176 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 196.

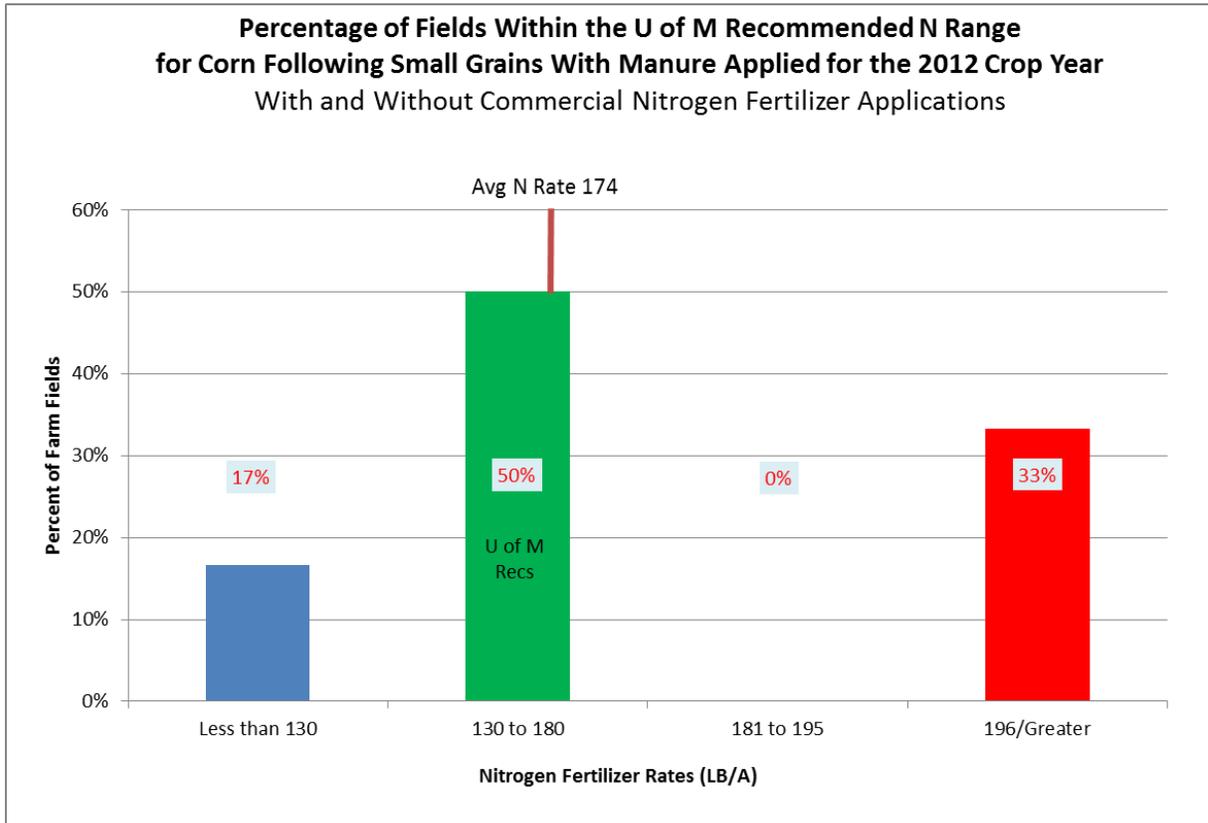


Figure 196. Percentage of fields within the U of M recommended N range for corn following small grains applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 176. Nitrogen rates and associated yields for corn following small grains applied with manure or with manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	153	160	No Data	163
Avg N Rate LB/A	115	166	No Data	215

Less than five farmers reported planting corn following small grains in Minnesota on fields applied:

- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the NW BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the IRR BMP region on fields applied:

- With manure or with manure and commercial nitrogen fertilizer.
- With manure and no commercial nitrogen fertilizer.
- With manure and commercial nitrogen fertilizer.

Manure Applications from Dairy Manure Statewide: Corn Following Soybeans

Figure 197 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 177 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 197.

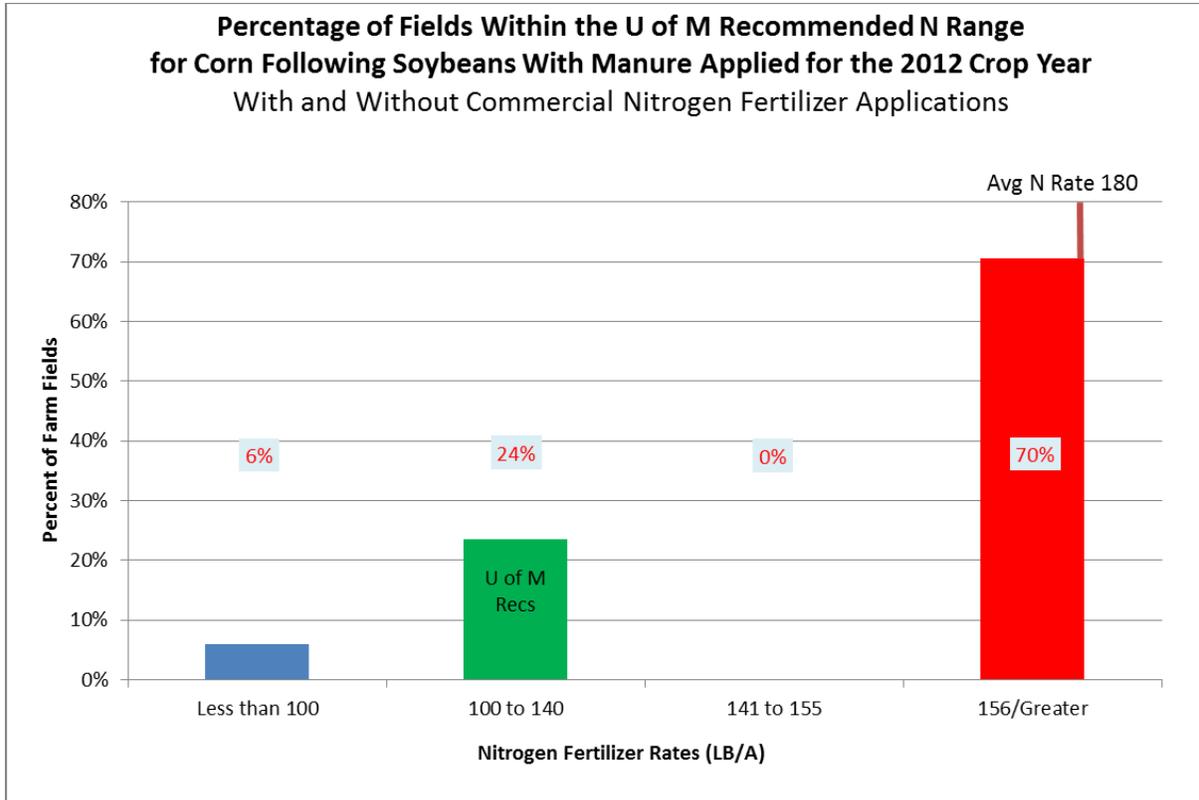


Figure 197. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 17 fields.

Table 177. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	150	175	No Data	173
Avg N Rate LB/A	70	120	No Data	209

Figure 198 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 178 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 198.

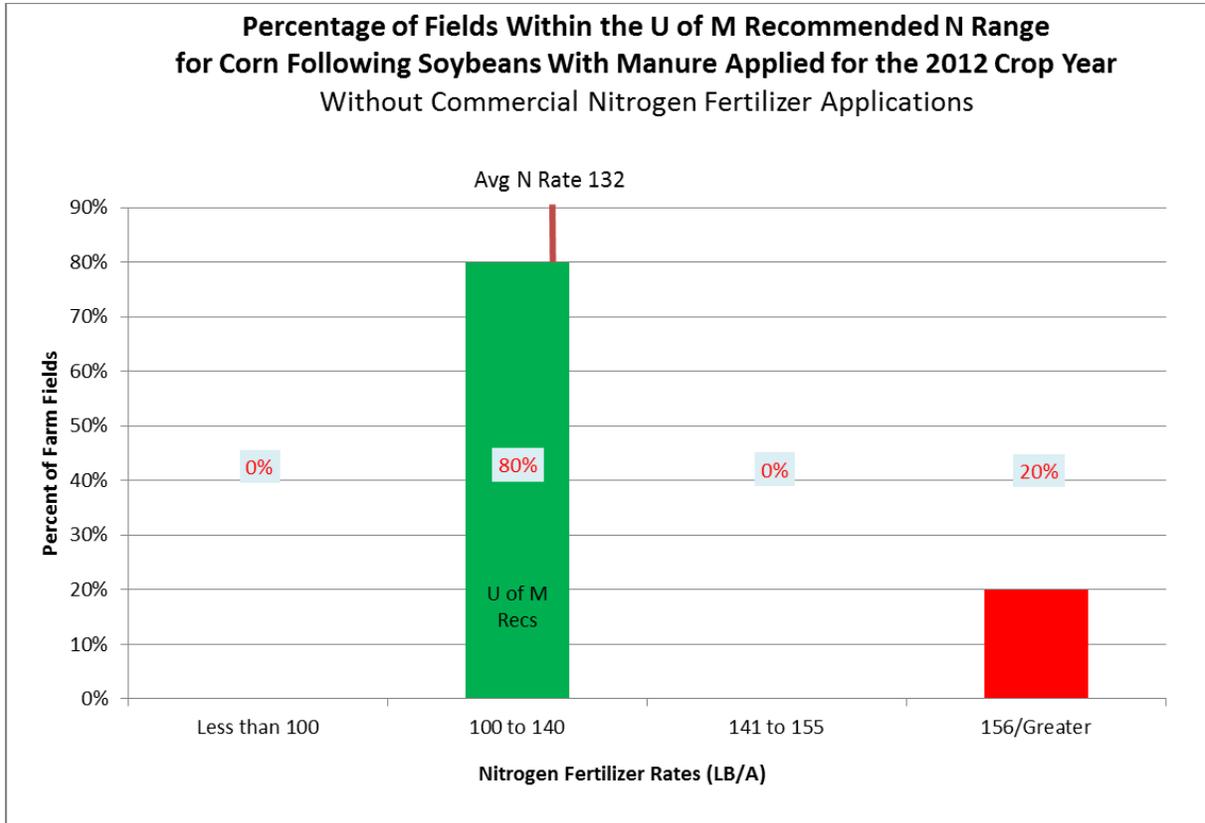


Figure 198. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.

Table 178. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	175	No Data	185
Avg N Rate LB/A	No Data	120	No Data	180

Figure 199 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 179 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 199.

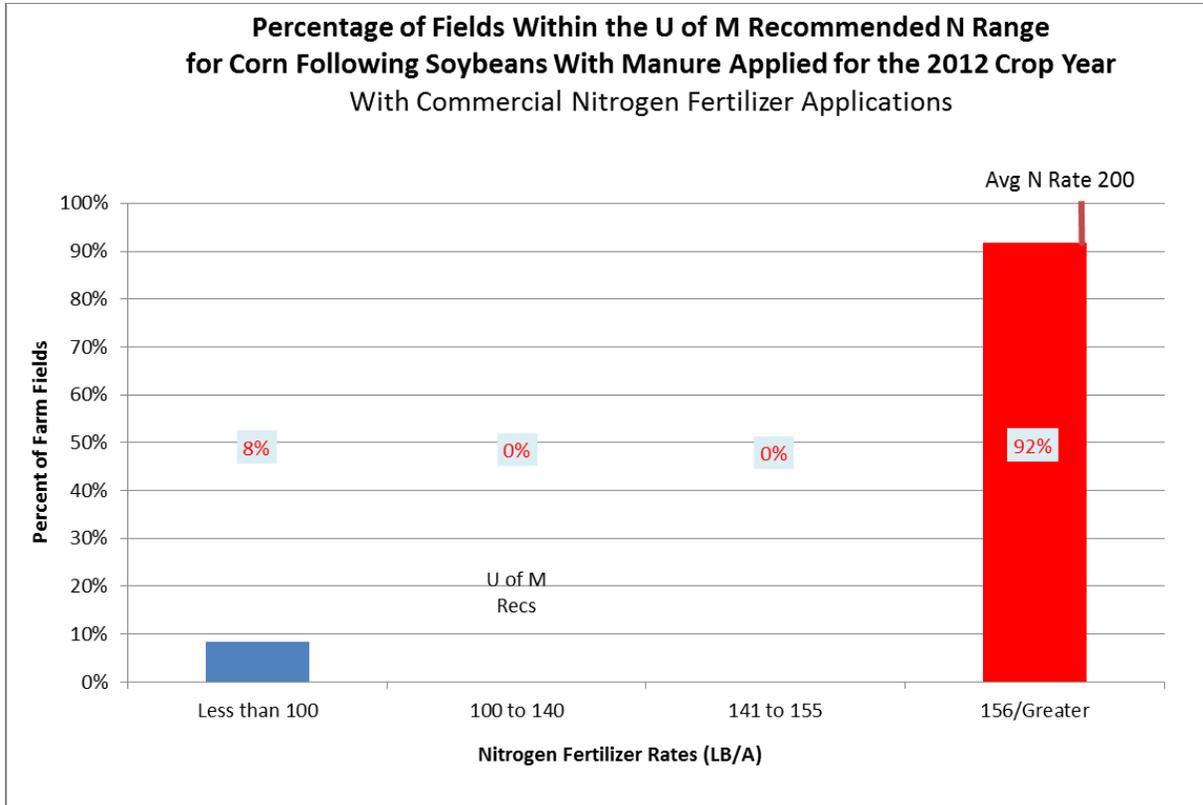


Figure 199. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.

Table 179. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	150	No Data	No Data	172
Avg N Rate LB/A	70	No Data	No Data	212

Southeastern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SE BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Soybeans

Figure 200 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 180 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 200.

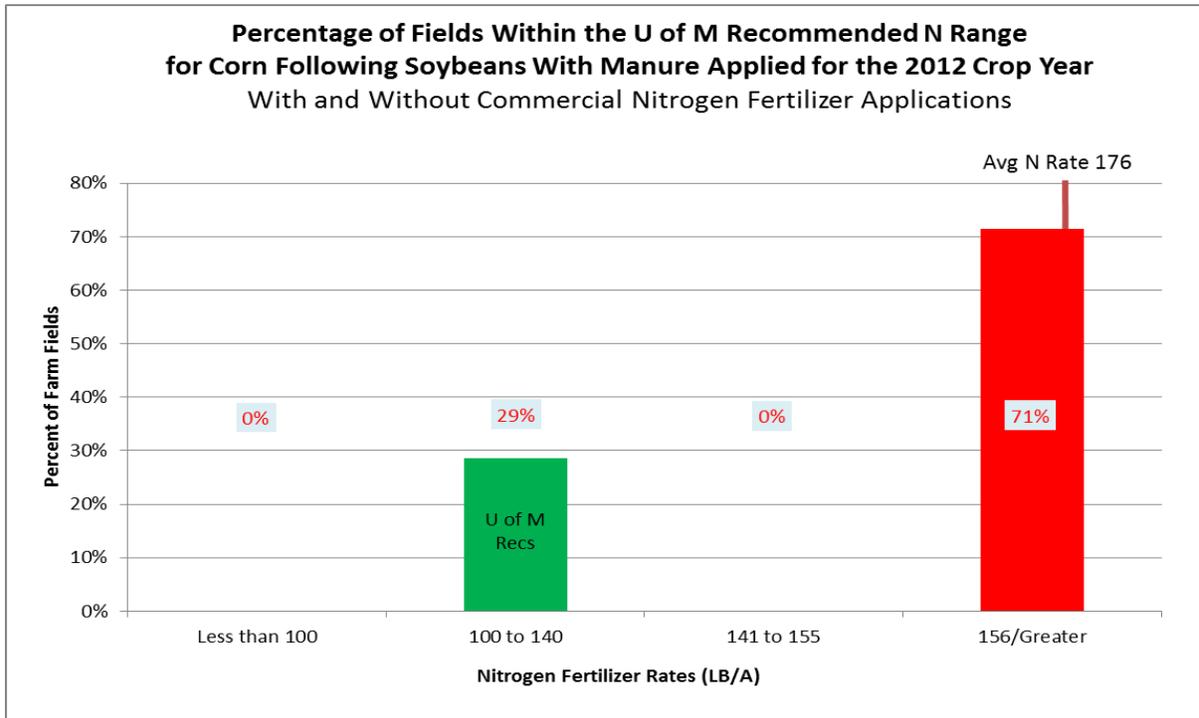


Figure 200. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SC BMP for 2012: 7 fields.

Table 180. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	182	No Data	181
Avg N Rate LB/A	No Data	123	No Data	197

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils: Corn Following Soybeans

Figure 201 details the distribution of nitrogen rates in the IRR BMP region for corn following soybeans applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 181 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 201.

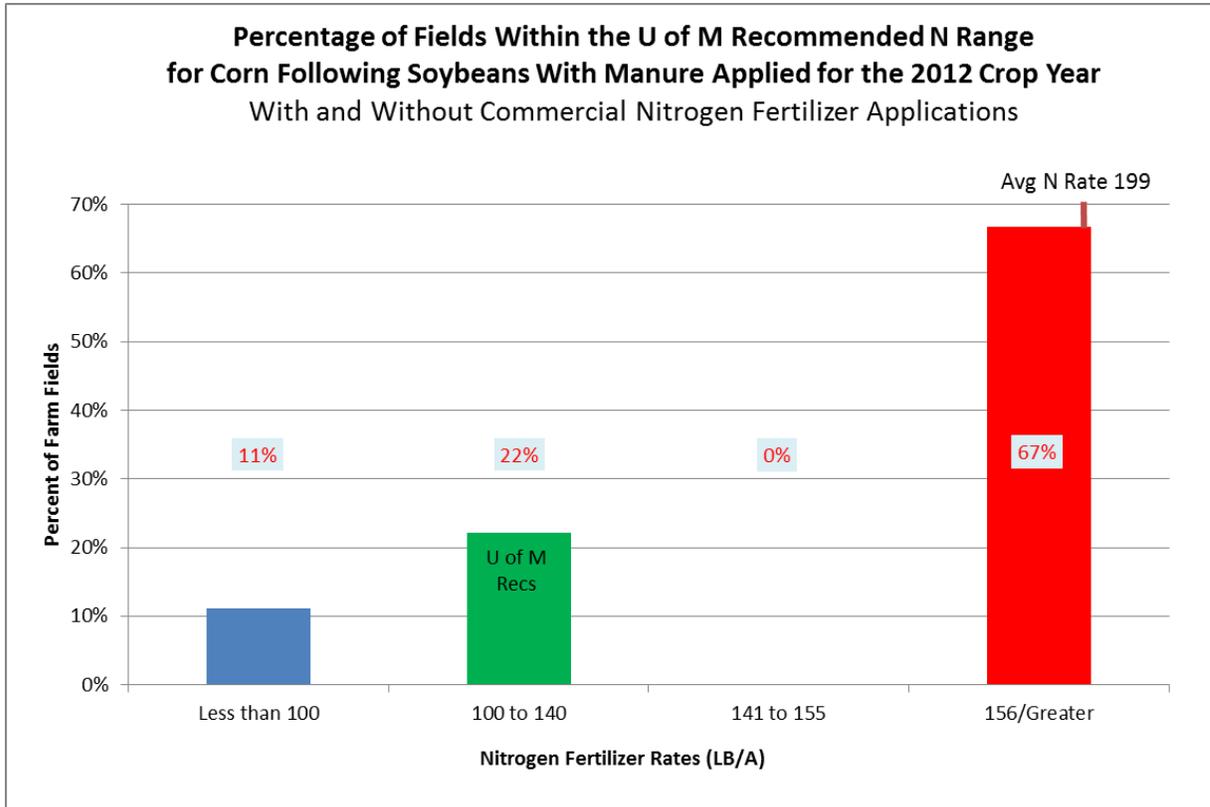


Figure 201. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2012: 9 fields.

Table 181. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	150	160	No Data	167
Avg N Rate LB/A	70	130	No Data	244

Less than five farmers reported planting corn following soybeans in the IRR BMP region on fields applied with dairy manure and no commercial nitrogen fertilizer.

Figure 202 details the distribution of nitrogen rates in the IRR BMP region for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 182 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 202.

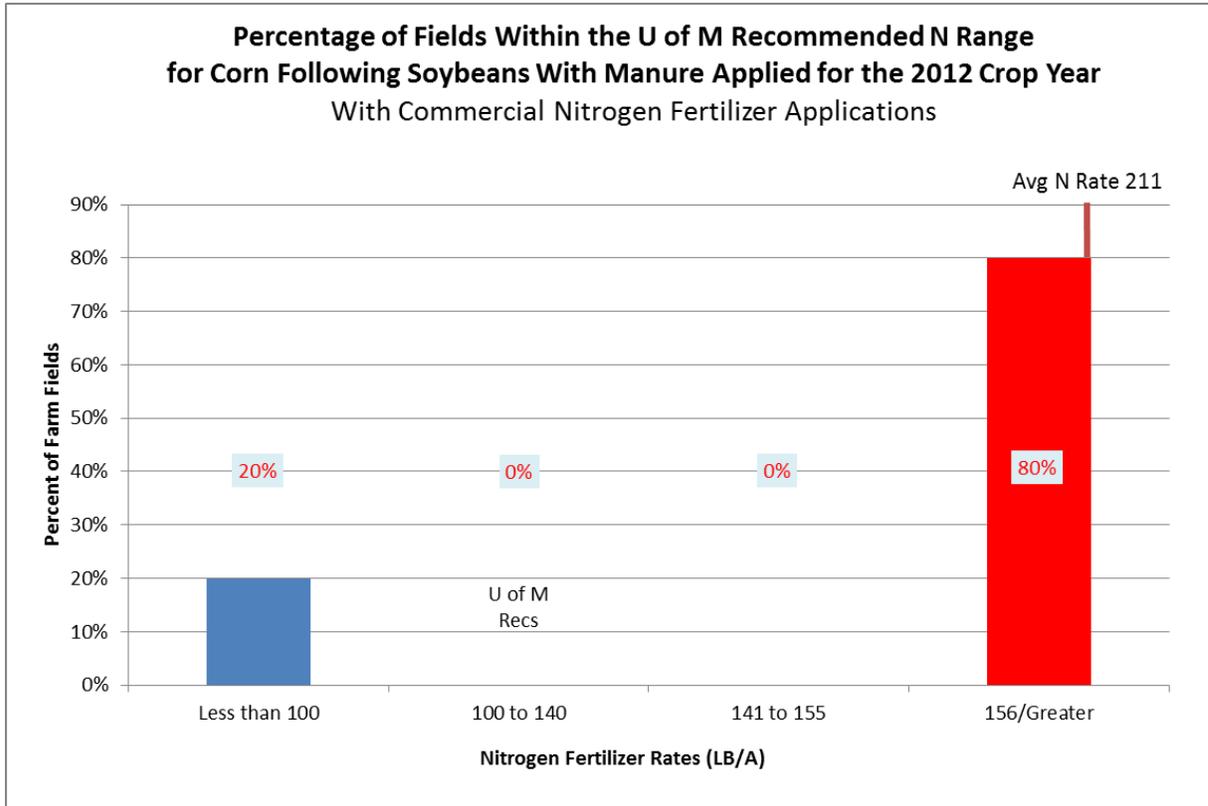


Figure 202. . Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2012: 5 fields.

Table 182. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	146/Greater LB/A
Avg Bu./Acre	150	No Data	No Data	166
Avg N Rate LB/A	70	No Data	No Data	246

Statewide: Corn Following Corn

Figure 203 details the distribution of nitrogen rates in Minnesota for corn following corn applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 183 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 203.

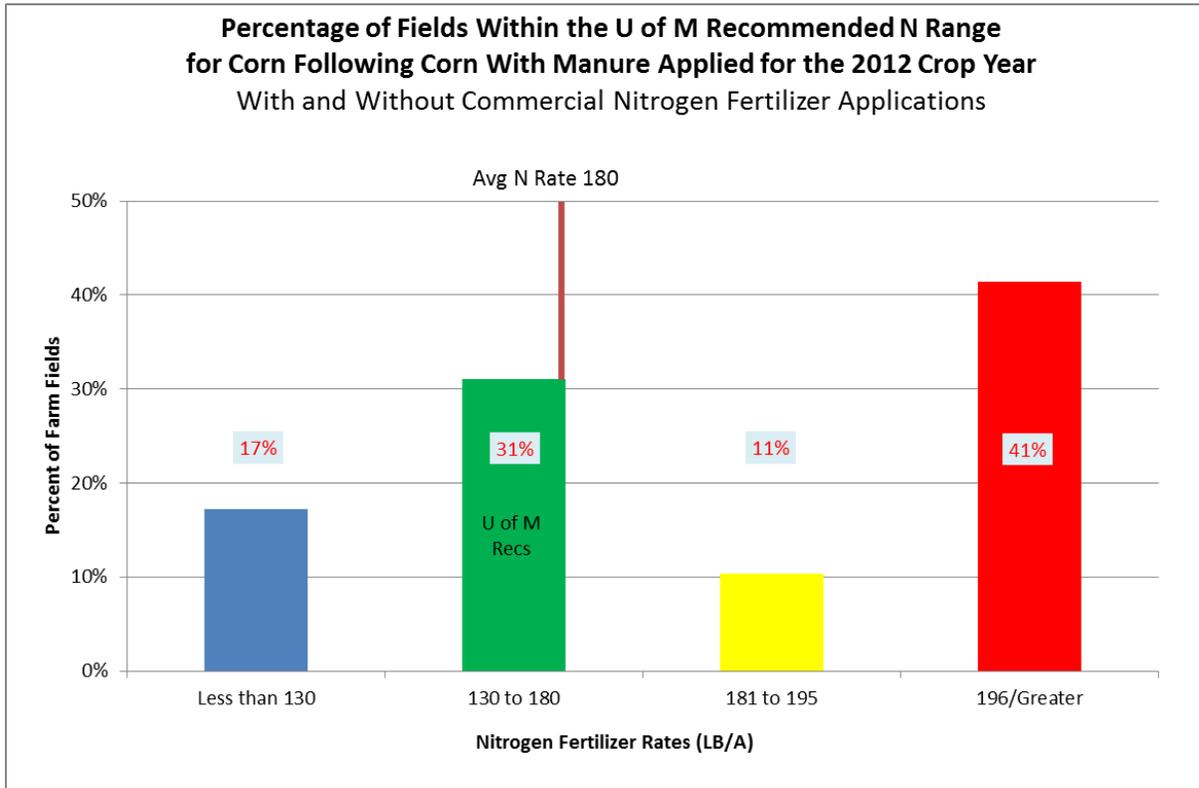


Figure 203. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 29 fields.

Table 183. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	133	181	180	186
Avg N Rate LB/A	104	161	190	233

Figure 204 details the distribution of nitrogen rates in Minnesota for corn following corn applied with dairy manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 184 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 204.

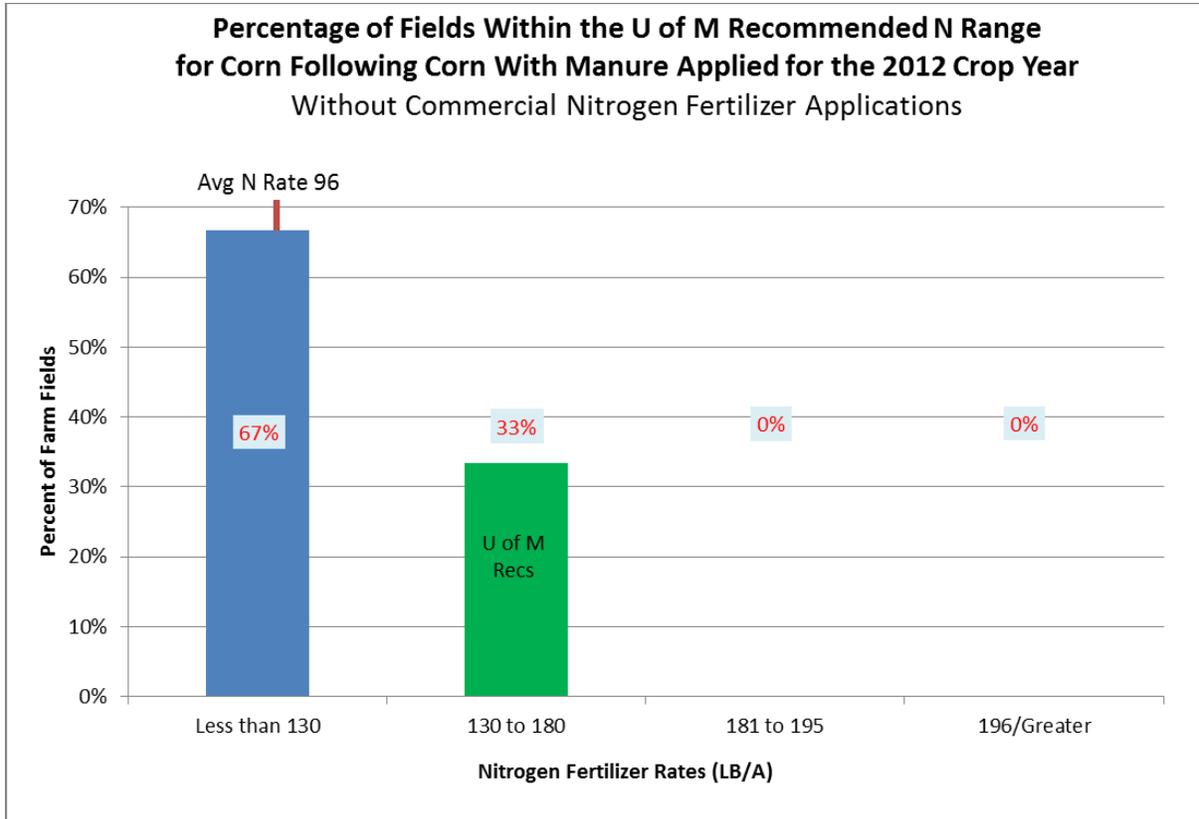


Figure 204. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 184. Nitrogen rates and associated yields for corn following corn applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	167	158	No Data	No Data
Avg N Rate LB/A	75	139	No Data	No Data

Figure 205 details the distribution of nitrogen rates in Minnesota for corn following corn applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 185 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 205.

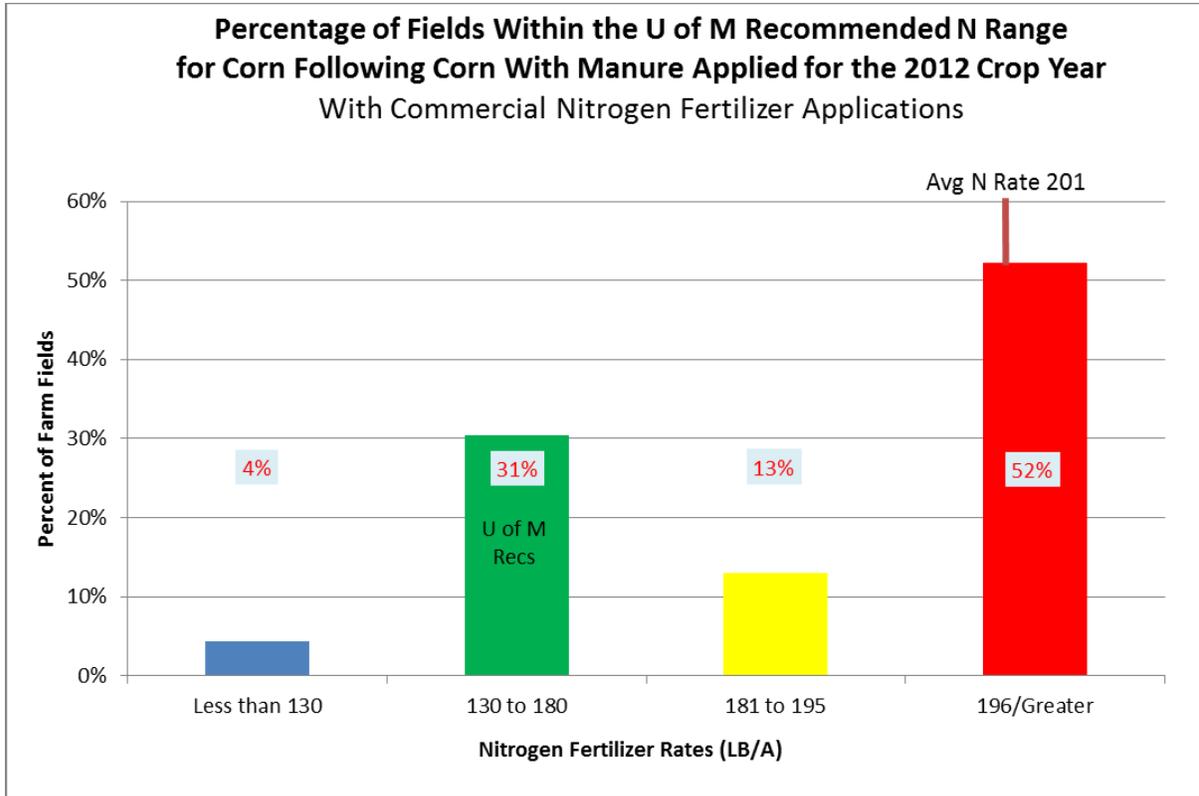


Figure 205. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 23 fields.

Table 185. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	154	217	160
Avg N Rate LB/A	123	164	190	233

Southeastern Region: Corn Following Corn

Figure 206 details the distribution of nitrogen rates in the SE BMP region for corn following corn applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 186 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 206.

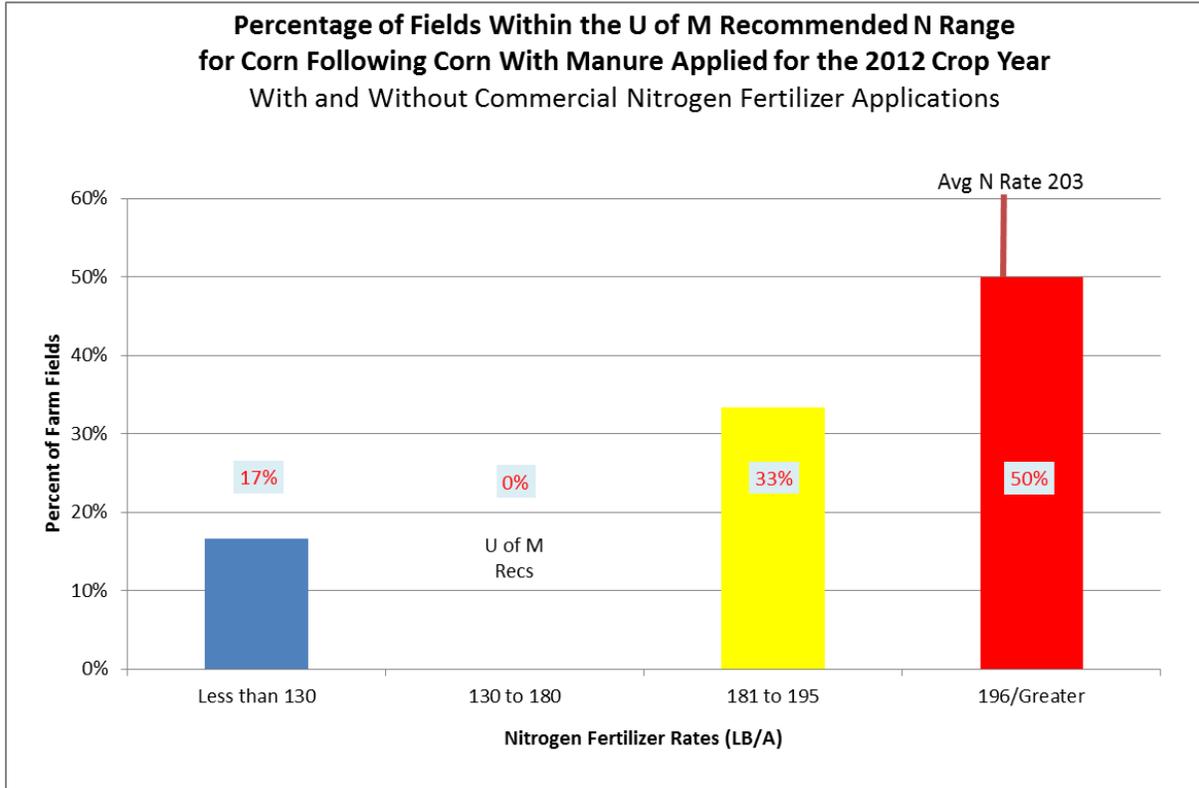


Figure 206. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 7 fields.

Table 186. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	172	No Data	213	185
Avg N Rate LB/A	40	No Data	190	265

Less than five farmers reported planting corn following corn in the SE BMP region on fields applied with dairy manure and no commercial nitrogen fertilizer.

Figure 207 details the distribution of nitrogen rates in the SE BMP region for corn following corn applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 187 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 207.

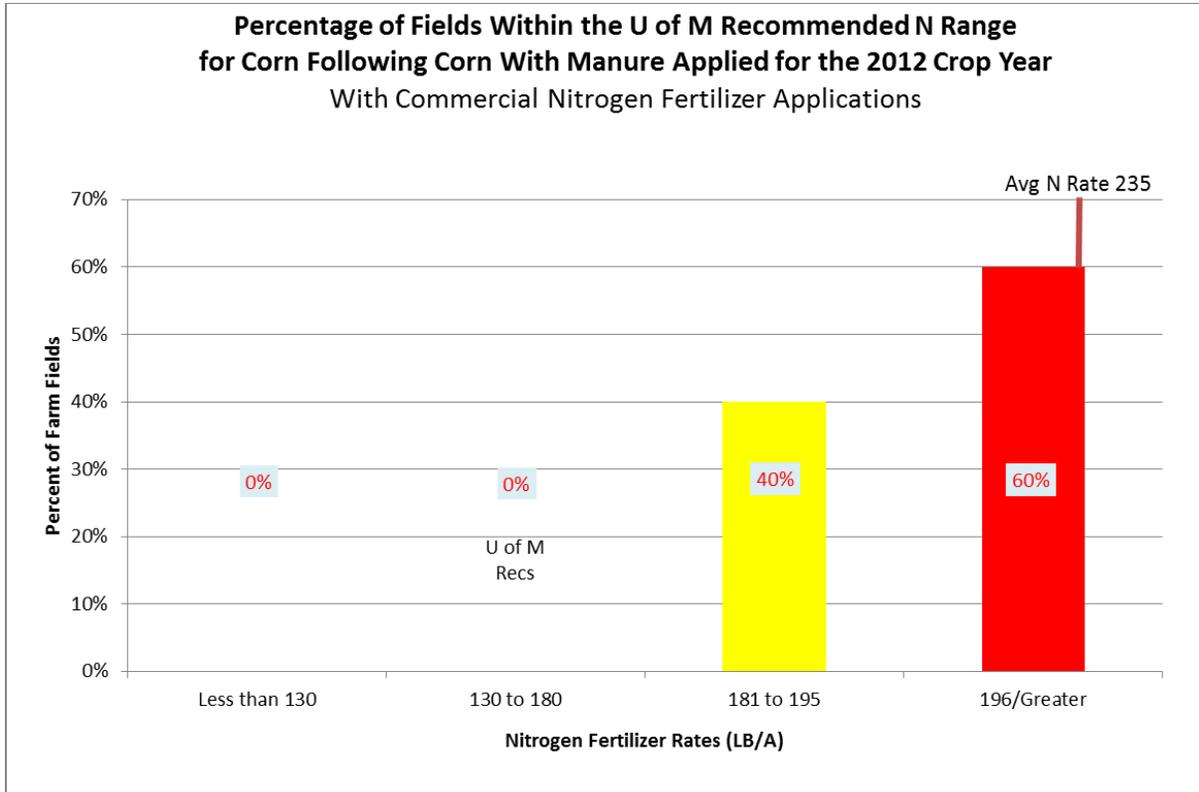


Figure 207. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.

Table 187. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	No Data	213	185
Avg N Rate LB/A	No Data	No Data	190	265

South Central Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SC BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn

Figure 208 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 188 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 208.

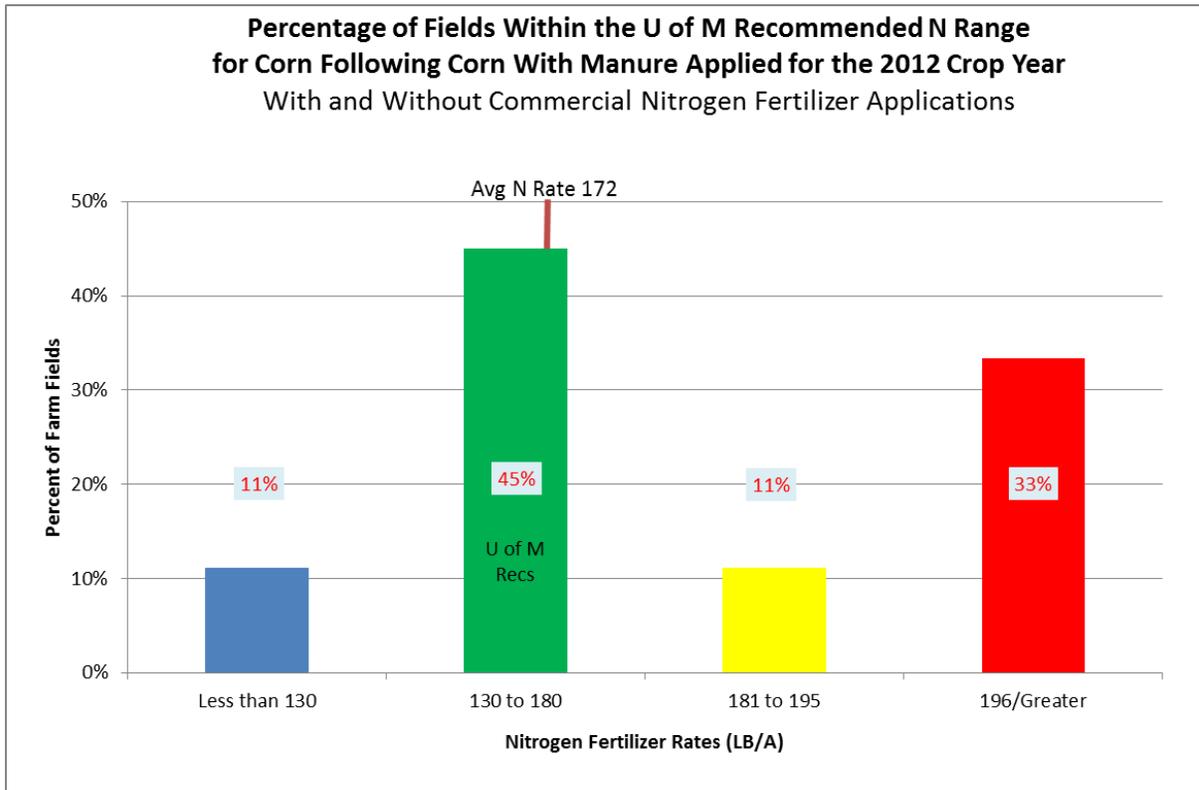


Figure 208. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.

Table 188. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	176	154	225	167
Avg N Rate LB/A	100	148	190	221

Less than five farmers reported planting corn following corn in the SW BMP region on fields applied with dairy manure and no commercial nitrogen fertilizer.

Figure 209 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 189 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 209.

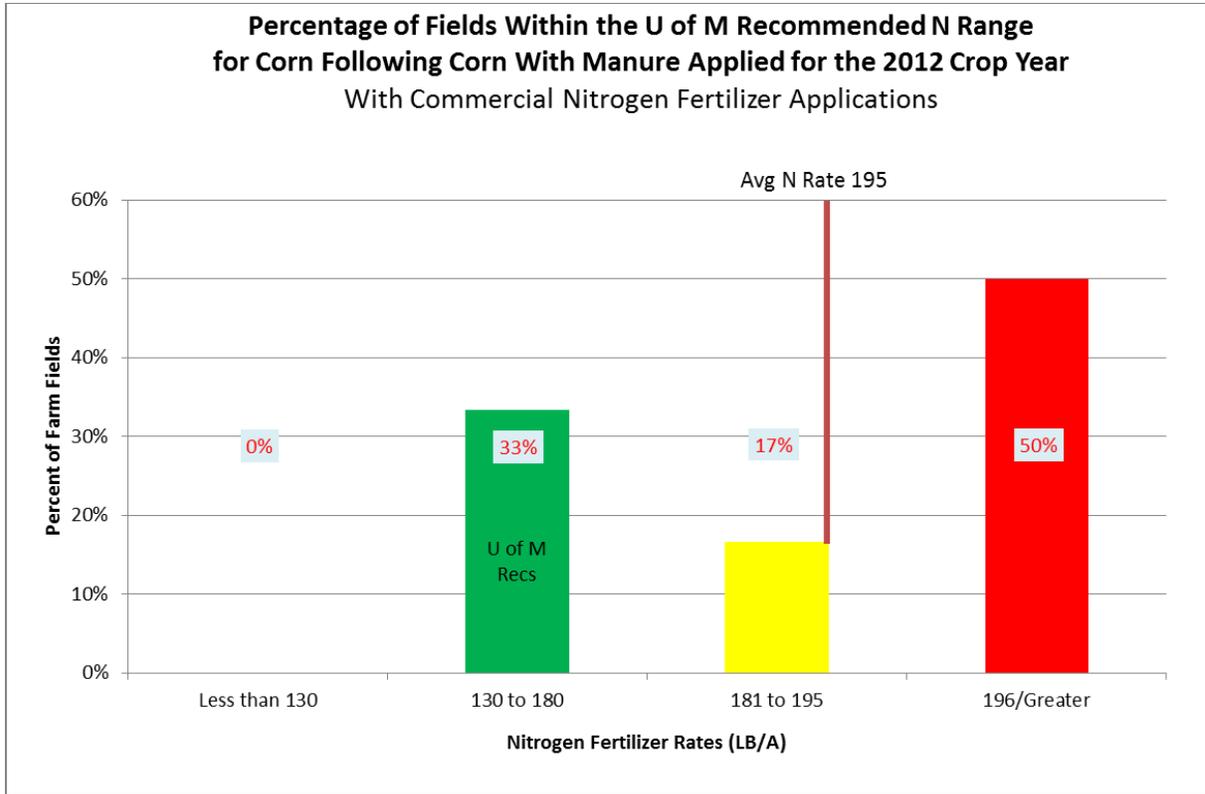


Figure 209. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 6 fields.

Table 189. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	176	154	225	167
Avg N Rate LB/A	100	148	190	221

Northwestern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the NW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Figure 210 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 190 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 210.

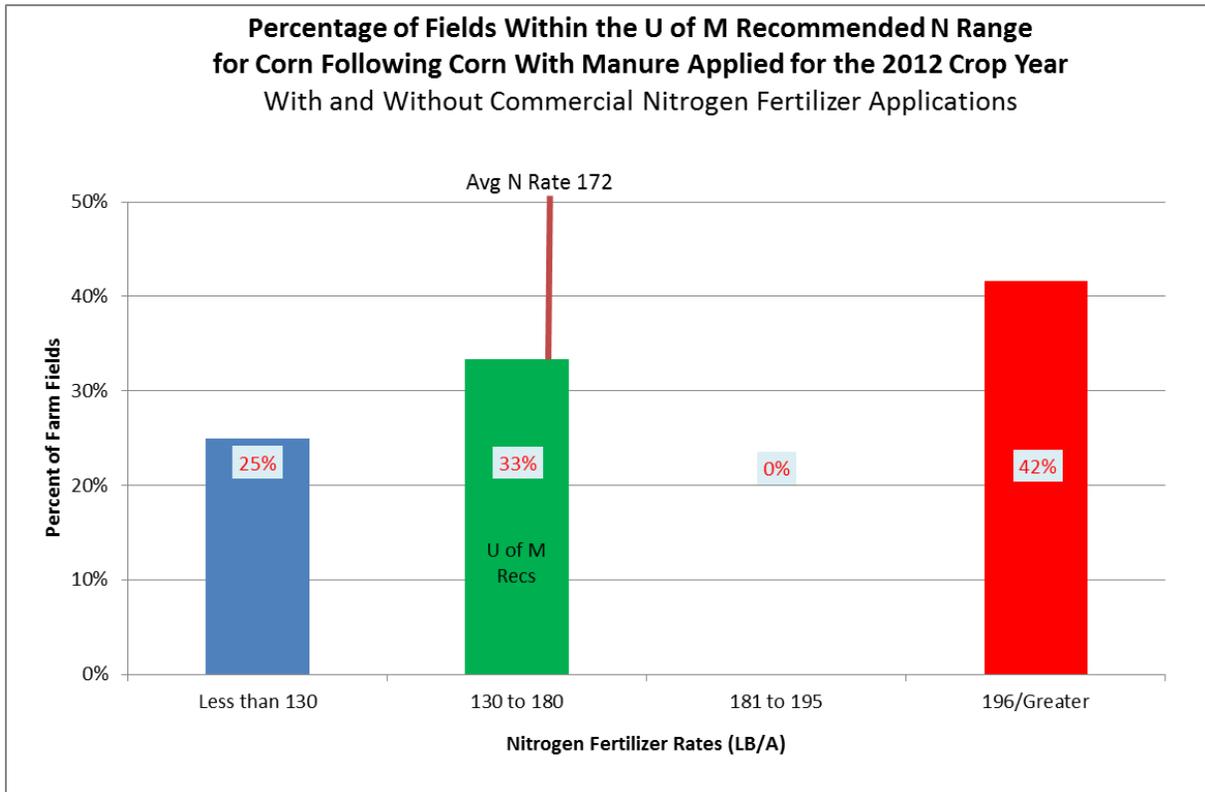


Figure 210. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 12 fields.

Table 190. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	156	151	No Data	142
Avg N Rate LB/A	94	168	No Data	223

Less than five farmers reported planting corn following corn in the IRR BMP region on fields applied with dairy manure and no commercial nitrogen fertilizer.

Figure 211 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 191 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 211.

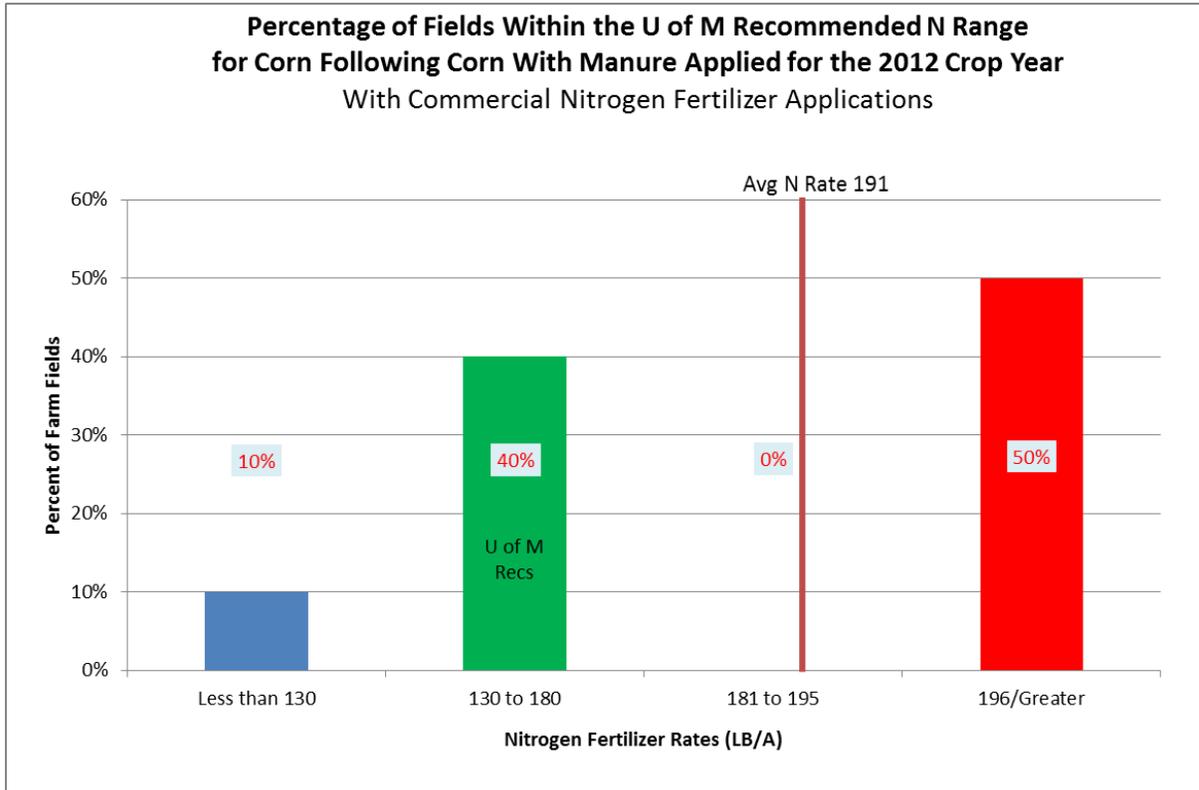


Figure 211. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 10 fields.

Table 191. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	150	151	No Data	142
Avg N Rate LB/A	123	168	No Data	223

Statewide: Corn Following Corn Following Alfalfa

Figure 212 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 192 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 212.

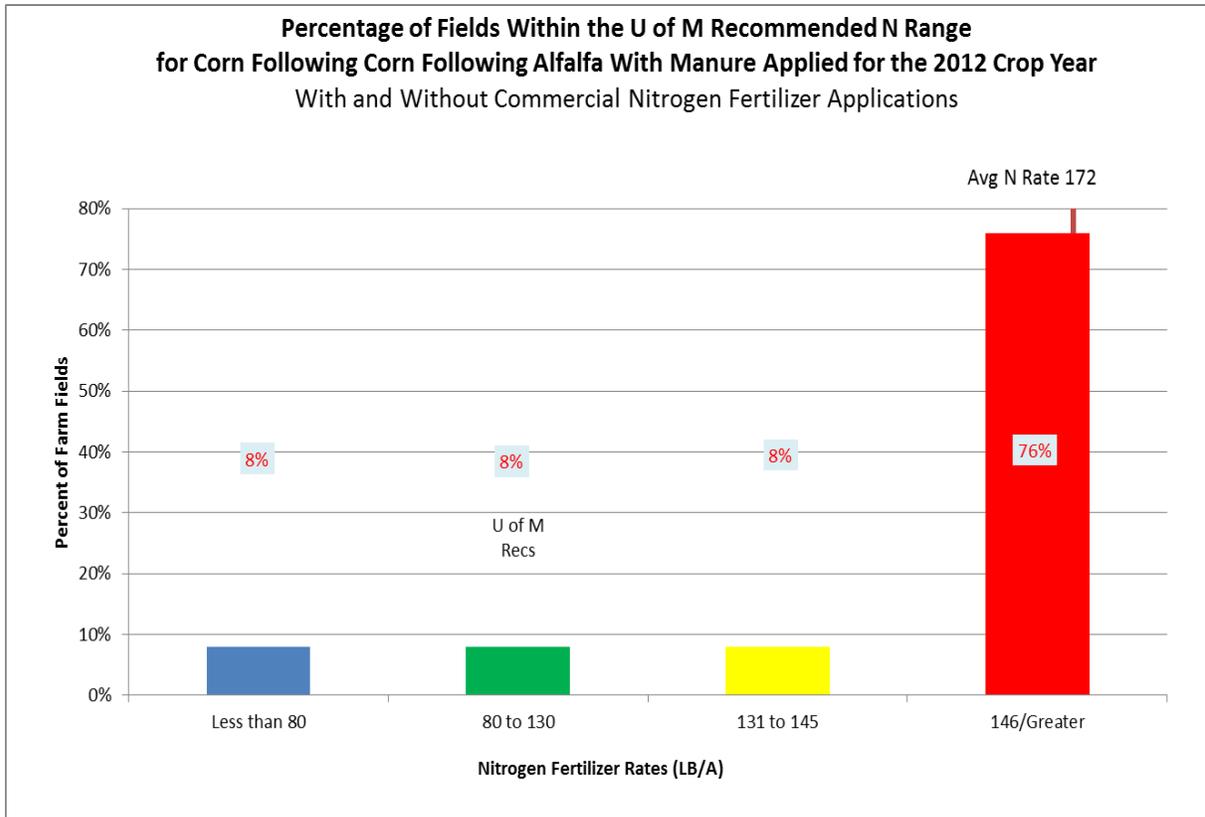


Figure 212. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 25 fields.

Table 192. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	165	124	166	168
Avg N Rate LB/A	53	85	138	197

Figure 213 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 193 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 213.

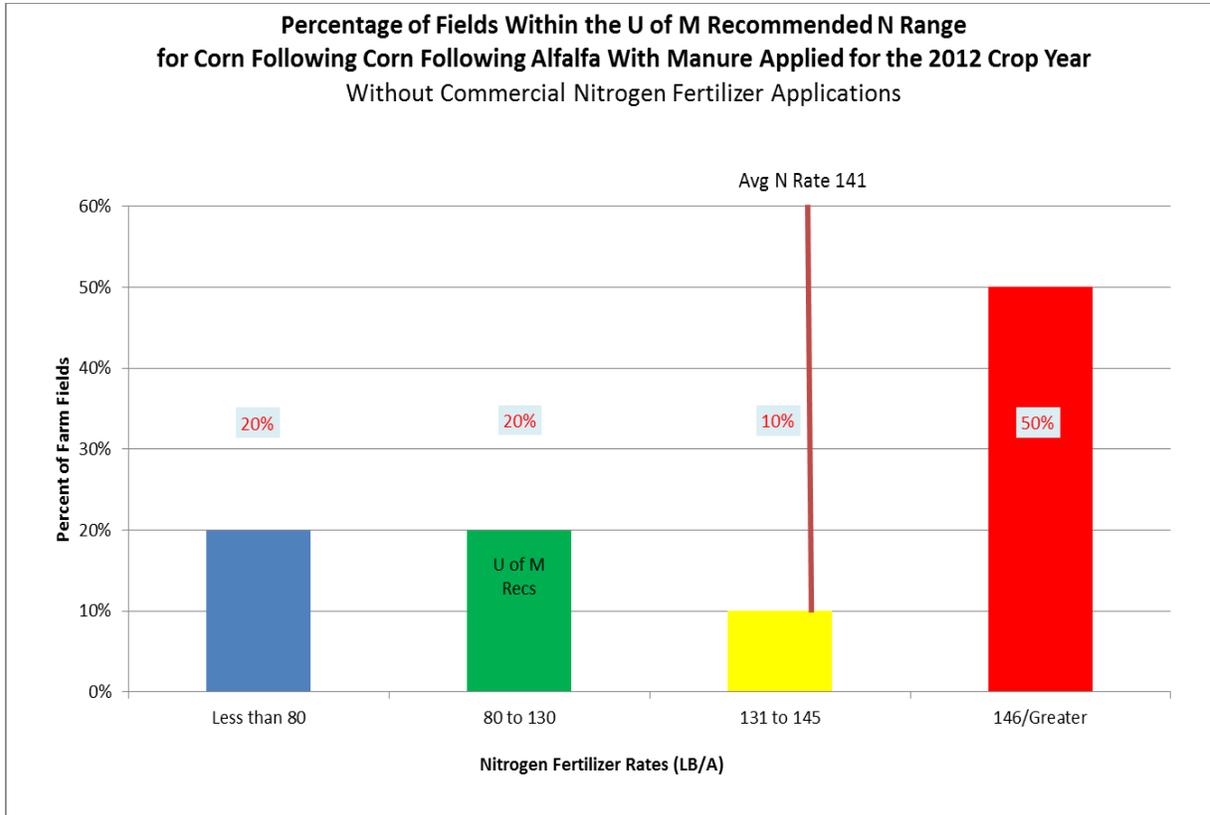


Figure 213. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 10 fields.

Table 193. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	165	124	150	181
Avg N Rate LB/A	53	85	140	198

Figure 214 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 194 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 214.

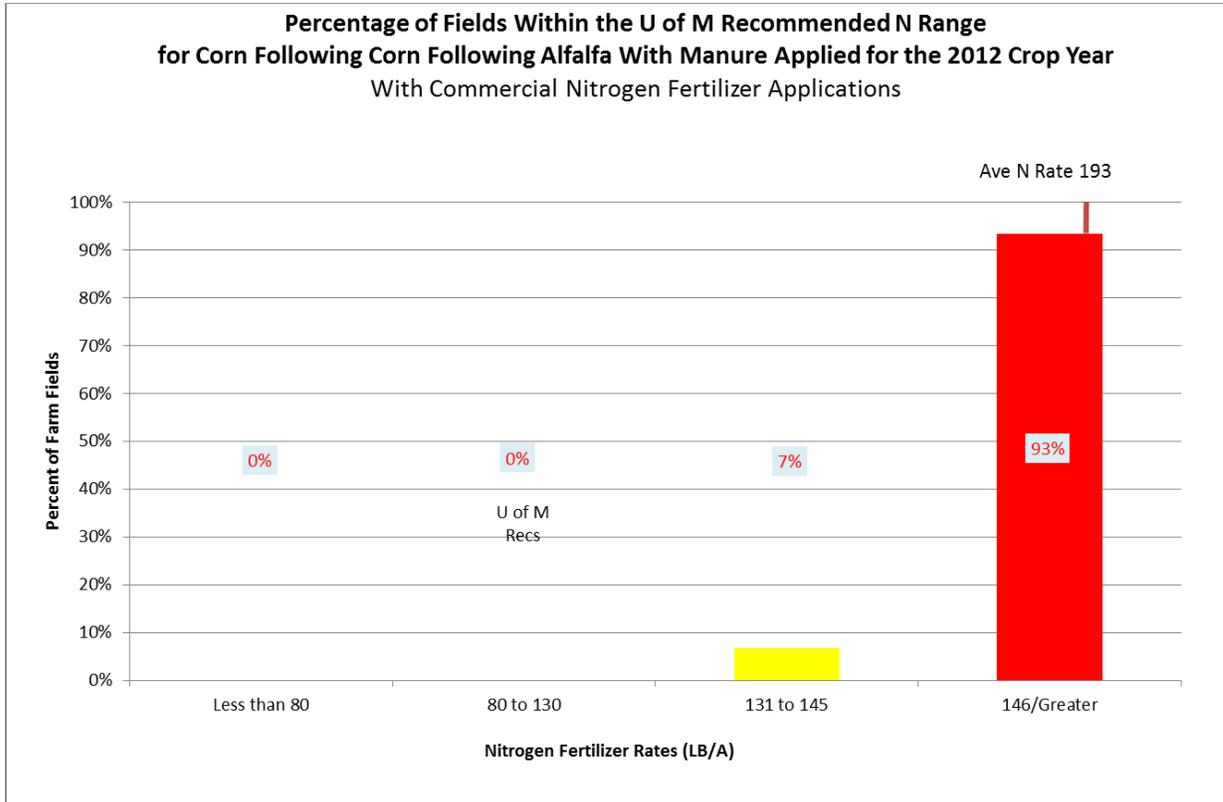


Figure 214. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 15 fields.

Table 194. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	No Data	182	163
Avg N Rate LB/A	No Data	No Data	135	197

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 215 details the distribution of nitrogen rates in the SE BMP region for corn following corn following alfalfa applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 195 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 215.

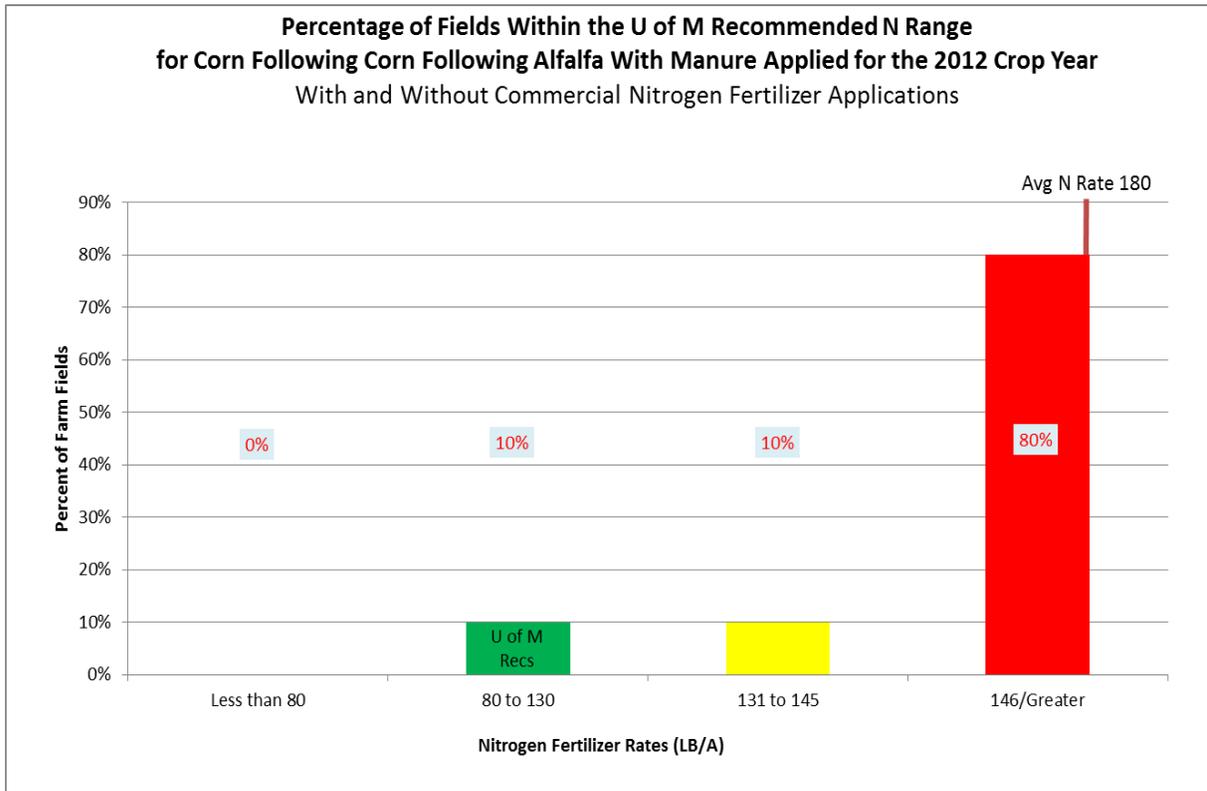


Figure 215. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 10 fields.

Table 195. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in the SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	111	182	192
Avg N Rate LB/A	No Data	80	135	198

Less than five farmers reported planting corn following corn following alfalfa in the SE BMP region on fields applied with dairy manure and no commercial nitrogen fertilizer.

Figure 216 details the distribution of nitrogen rates in the SE BMP region for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 196 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 216.

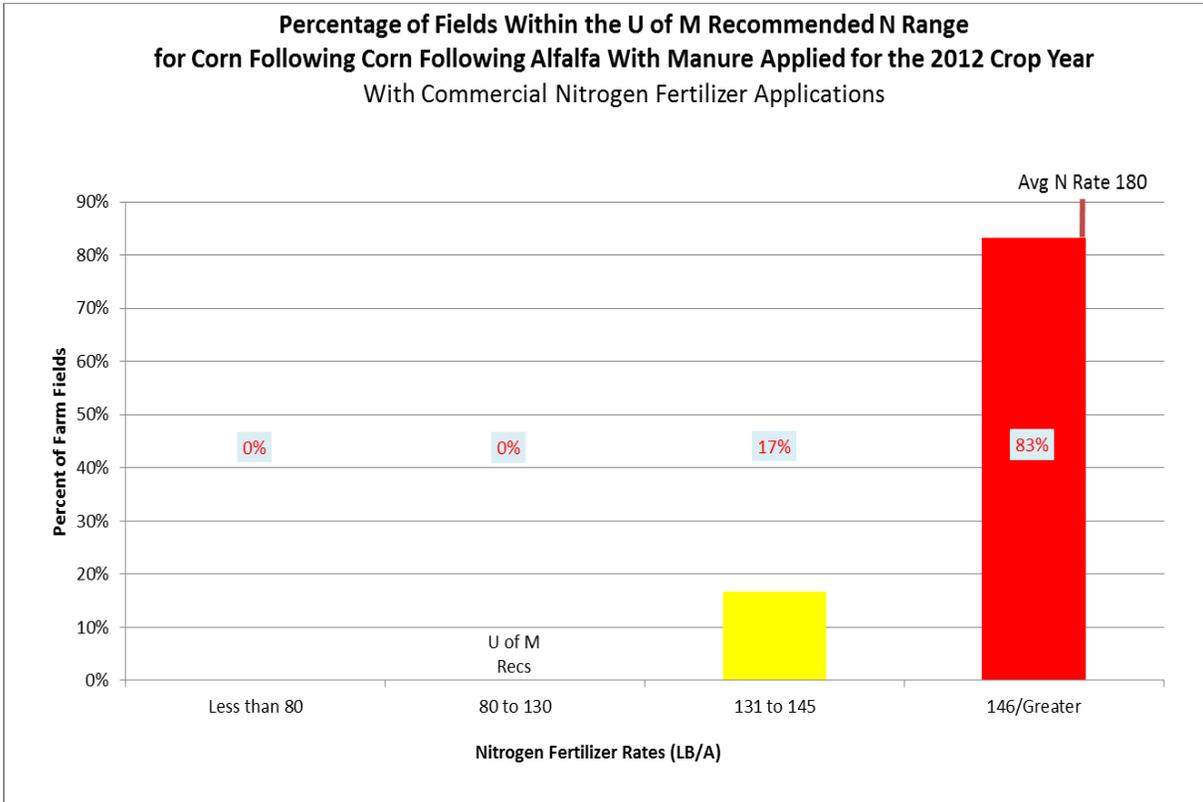


Figure 216. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.

Table 196. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in SE BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	No Data	182	183
Avg N Rate LB/A	No Data	No Data	135	189

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Figure 217 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 197 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 217.

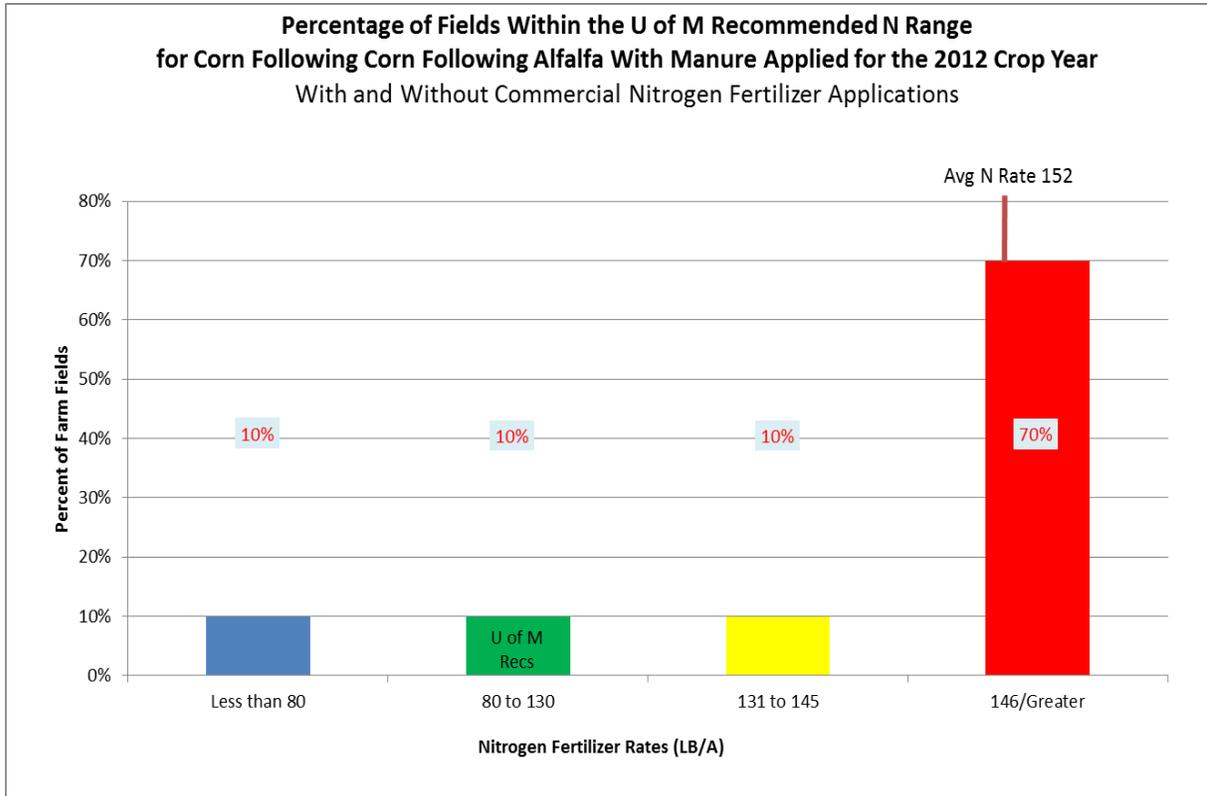


Figure 217. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 10 fields.

Table 197. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	150	136	150	140
Avg N Rate LB/A	55	90	140	177

Figure 218 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 197 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 218.

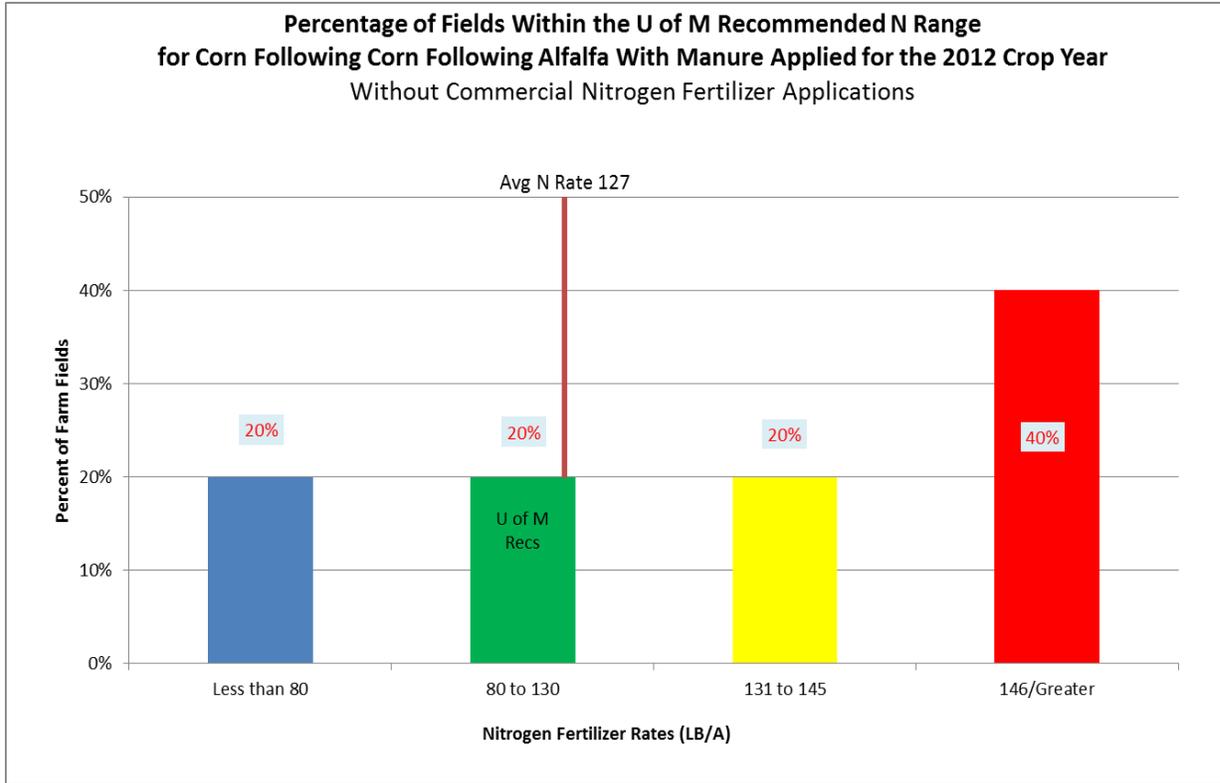


Figure 218. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.

Table 198. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	150	136	150	142
Avg N Rate LB/A	55	90	140	175

Figure 219 details the distribution of nitrogen rates in the IRR BMP region for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 199 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 219.

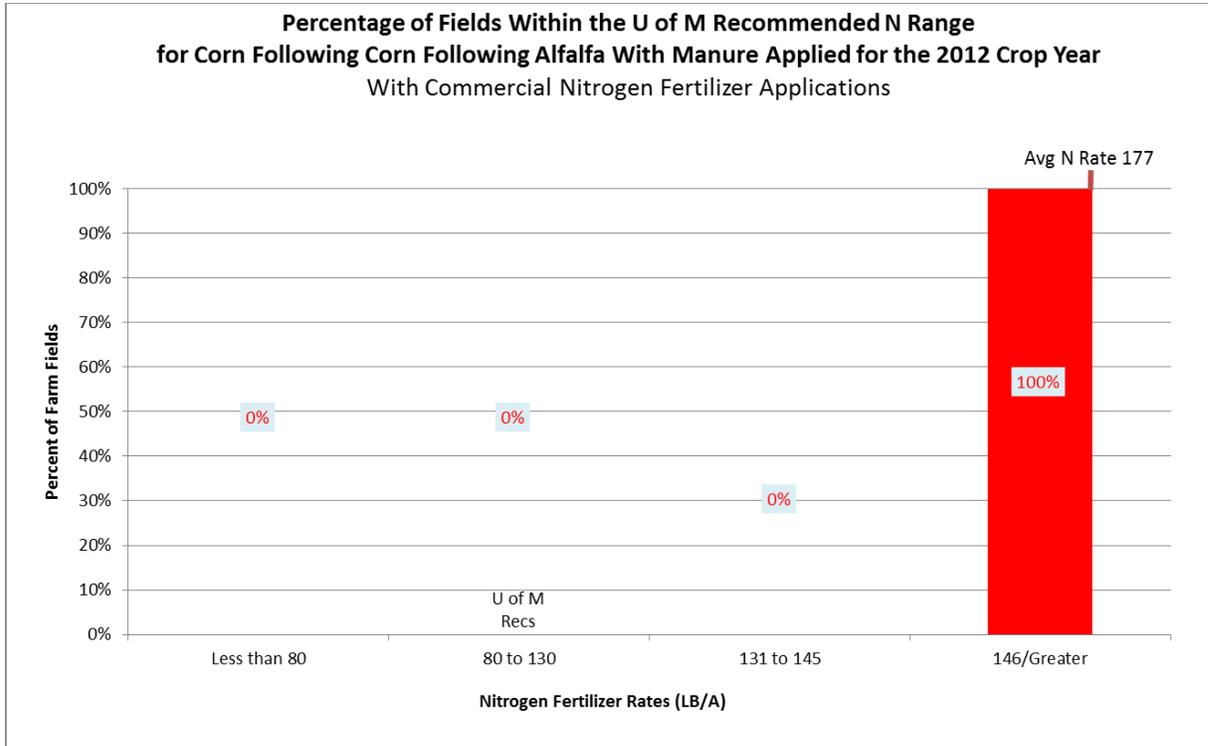


Figure 219. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.

Table 199. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in IRR BMP region.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	139
Avg N Rate LB/A	No Data	No Data	No Data	177

Statewide: Corn Following Alfalfa

Figure 220 details the distribution of nitrogen rates in Minnesota for corn following alfalfa applied with dairy manure or dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 200 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 220.

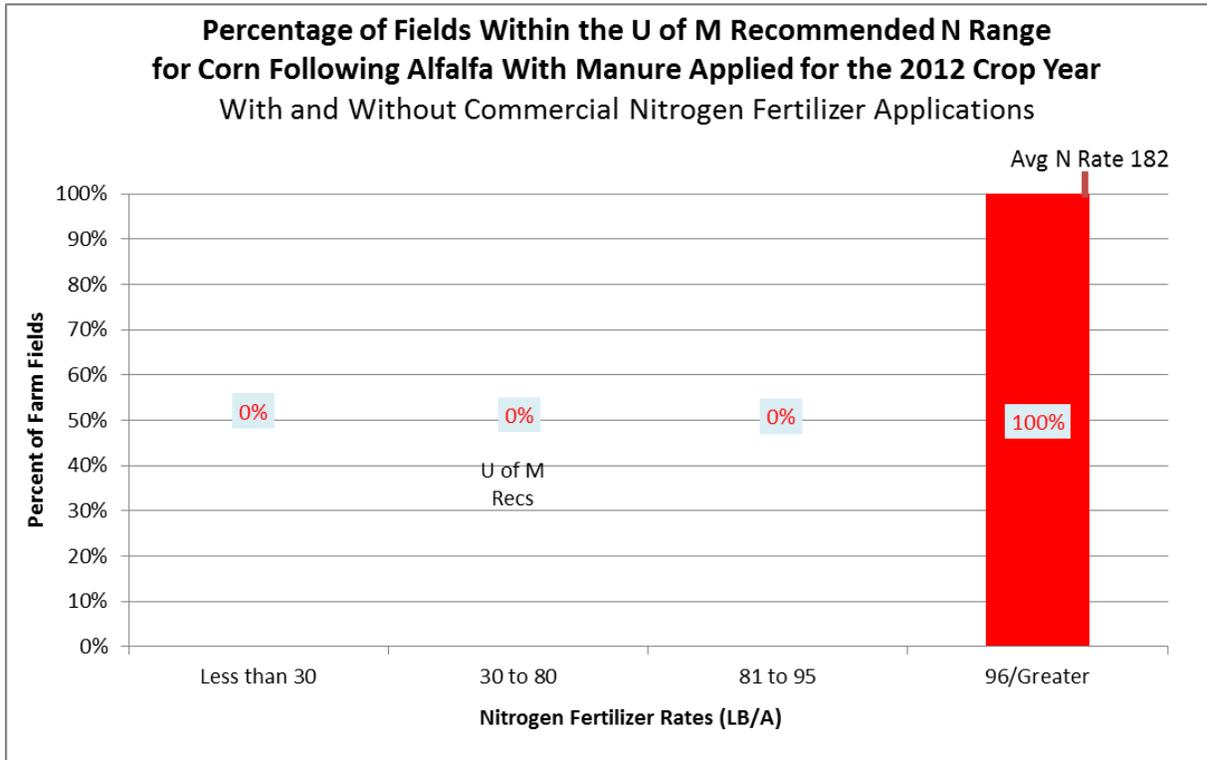


Figure 220. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 12 fields.

Table 200. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	176
Avg N Rate LB/A	No Data	No Data	No Data	182

Figure 221 details the distribution of nitrogen rates in Minnesota for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 201 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 221.

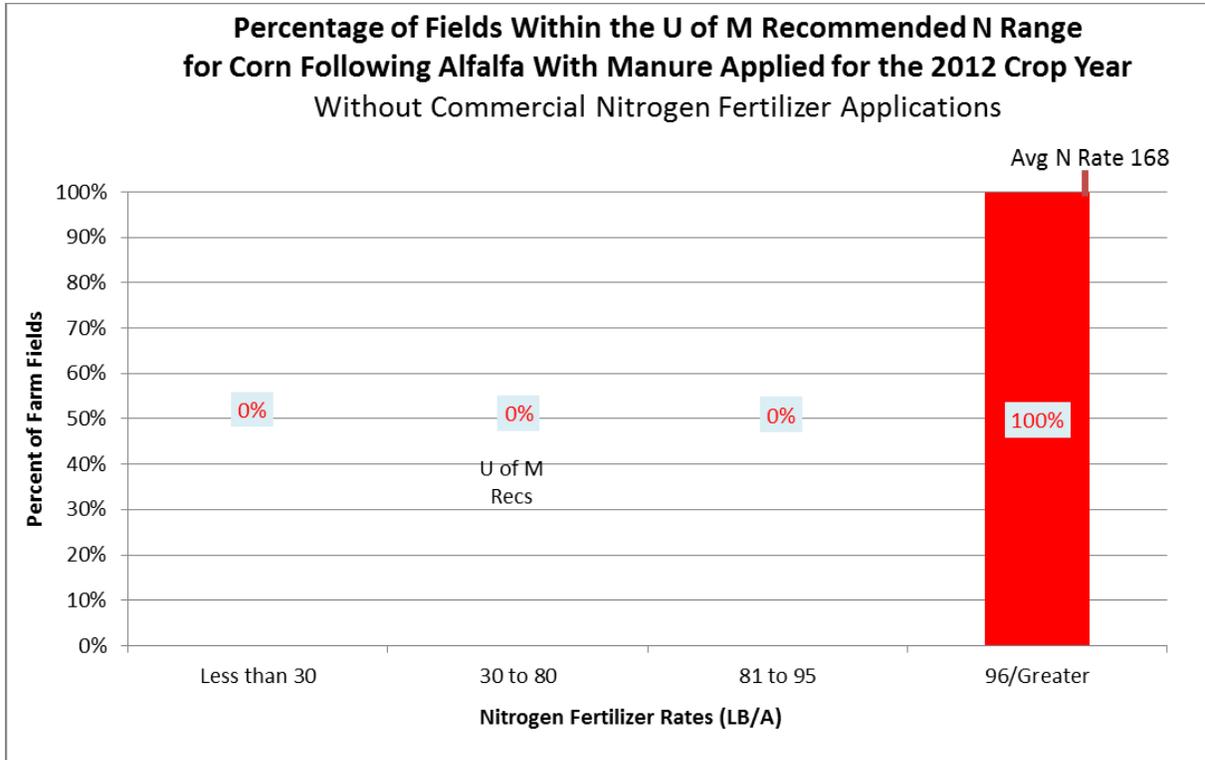


Figure 221. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 201. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	175
Avg N Rate LB/A	No Data	No Data	No Data	168

Figure 222 details the distribution of nitrogen rates in Minnesota for corn following alfalfa fields applied with dairy manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 202 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 222.

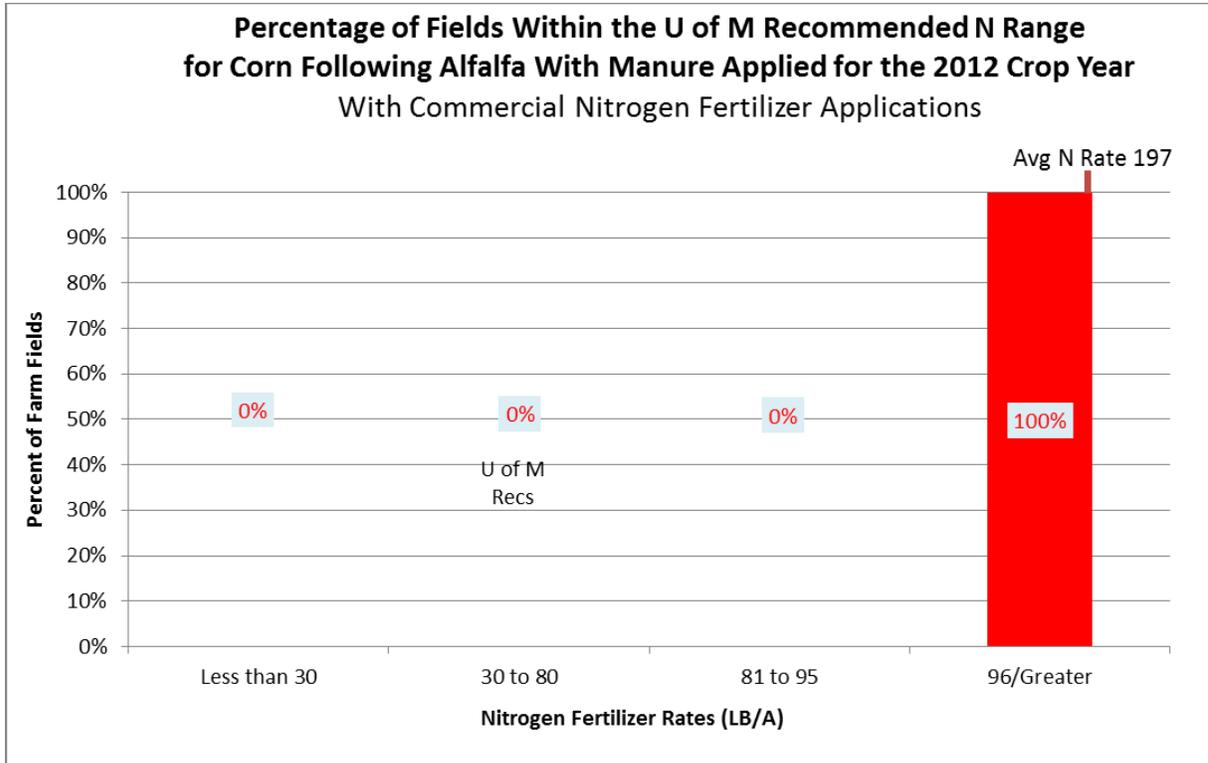


Figure 222. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 202. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota

N Fertilizer Ranges	<30 LB/A	30-80 LB/A	81-95 LB/A	96/Greater LB/A
Avg Bu./Acre	No Data	No Data	No Data	177
Avg N Rate LB/A	No Data	No Data	No Data	197

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the IRR BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Statewide: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in Minnesota on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.

- With dairy manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the NW BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the IRR BMP region on fields applied:

- With dairy manure or with dairy manure and commercial nitrogen fertilizer.
- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Manure Applications from Beef Manure Statewide: Corn Following Soybeans

Figure 223 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with beef manure or beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 203 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 223.

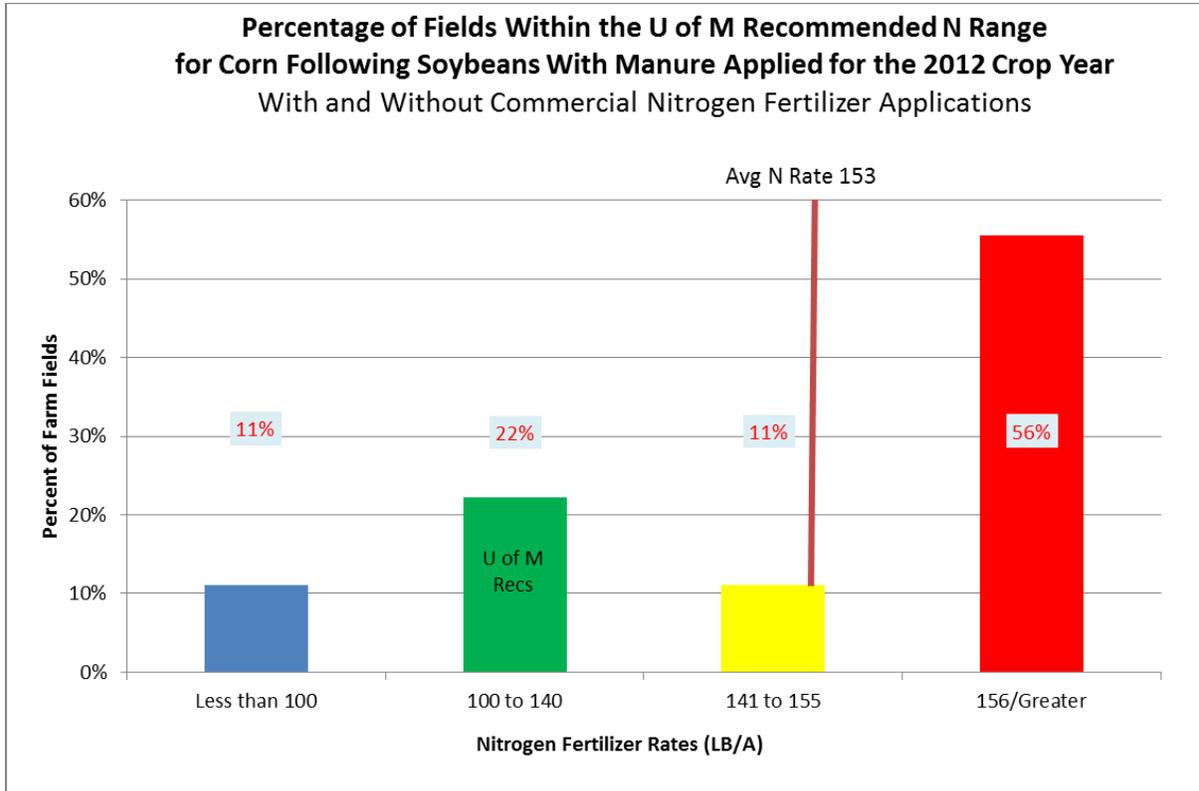


Figure 223. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 9 fields.

Table 203. Nitrogen rates and associated yields for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	150	191	180	124
Avg N Rate LB/A	60	110	150	190

Less than five farmers reported planting corn following soybeans in Minnesota on fields applied with beef manure and no commercial nitrogen fertilizer.

Figure 224 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 204 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 224.

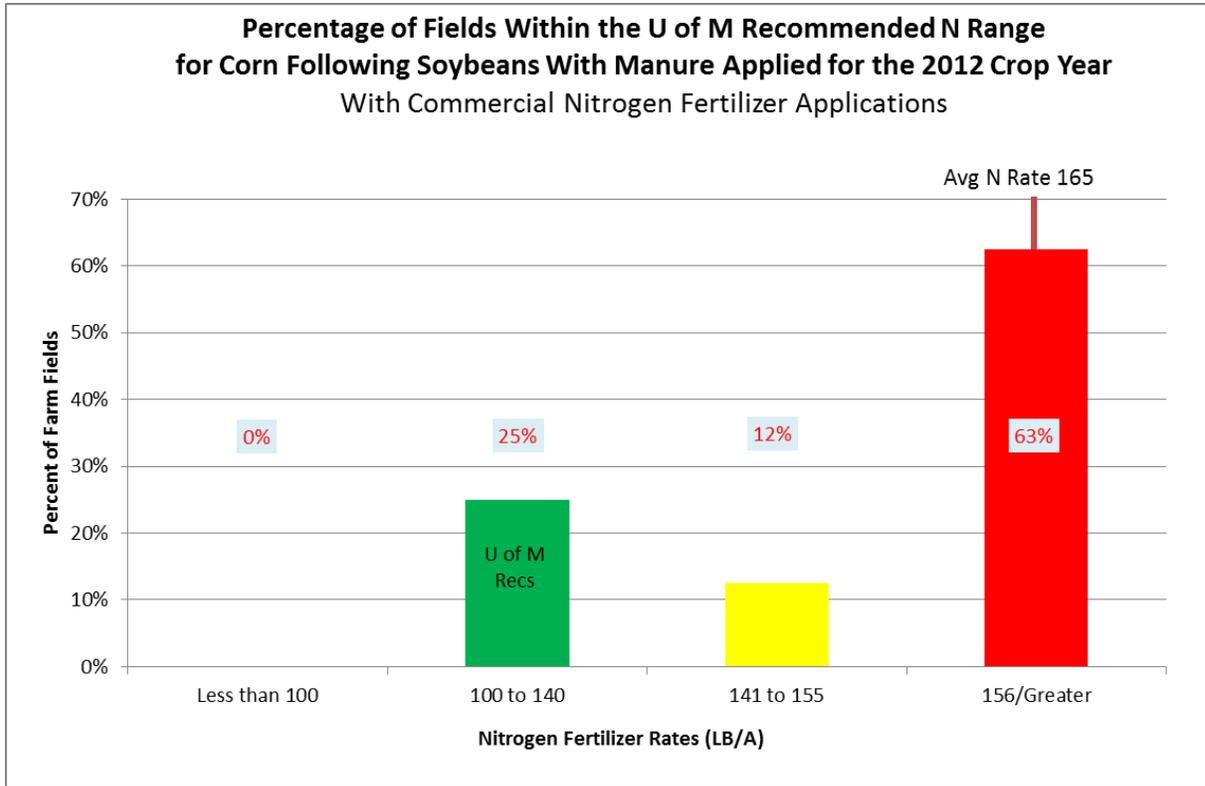


Figure 224. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.

Table 204. Nitrogen rates and associated yields for corn following soybeans applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	191	180	124
Avg N Rate LB/A	No Data	110	150	190

Southeastern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SE BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the IRR BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Statewide: Corn Following Corn

Figure 225 details the distribution of nitrogen rates in Minnesota for corn following corn applied with beef manure or beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 205 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 225.

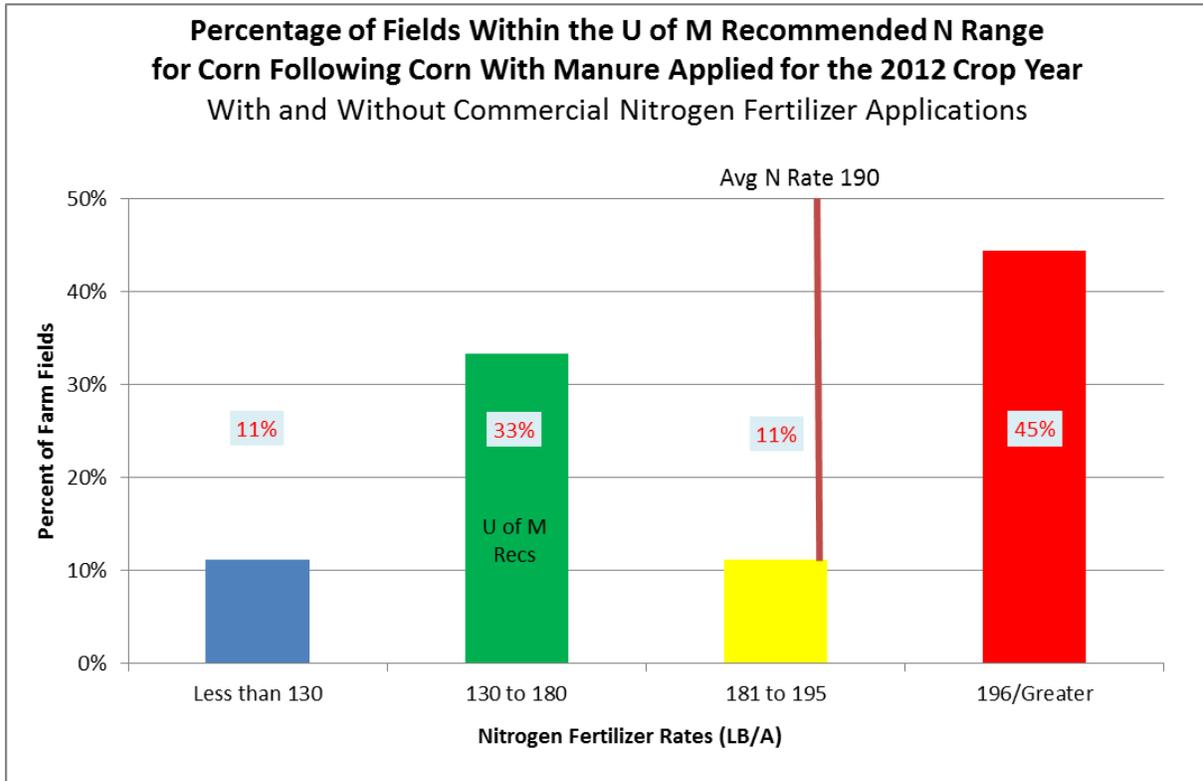


Figure 225. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 18 fields.

Table 205. Nitrogen rates and associated yields for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	168	168	203	178
Avg N Rate LB/A	120	151	193	237

Figure 226 details the distribution of nitrogen rates in Minnesota for corn following corn applied with beef manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 206 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 226.

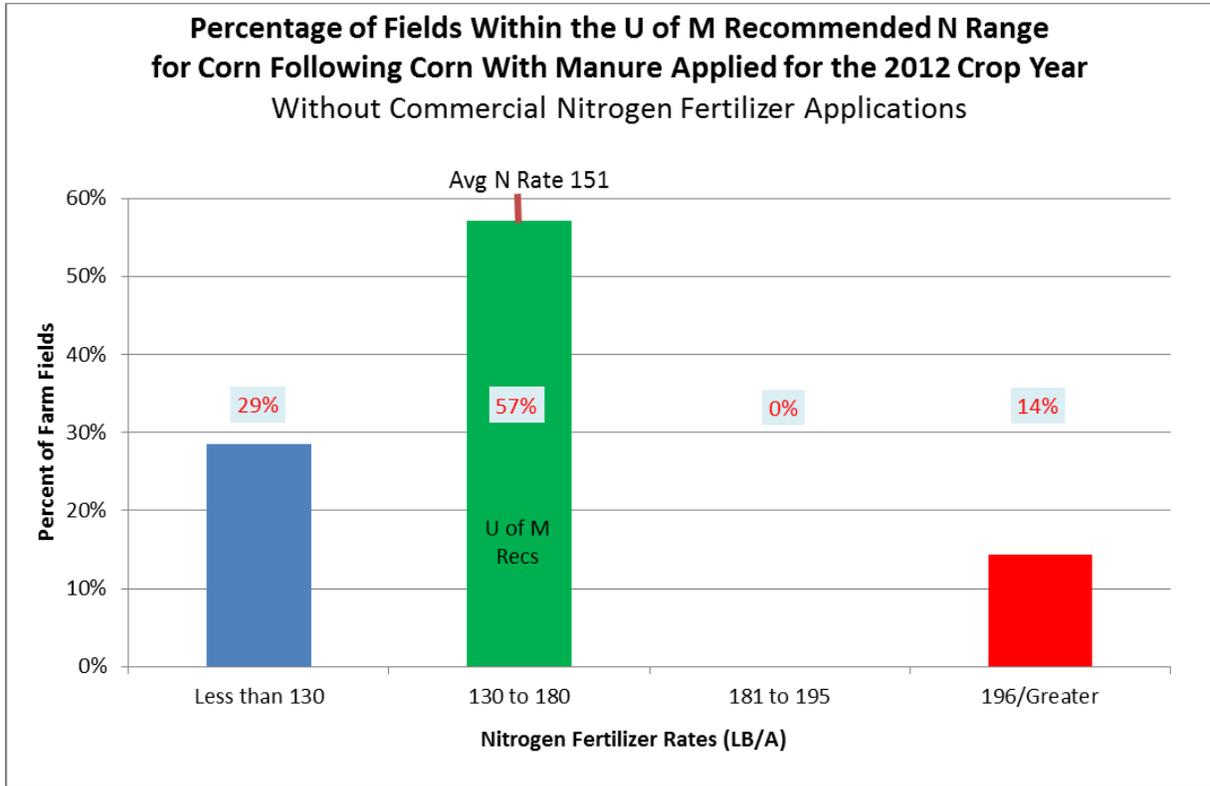


Figure 226. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and no commercial nitrogen fertilizer in Minnesota for 2012: 7 fields.

Table 206. Nitrogen rates and associated yields for corn following corn applied with beef manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	168	184	No Data	185
Avg N Rate LB/A	120	151	No Data	210

Figure 227 details the distribution of nitrogen rates in Minnesota for corn following corn applied with beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 207 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 227.

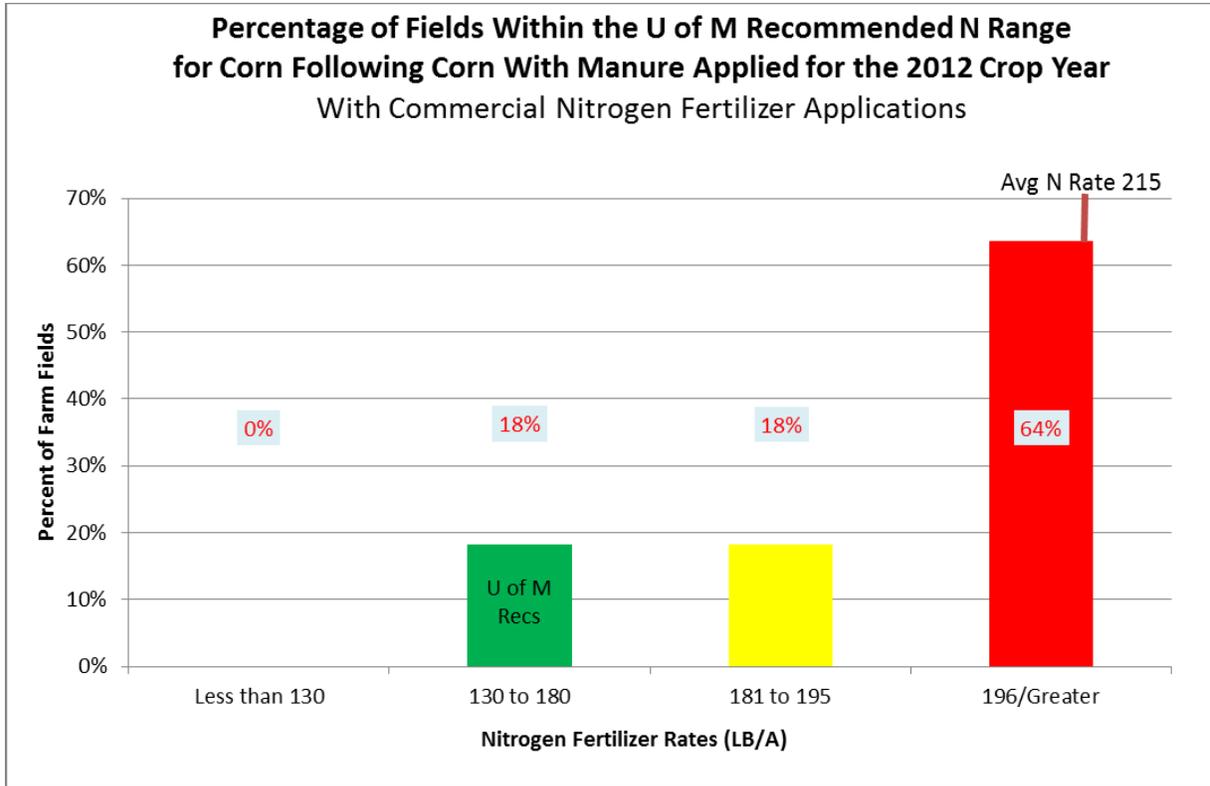


Figure 227. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 11 fields.

Table 207. Nitrogen rates and associated yields for corn following corn applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	135	203	177
Avg N Rate LB/A	No Data	150	193	241

Southeastern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SE BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the NW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the IRR BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Statewide: Corn Following Corn Following Alfalfa

Figure 228 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with beef manure or beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 208 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 228.

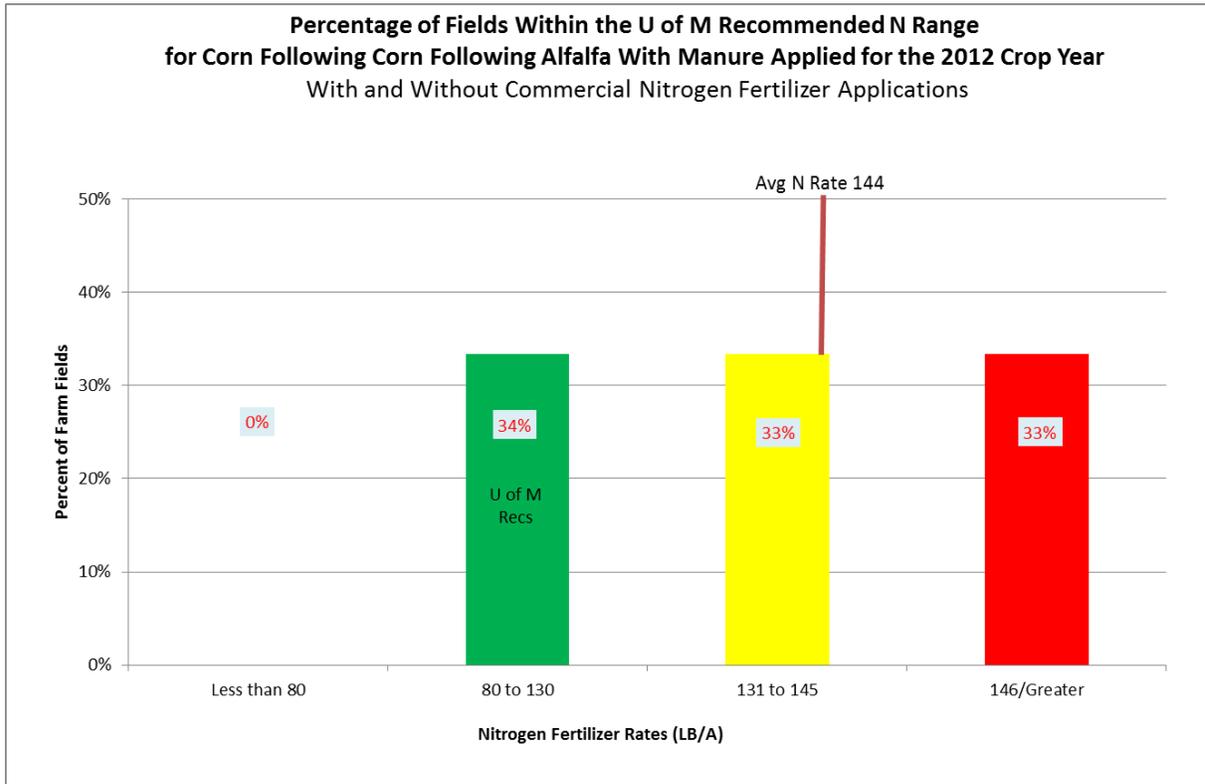


Figure 228. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 208. Nitrogen rates and associated yields for corn following corn following alfalfa applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	146	120	123
Avg N Rate LB/A	No Data	120	142	170

Less than five farmers reported planting corn following corn in Minnesota on fields applied with beef manure and no commercial nitrogen fertilizer.

Figure 229 details the distribution of nitrogen rates in Minnesota for corn following corn following alfalfa applied with beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 209 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 229.

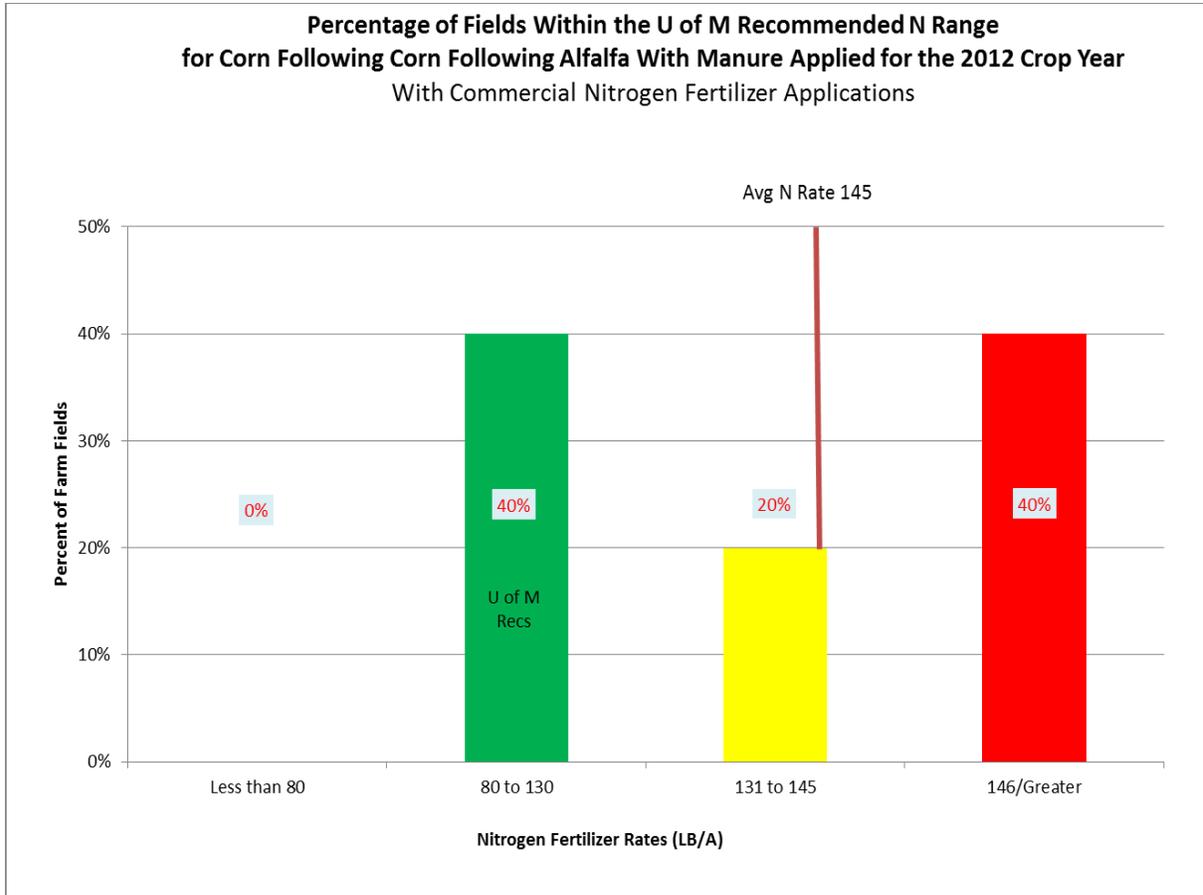


Figure 229. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.

Table 209. Nitrogen rates and associated yields for corn following corn following alfalfa applied with beef manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<80 LB/A	80-130 LB/A	131-145 LB/A	146/Greater LB/A
Avg Bu./Acre	No Data	146	100	123
Avg N Rate LB/A	No Data	120	143	170

Southeastern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SE BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the IRR BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Statewide: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in Minnesota on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.

- With beef manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the IRR BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Statewide: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in Minnesota on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the NW BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the IRR BMP region on fields applied:

- With beef manure or with beef manure and commercial nitrogen fertilizer.
- With beef manure and no commercial nitrogen fertilizer.
- With beef manure and commercial nitrogen fertilizer.

Manure Applications from Hog Manure Statewide: Corn Following Soybeans

Figure 230 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 210 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 230.

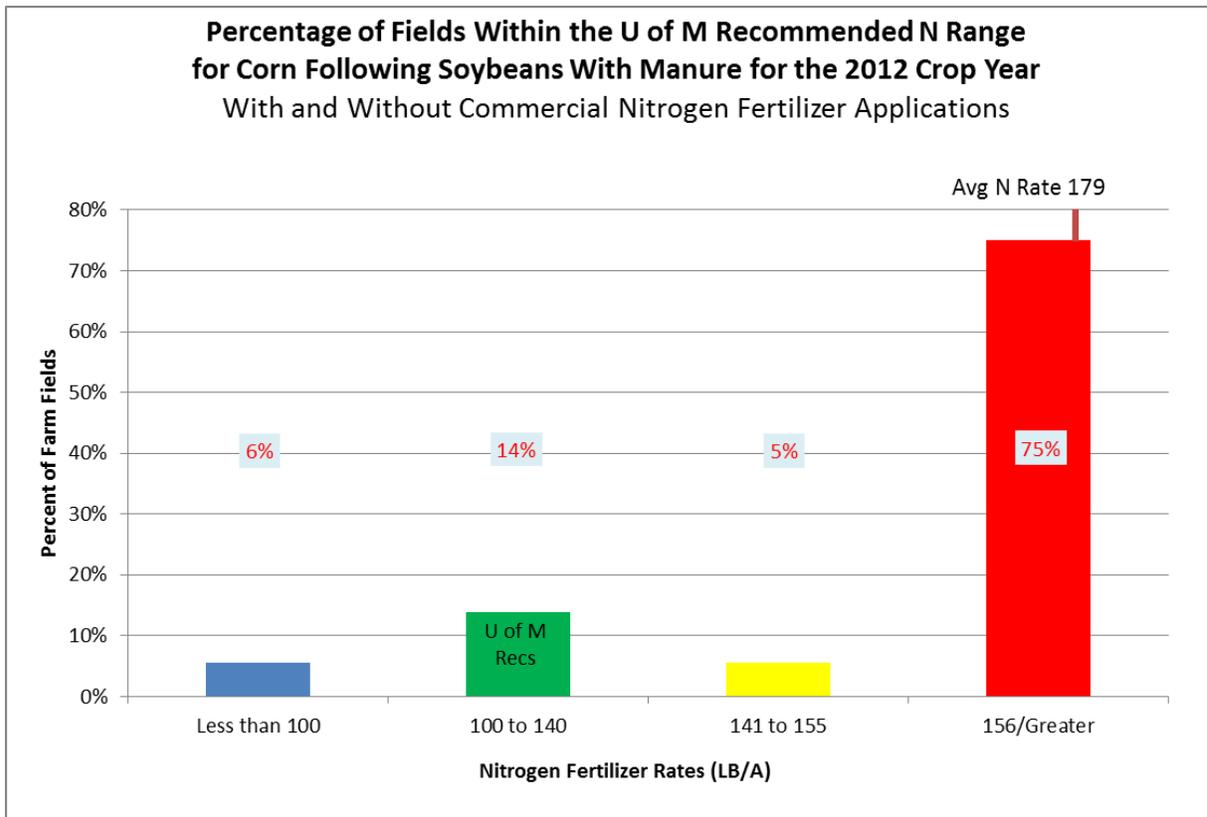


Figure 230. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 36 fields.

Table 210. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	163	173	183	181
Avg N Rate LB/A	56	135	148	199

Figure 231 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 211 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 231.

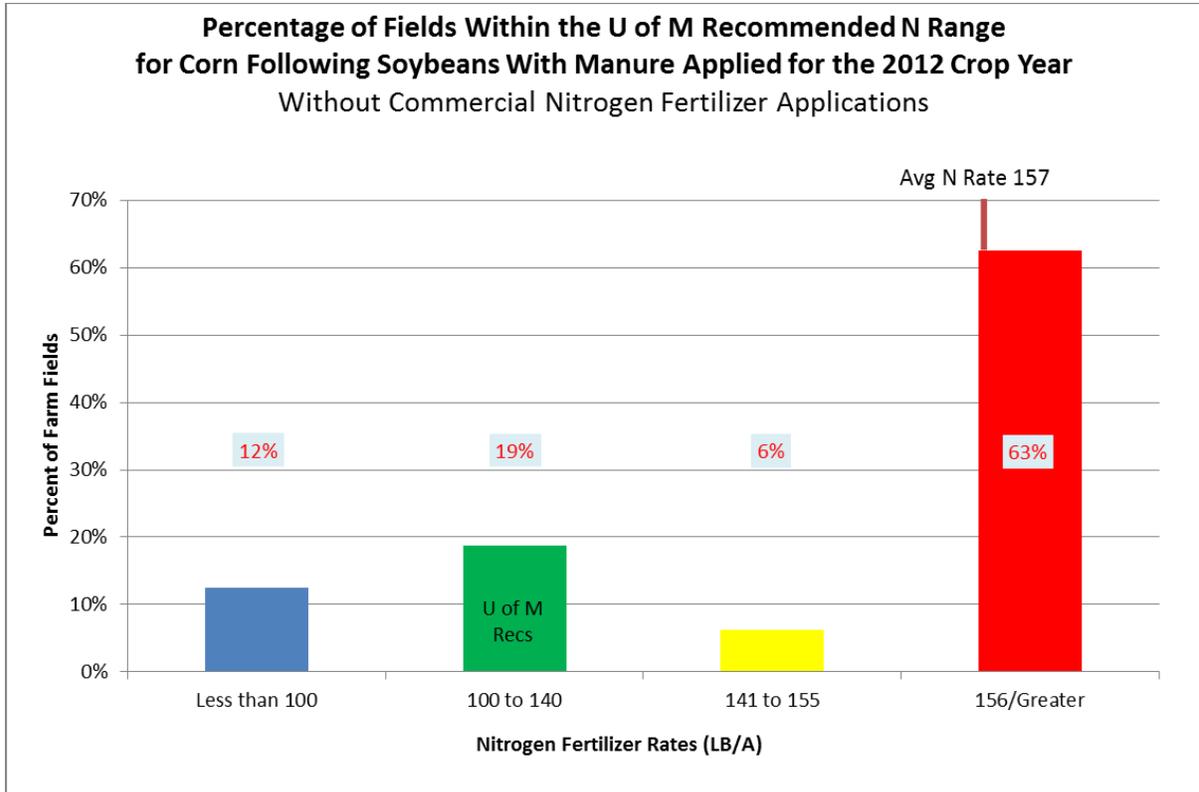


Figure 231. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2012: 16 fields.

Table 211. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	163	164	165	182
Avg N Rate LB/A	56	135	150	185

Figure 232 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 212 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 232.

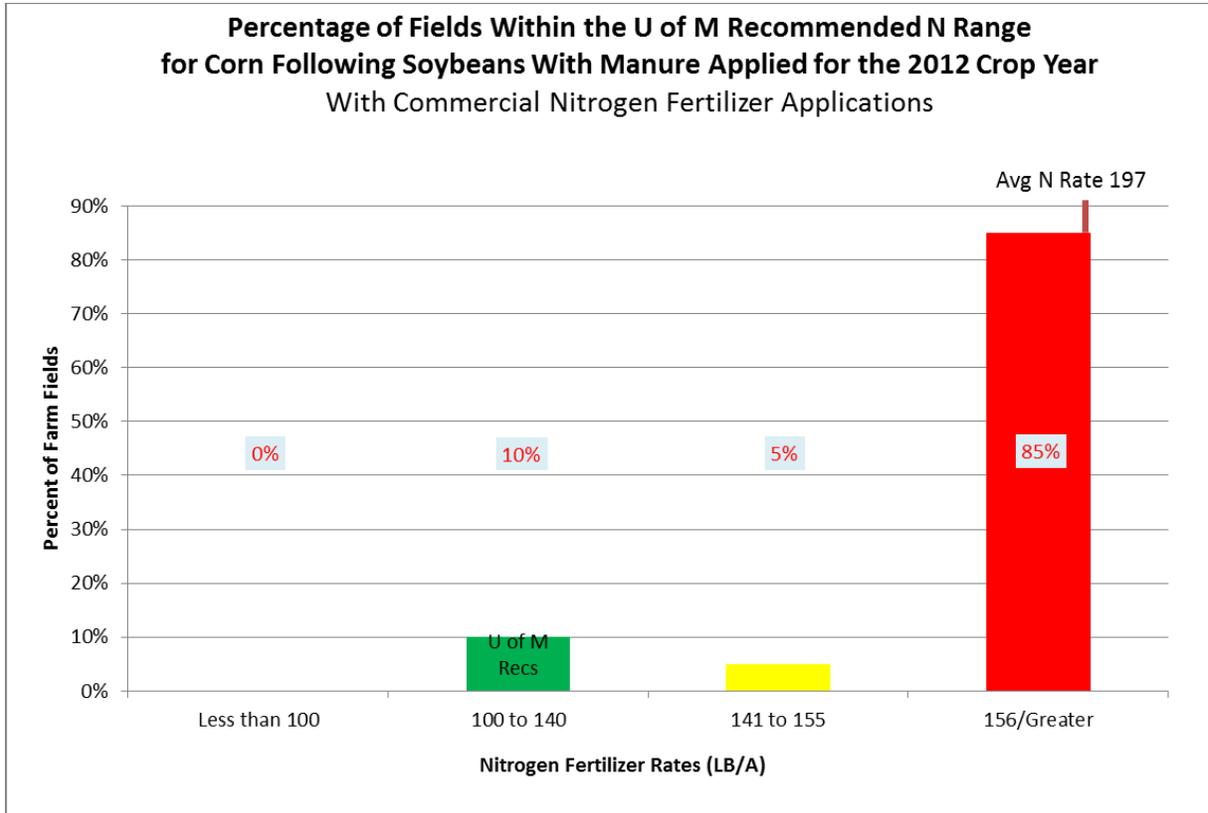


Figure 232. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 20 fields.

Table 212. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	185	200	180
Avg N Rate LB/A	No Data	135	145	207

Southeastern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SE BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Soybeans

Figure 233 details the distribution of nitrogen rates in the SE BMP region for corn following soybeans applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 213 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 233.

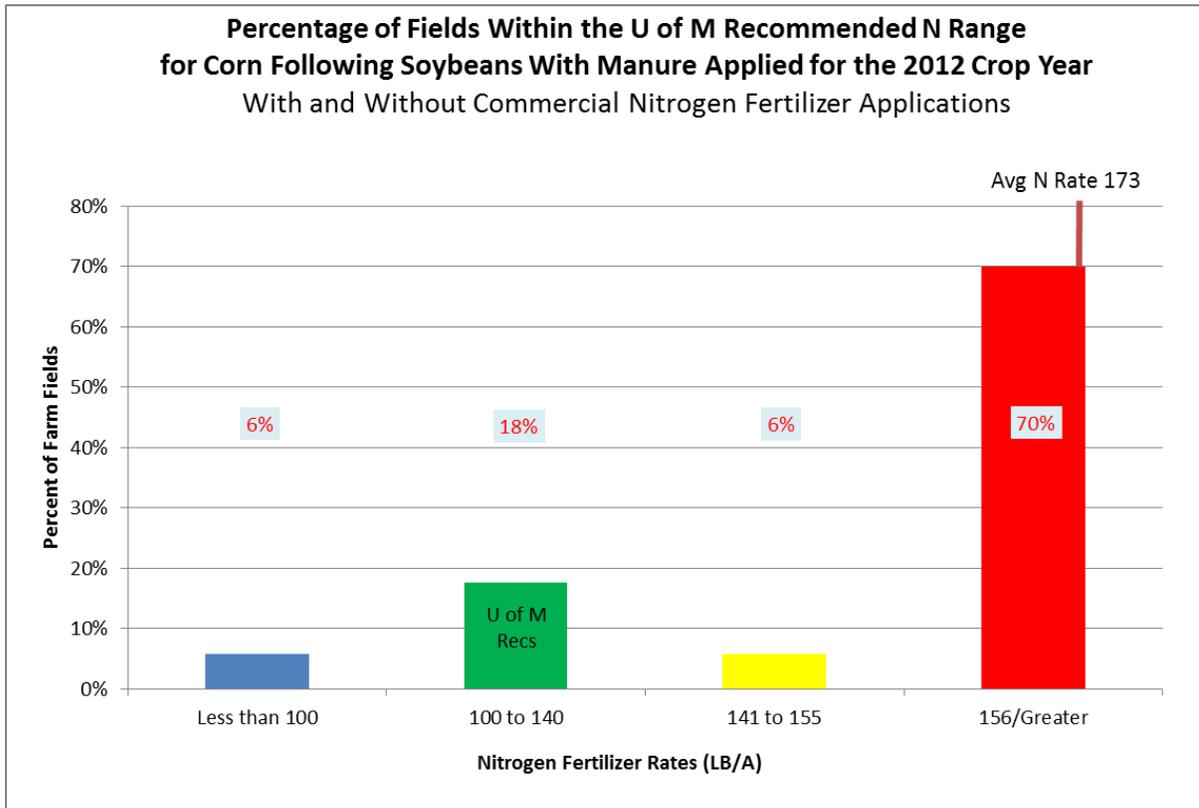


Figure 233. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 17 fields.

Table 213. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	165	173	200	181
Avg N Rate LB/A	52	131	145	196

Figure 234 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 214 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 234.

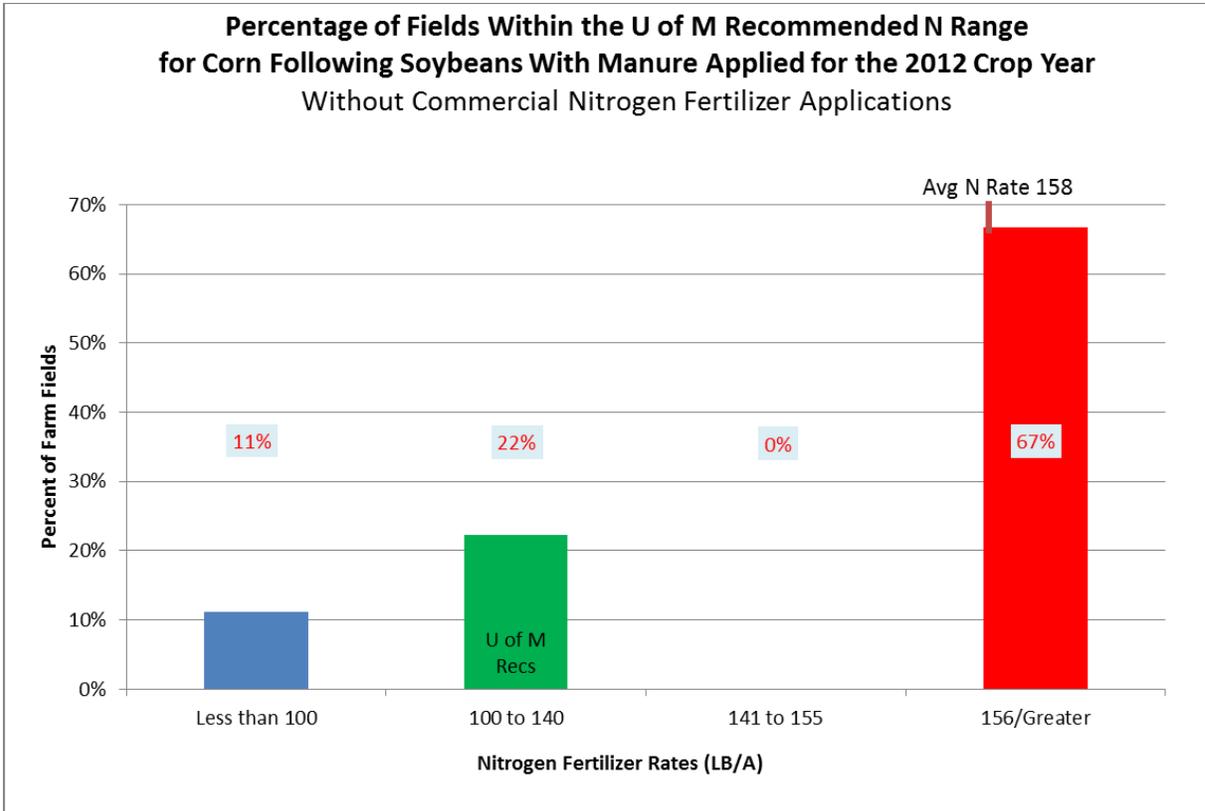


Figure 234 Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 9 fields.

Table 214. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	165	170	No Data	182
Avg N Rate LB/A	52	132	No Data	185

Figure 235 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 215 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 235.

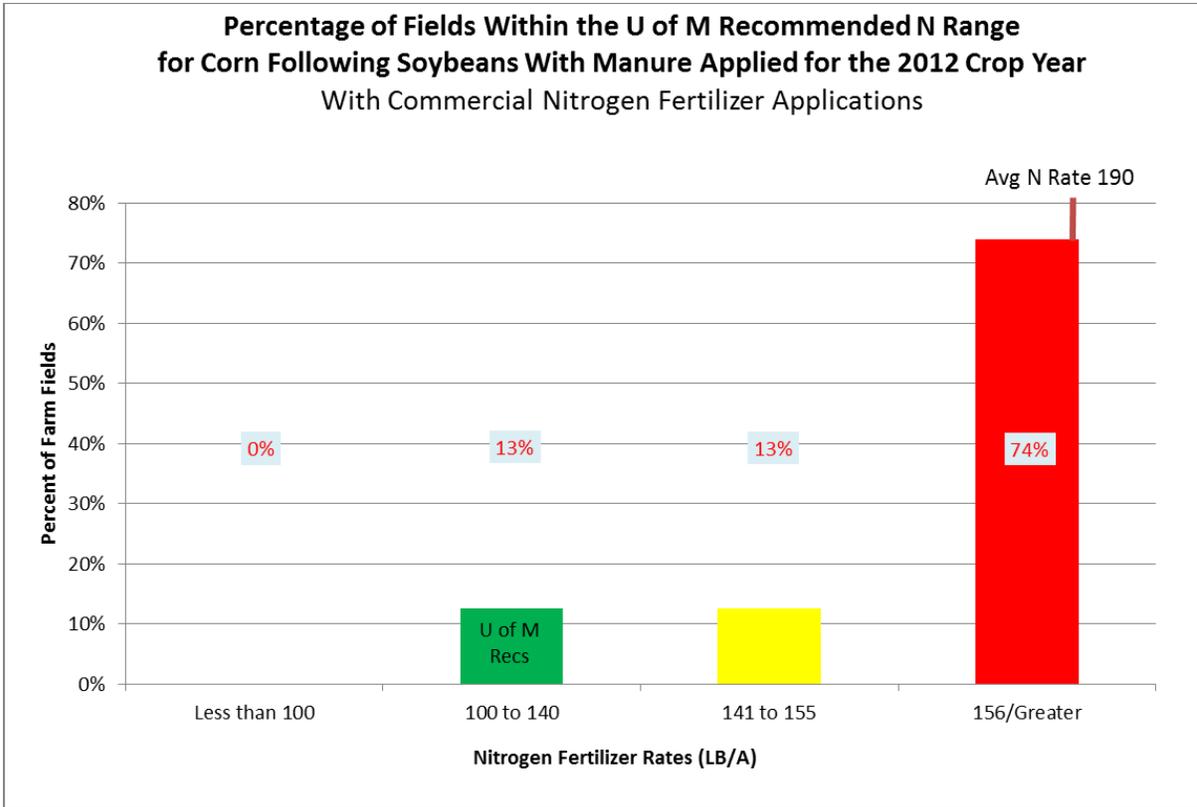


Figure 235. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 8 fields.

Table 215. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	180	200	180
Avg N Rate LB/A	No Data	130	145	208

Southwestern and West Central Region: Corn Following Soybeans

Figure 236 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 216 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 236.

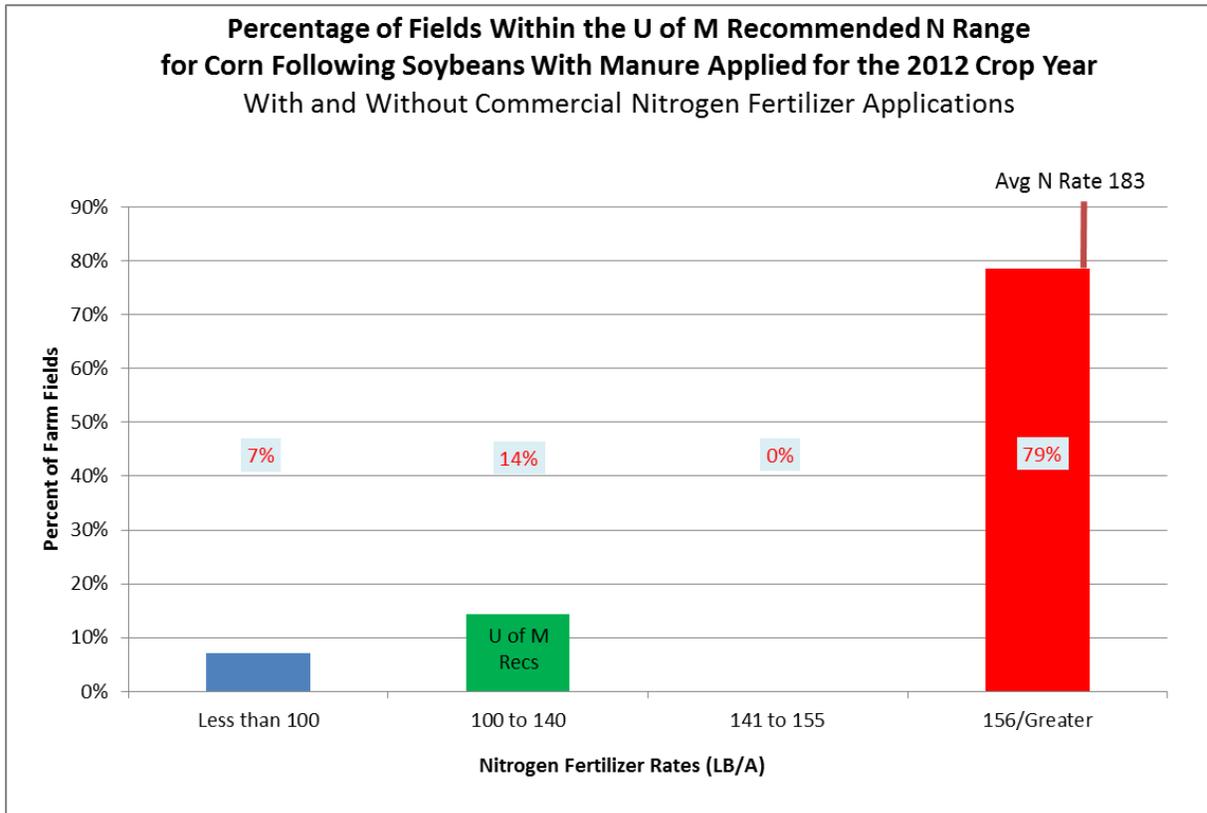


Figure 236. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 14 fields.

Table 216. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	160	172	No Data	177
Avg N Rate LB/A	60	140	No Data	202

Figure 237 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 217 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 237.

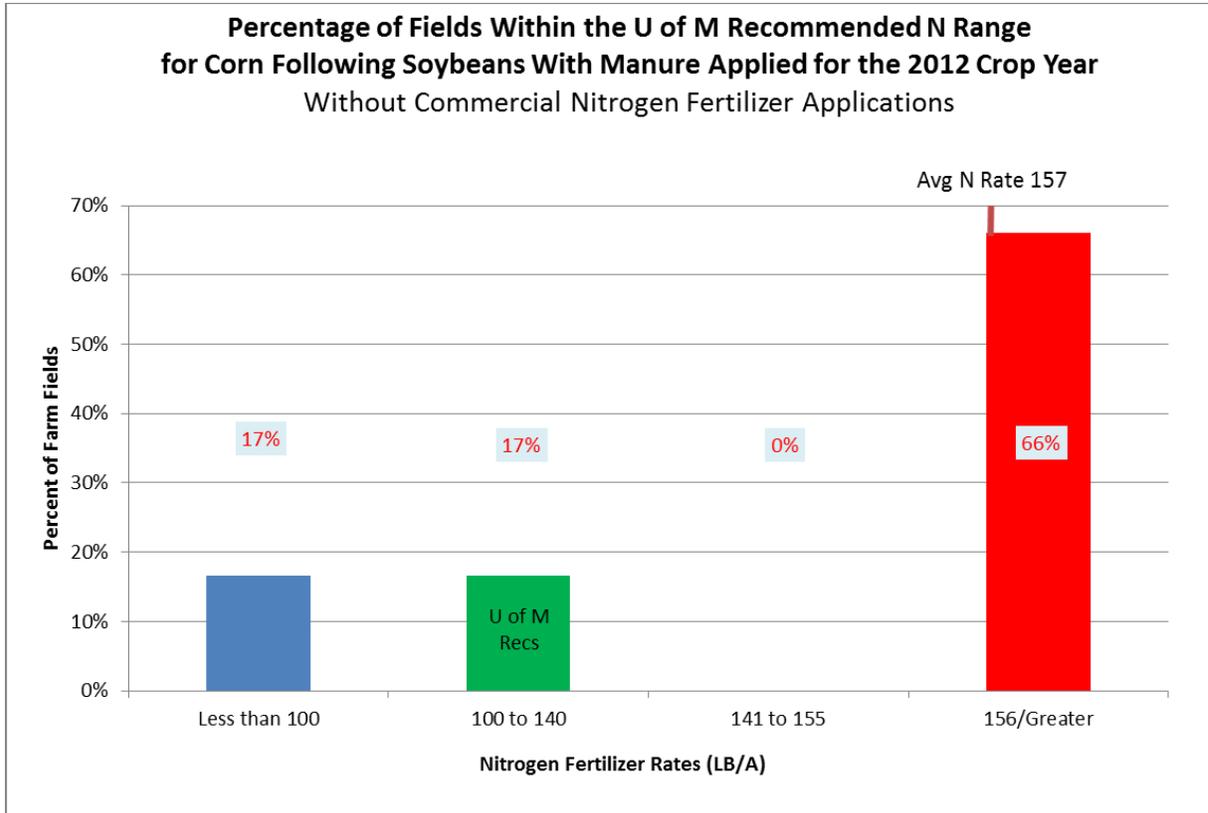


Figure 237. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SW BMP region for 2012: 6 fields.

Table 217. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	160	153	No Data	181
Avg N Rate LB/A	60	140	No Data	185

Figure 238 details the distribution of nitrogen rates in the SE BMP region for corn following soybeans applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 218 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 238.

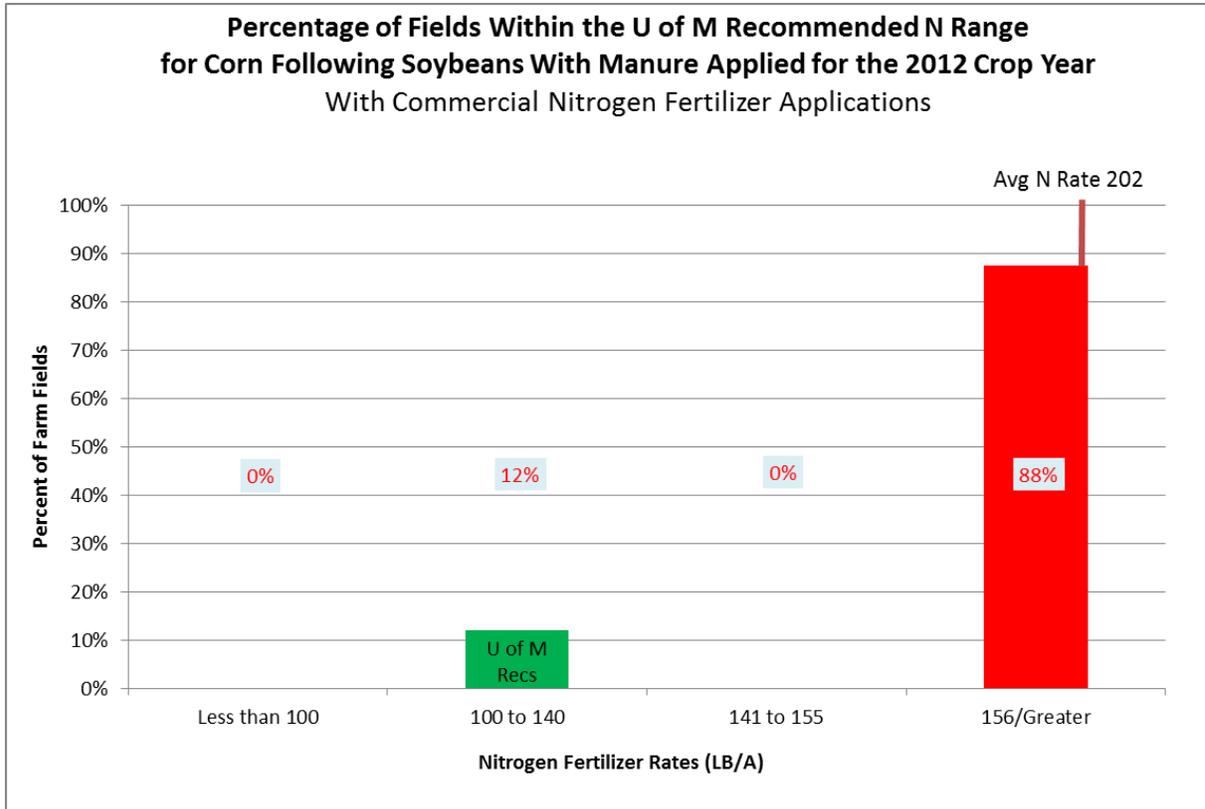


Figure 238. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 8 fields.

Table 218. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	190	No Data	175
Avg N Rate LB/A	No Data	140	No Data	211

Northwestern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the IRR BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Statewide: Corn Following Corn

Figure 239 details the distribution of nitrogen rates in Minnesota for corn following corn applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 219 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 239.

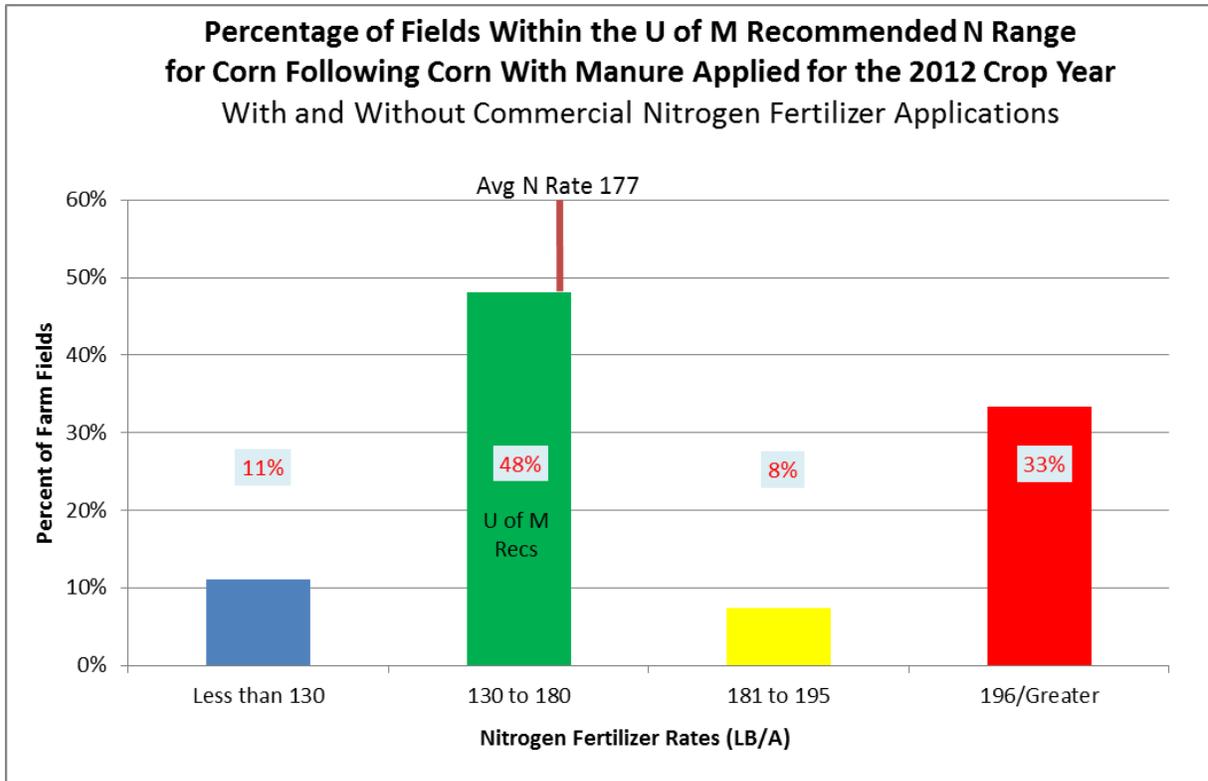


Figure 239. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 27 fields.

Table 219. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	172	180	198	176
Avg N Rate LB/A	95	162	192	223

Figure 240 details the distribution of nitrogen rates in Minnesota for corn following corn applied with hog manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 220 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 240.

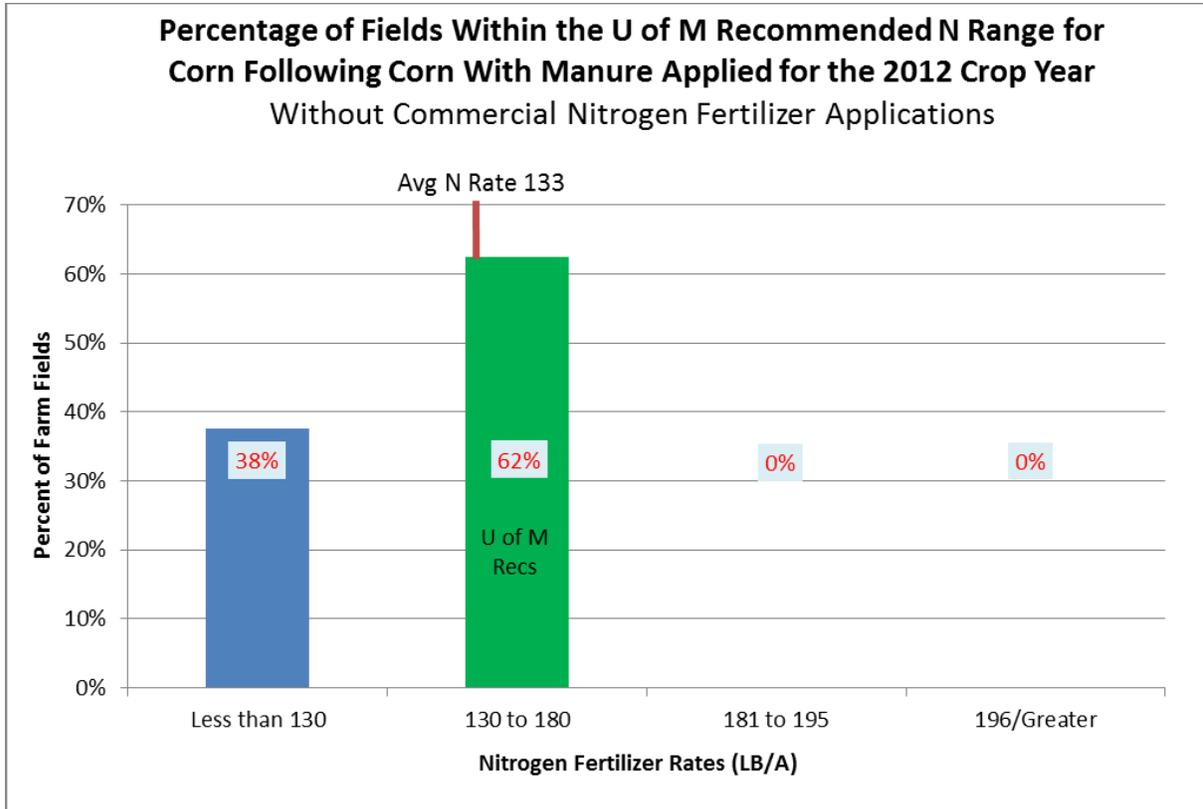


Figure 240. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.

Table 220. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	172	188	No Data	No Data
Avg N Rate LB/A	95	155	No Data	No Data

Figure 241 details the distribution of nitrogen rates in Minnesota for corn following corn applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 221 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 241.

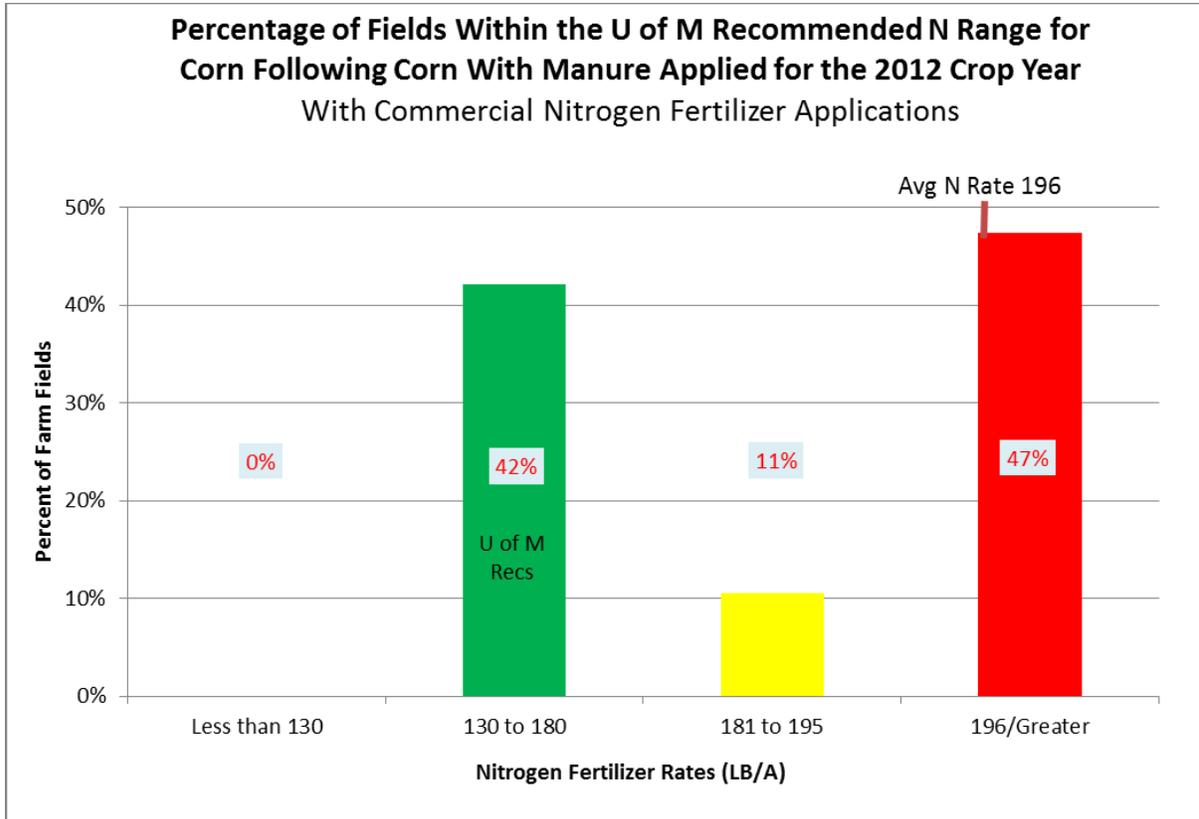


Figure 241. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2012: 19 fields.

Table 221. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	175	198	176
Avg N Rate LB/A	No Data	167	192	223

Southeastern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SE BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn

Figure 242 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 222 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 242.

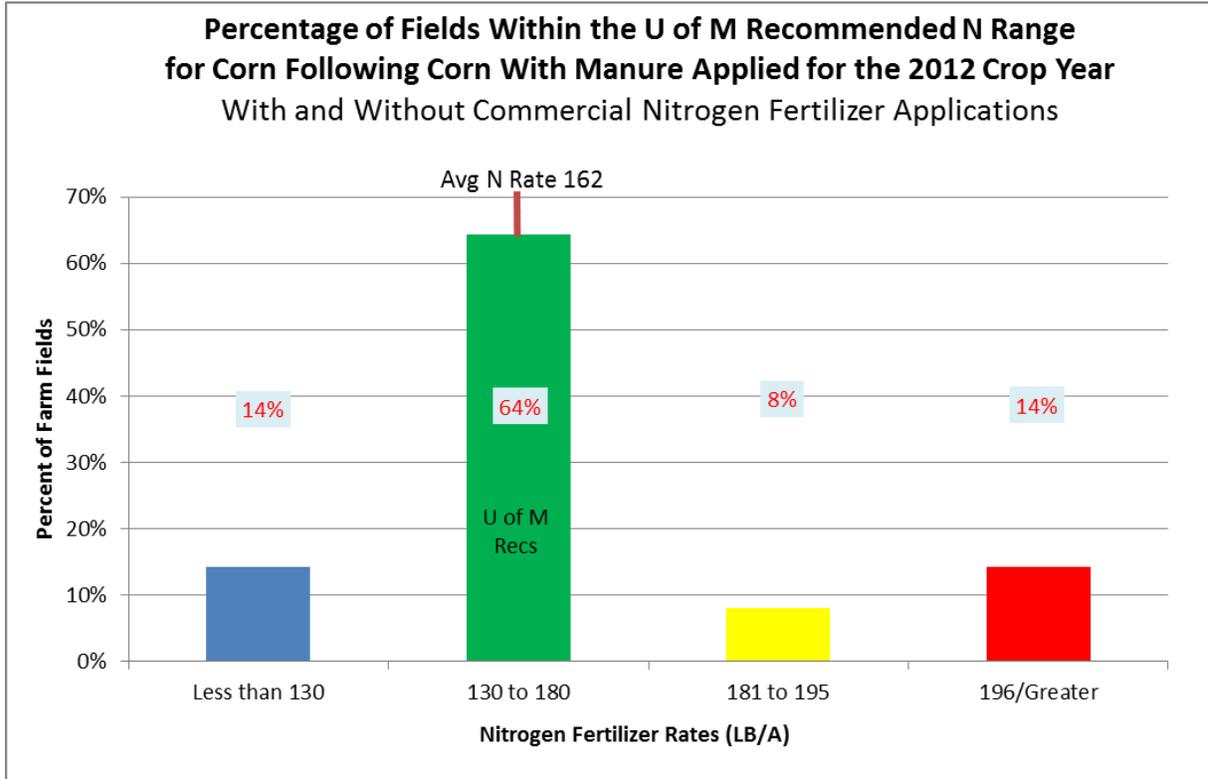


Figure 242. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 14 fields.

Table 222. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	163	187	185	183
Avg N Rate LB/A	83	161	189	233

Figure 243 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with hog manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 223 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 243.

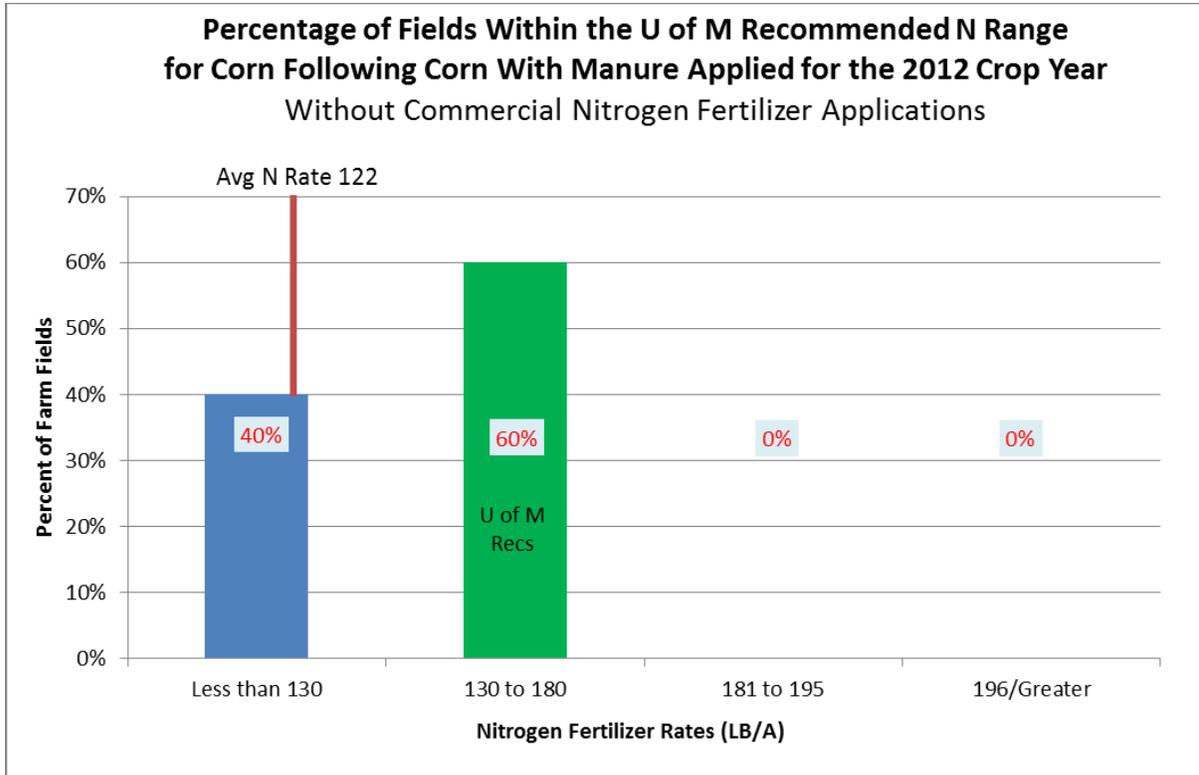


Figure 243. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2012: 5 fields.

Table 223. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	163	192	No Data	No Data
Avg N Rate LB/A	83	148	No Data	No Data

Figure 244 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 224 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 244.

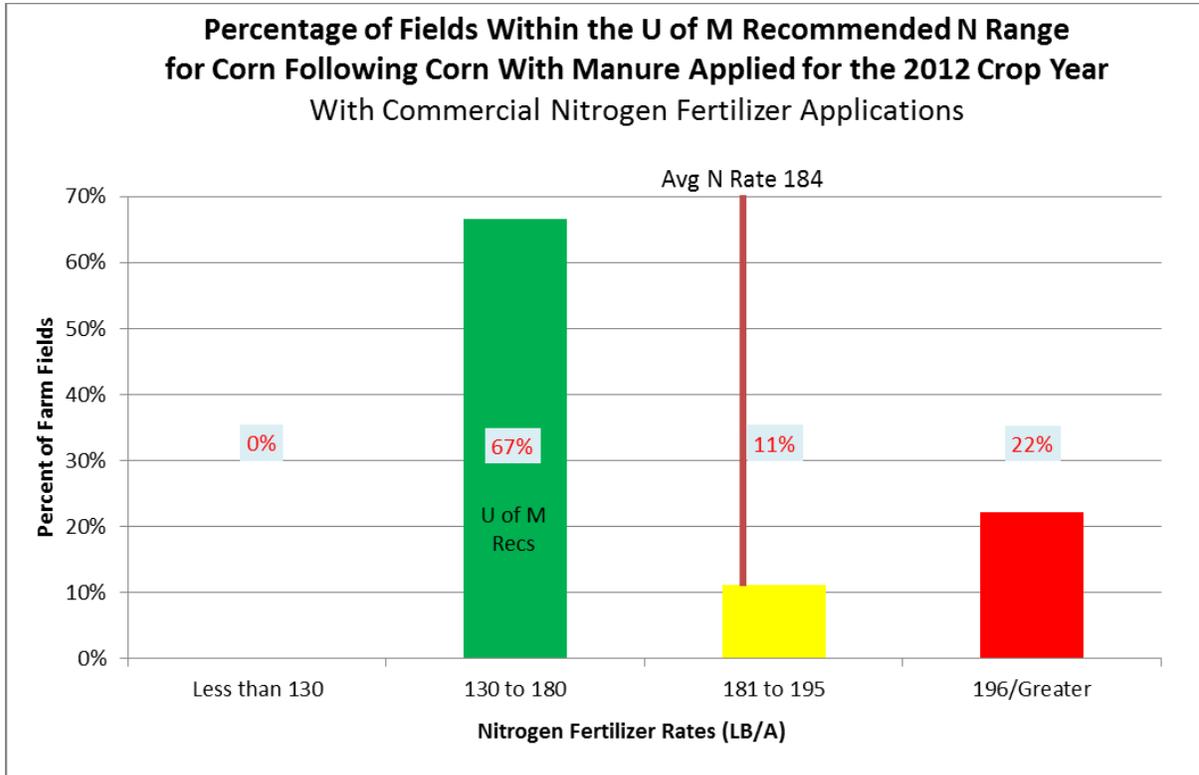


Figure 244. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2012: 9 fields.

Table 224. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SC BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	184	185	183
Avg N Rate LB/A	No Data	167	189	233

Southwestern and West Central Region: Corn Following Corn

Figure 245 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with hog manure or hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 225 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 245.

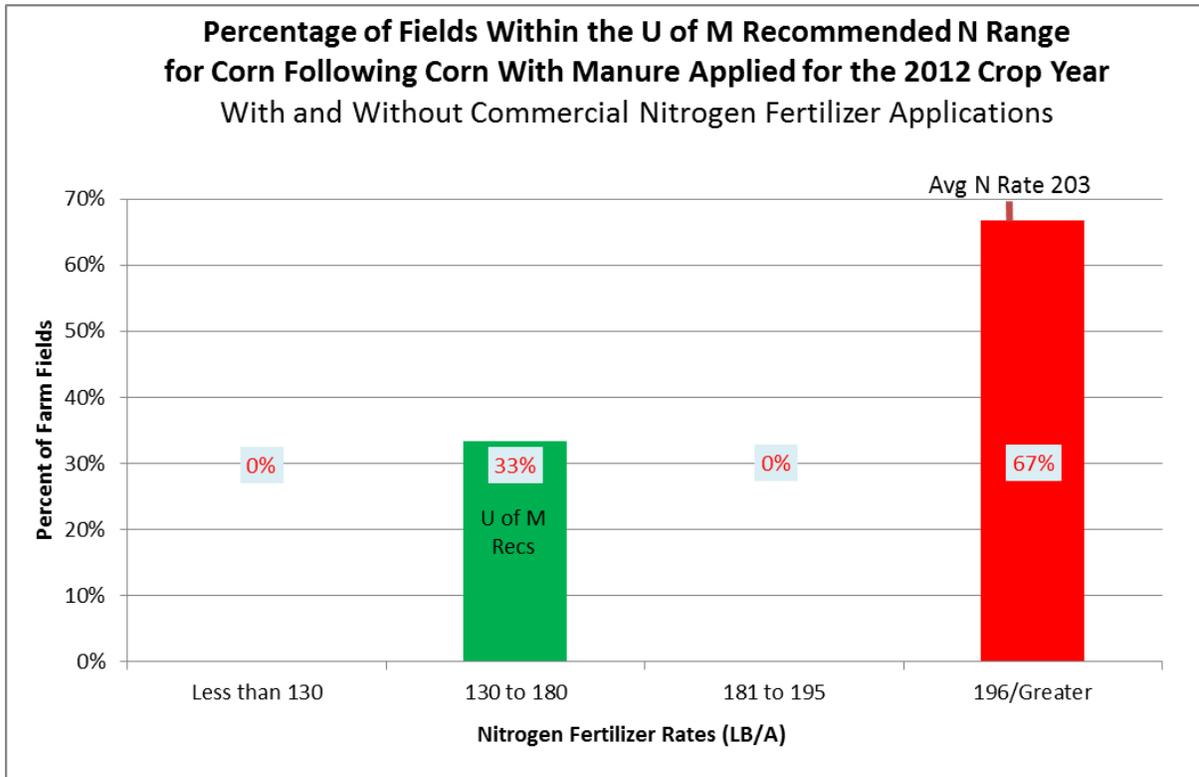


Figure 245. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 9 fields.

Table 225. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	156	No Data	173
Avg N Rate LB/A	No Data	167	No Data	221

Less than five farmers reported planting corn following corn in the SW BMP region on fields applied with hog manure and no commercial nitrogen fertilizer.

Figure 246 details the distribution of nitrogen rates in the SW BMP region for corn following corn applied with hog manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 226 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 246.

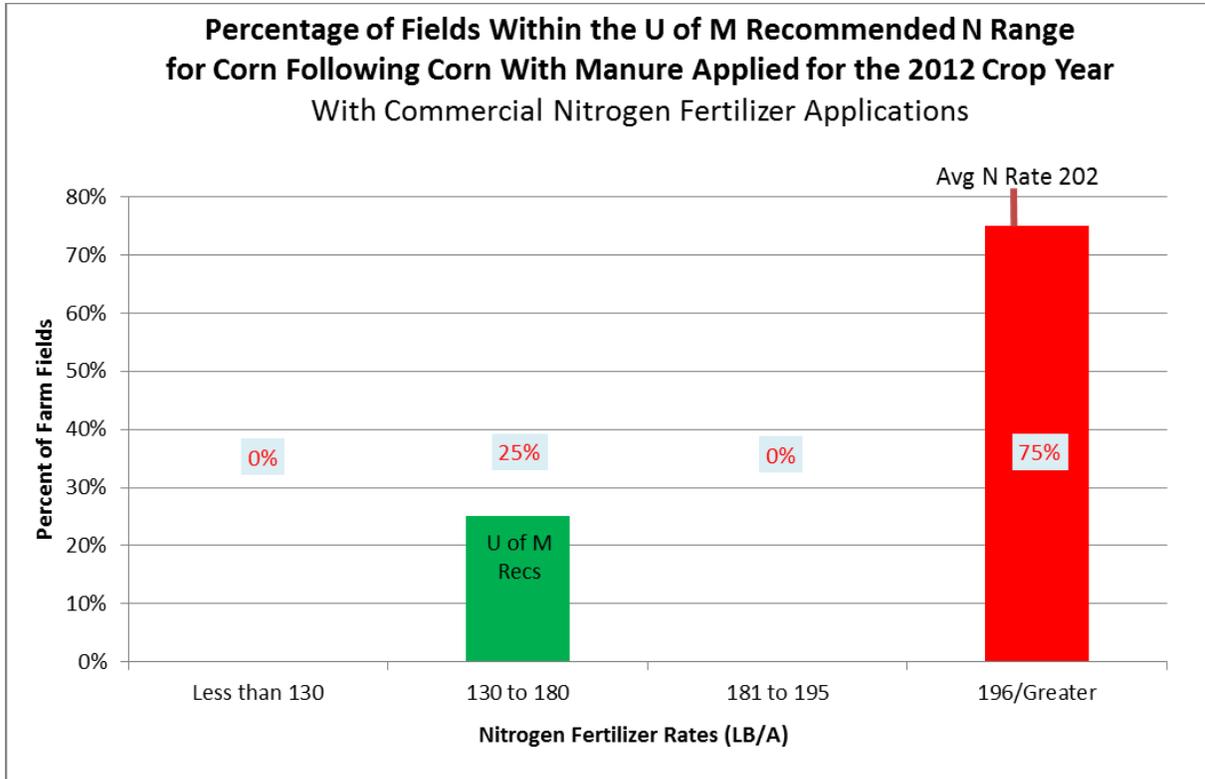


Figure 246. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2012: 8 fields.

Table 226. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2012 crop year in the SW BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	149	No Data	173
Avg N Rate LB/A	No Data	173	No Data	221

Northwestern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the NW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the IRR BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Statewide: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in Minnesota on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SE BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the IRR BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Statewide: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in Minnesota on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the IRR BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Statewide: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in Minnesota on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the NW BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the IRR BMP region on fields applied:

- With hog manure or with hog manure and commercial nitrogen fertilizer.
- With hog manure and no commercial nitrogen fertilizer.
- With hog manure and commercial nitrogen fertilizer.

Manure Applications from Poultry Manure Statewide: Corn Following Soybeans

Figure 247 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with poultry manure or poultry manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 227 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 247.

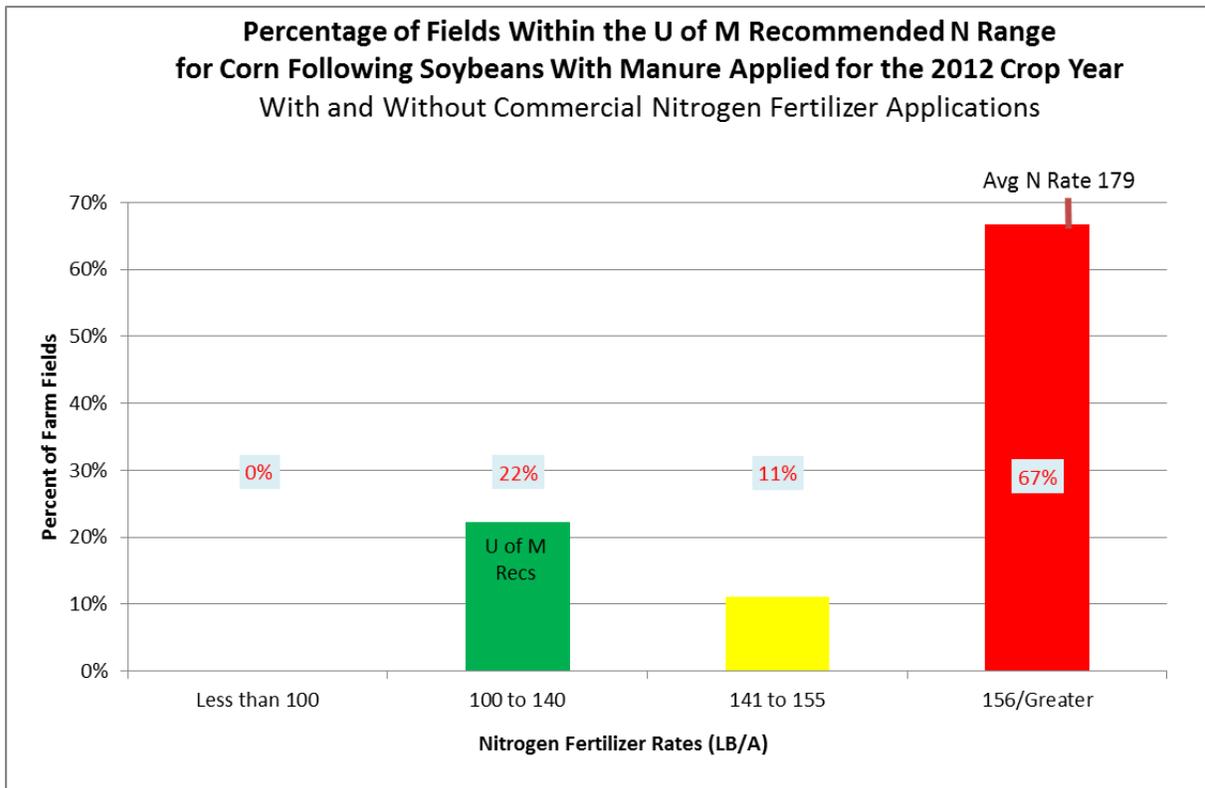


Figure 247. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 9 fields.

Table 227. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	160	150	165
Avg N Rate LB/A	No Data	130	150	200

Figure 248 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 228 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 248.

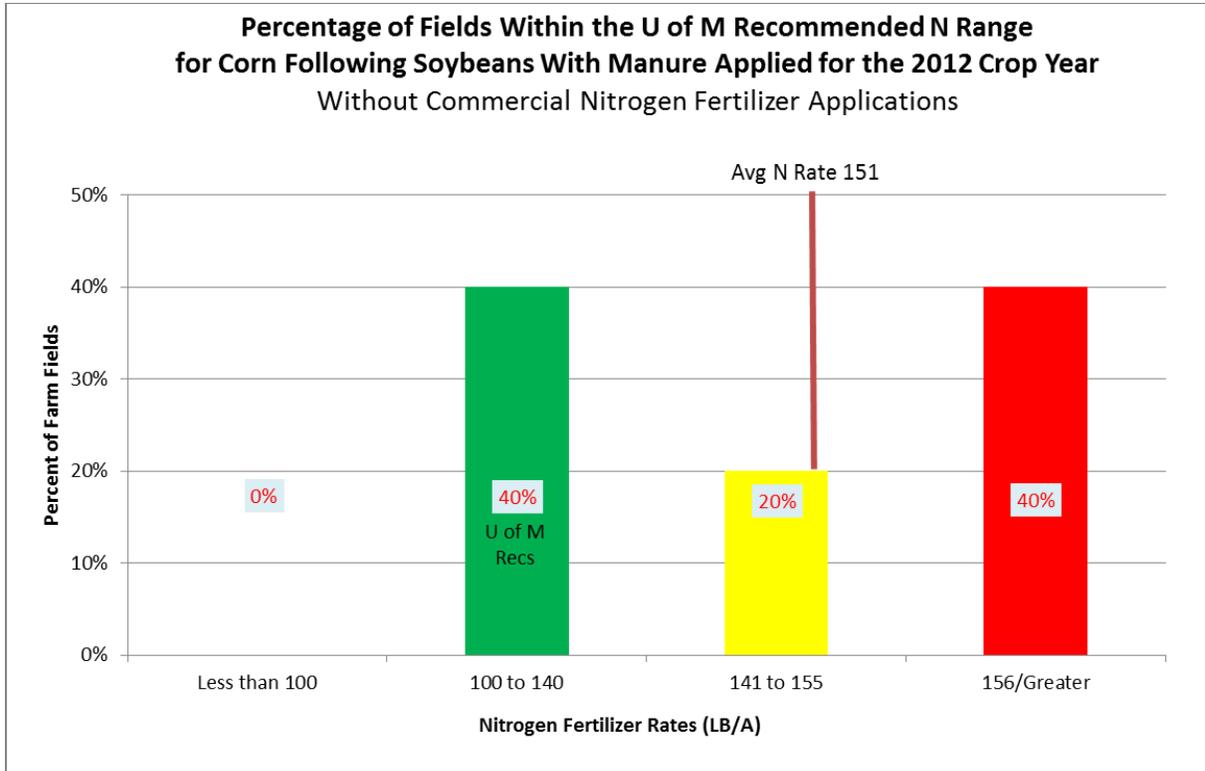


Figure 248. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer in Minnesota for 2012: 5 fields.

Table 228. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<100 LB/A	100-140 LB/A	141-155 LB/A	156/Greater LB/A
Avg Bu./Acre	No Data	160	150	169
Avg N Rate LB/A	No Data	130	150	173

Less than five farmers reported planting corn following soybeans in Minnesota on fields applied with poultry manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SE BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SC BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the SW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the NW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Soybeans

Less than five farmers reported planting corn following soybeans in the IRR BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Statewide: Corn Following Corn

Figure 249 details the distribution of nitrogen rates in Minnesota for corn following corn applied with poultry manure or poultry manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 229 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 249.

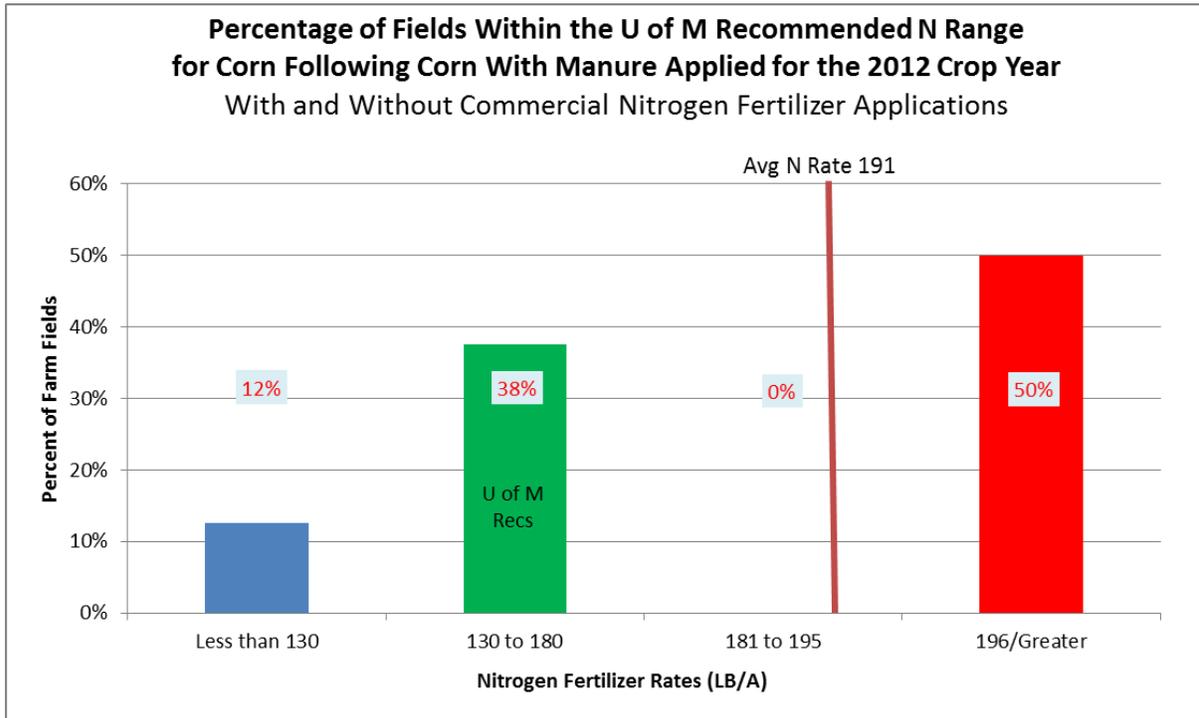


Figure 249. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 8 fields.

Table 229. Nitrogen rates and associated yields for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	100	141	No Data	171
Avg N Rate LB/A	80	151	No Data	248

Less than five farmers reported planting corn following corn in Minnesota on fields applied with poultry manure and no commercial nitrogen fertilizer.

Figure 250 details the distribution of nitrogen rates in Minnesota for corn following corn applied with poultry manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 230 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 250.

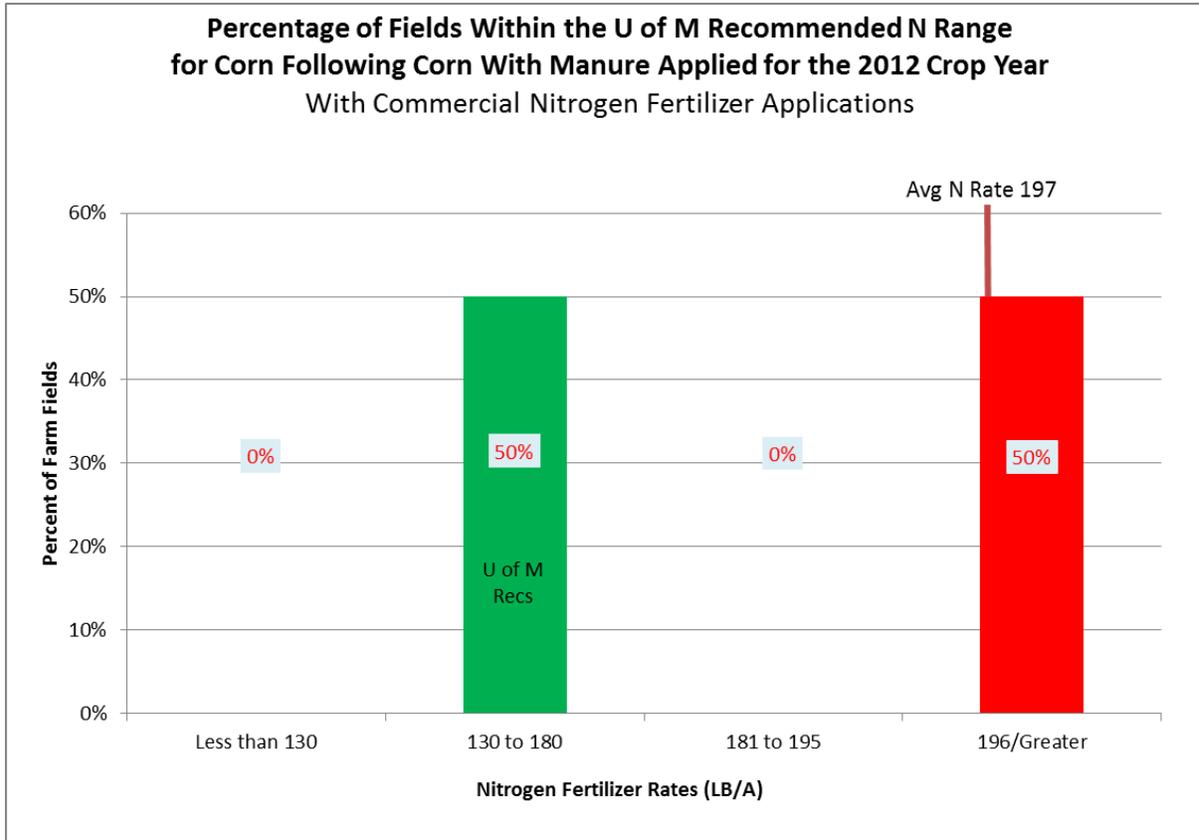


Figure 250. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure and commercial nitrogen fertilizer in Minnesota for 2012: 6 fields.

Table 230. Nitrogen rates and associated yields for corn following corn applied with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in Minnesota.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	141	No Data	163
Avg N Rate LB/A	No Data	151	No Data	243

Southeastern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SE BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SC BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the SW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn

Less than five farmers reported planting corn following corn in the NW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn

Figure 251 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with poultry manure or poultry manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 231 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 251.

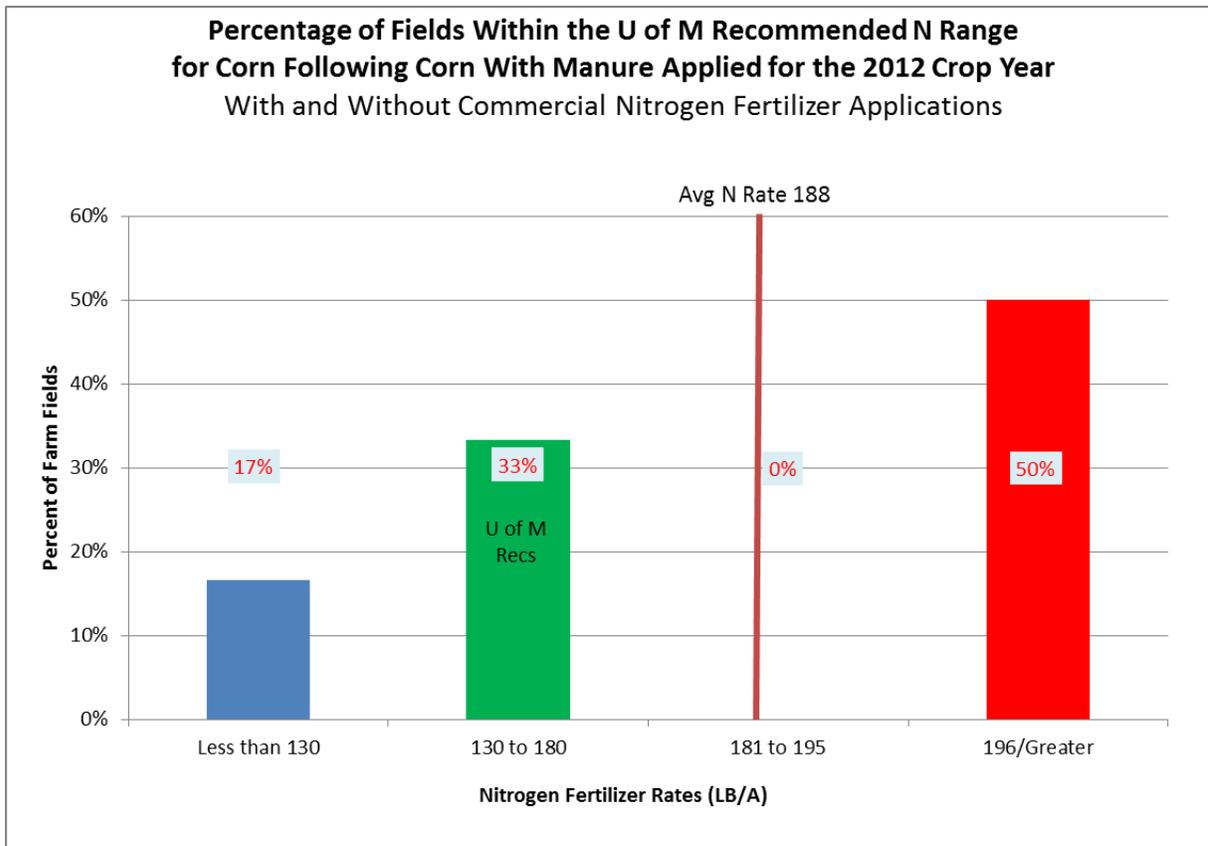


Figure 251. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in the SE BMP region for 2012: 6 fields.

Table 231. Nitrogen rates and associated yields for corn following corn applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	100	130	No Data	163
Avg N Rate LB/A	80	160	No Data	243

Less than five farmers reported planting corn following corn in the IRR BMP region on fields applied with poultry manure and no commercial nitrogen fertilizer.

Figure 252 details the distribution of nitrogen rates in the IRR BMP region for corn following corn applied with poultry manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 232 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 252.

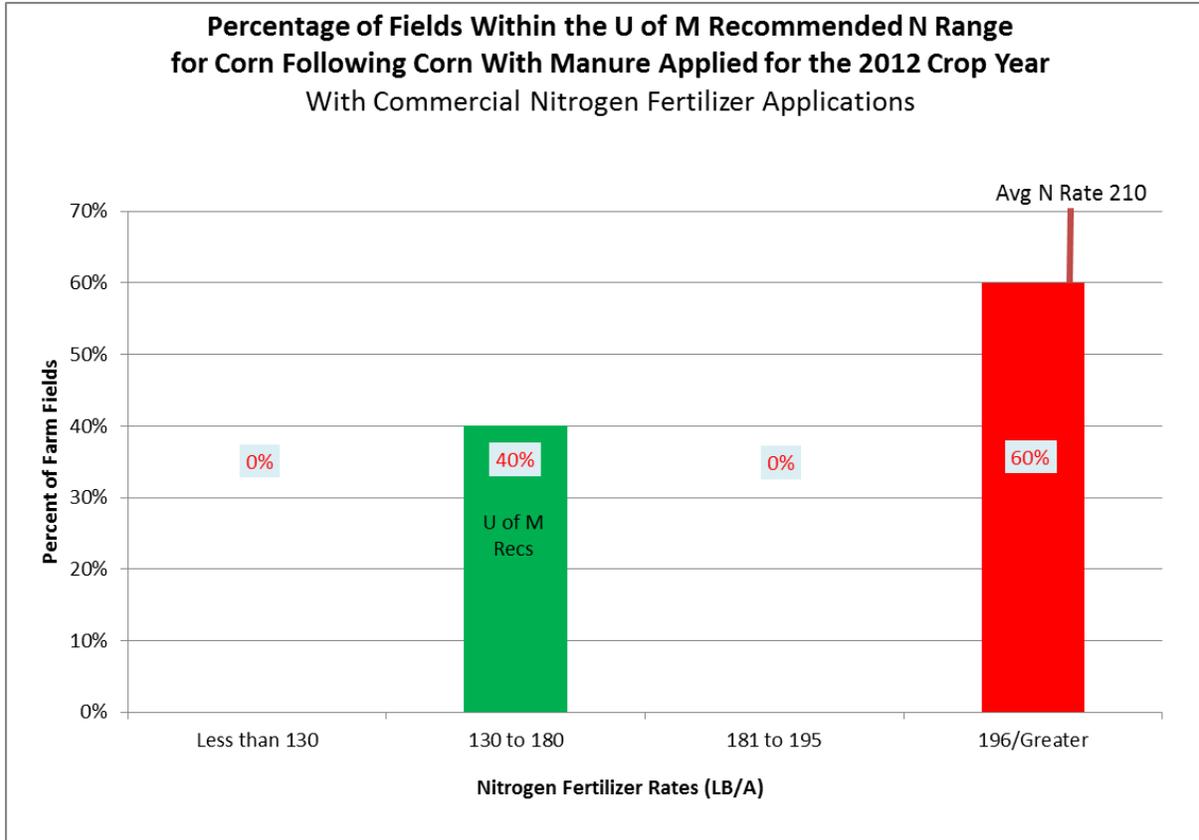


Figure 252. Percentage of fields within the U of M recommended N range for corn following corn applied with poultry manure and commercial nitrogen fertilizer in the IRR BMP region for 2012: 5 fields.

Table 232. Nitrogen rates and associated yields for corn following corn applied with poultry manure and commercial nitrogen fertilizer for the 2012 crop year in the IRR BMP region.

N Fertilizer Ranges	<130 LB/A	130-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	130	No Data	163
Avg N Rate LB/A	No Data	160	No Data	243

Statewide: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in Minnesota on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SE BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the NW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Corn Following Alfalfa

Less than five farmers reported planting corn following corn following alfalfa in the IRR BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Statewide: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in Minnesota on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SE BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SC BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the SW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the NW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa in the IRR BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Statewide: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in Minnesota on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southeastern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SE BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

South Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SC BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Southwestern and West Central Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the SW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Northwestern Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the NW BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Irrigated and Non-irrigated Sandy Soils Region: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in the IRR BMP region on fields applied:

- With poultry manure or with poultry manure and commercial nitrogen fertilizer.
- With poultry manure and no commercial nitrogen fertilizer.
- With poultry manure and commercial nitrogen fertilizer.

Use of Nitrogen Survey Data by Other Agencies

Other agencies such as the Minnesota Pollution Control Agency (PCA) and the U of M have analyzed survey data also. Below is a chart that is used in the Nitrogen Reduction Strategy Plan detailing various crop scenarios. This data is using a 0.10 to 0.15 commercial nitrogen fertilizer price to corn price ratio.

The PCA's analysis uses the Maximum Return to Nitrogen (MRTN) in both manured and non-manured fields. In the figure below, the non-manured fields are displayed as blue and gold bars divided by the MRTN recommended by the U of M, where nitrogen was applied at a rate less than the MRTN. For example, the MRTN for corn following soybeans is 100 pounds of nitrogen per acre. With the manured fields, displayed in the figure on the far right bar with the colors of brown and two shades of gold, and three MRTN bars, the total amount of nitrogen needed to achieve the MRTN is unchanged, but nitrogen can come from both the manure and commercial fertilizer. More than one MRTN is listed on this bar because previous crop is unknown. The lower MRTN would be for a previous crop of alfalfa, the middle MRTN would be for a previous crop of soybeans, and the upper MRTN would be for a previous crop of corn.

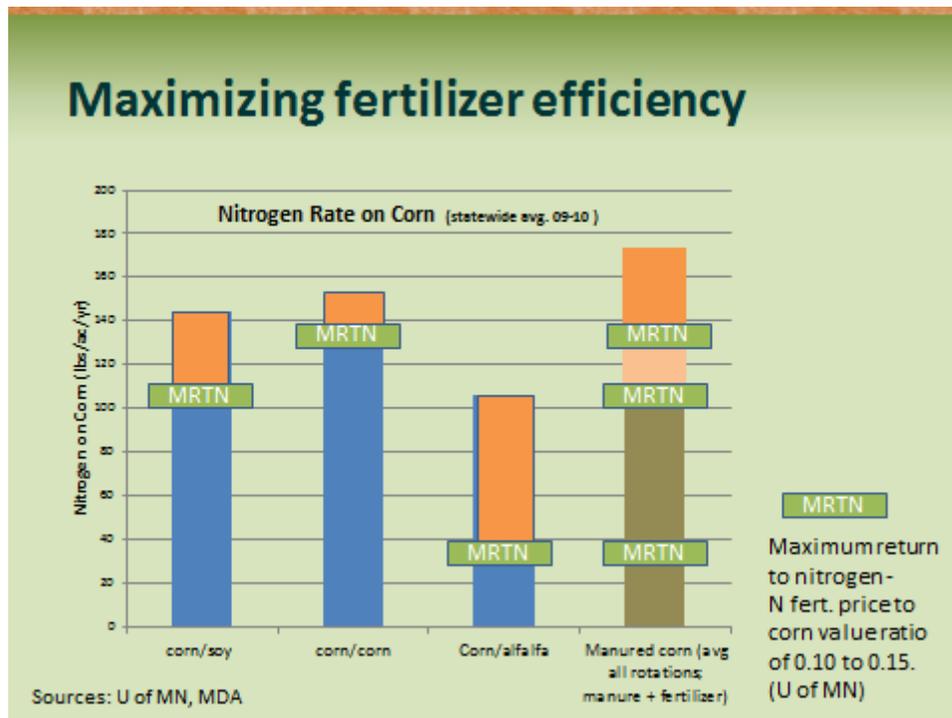


Figure 253. The Minnesota Pollution Control Agency's description on how to use the Maximum Return to Nitrogen (MRTN) on corn.

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711. The MDA is an equal opportunity employer and provider.