



Commercial Nitrogen and Manure Applications on Minnesota's 2014 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 2014 Corn Crop

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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 nitrogen 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

<https://www.mda.state.mn.us/sitecore/shell/Controls/Rich%20Text%20Editor/~/media/Files/protecting/cwf/2012nitrocorn.pdf>, 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, [2013 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/nitrogenbmps>. 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

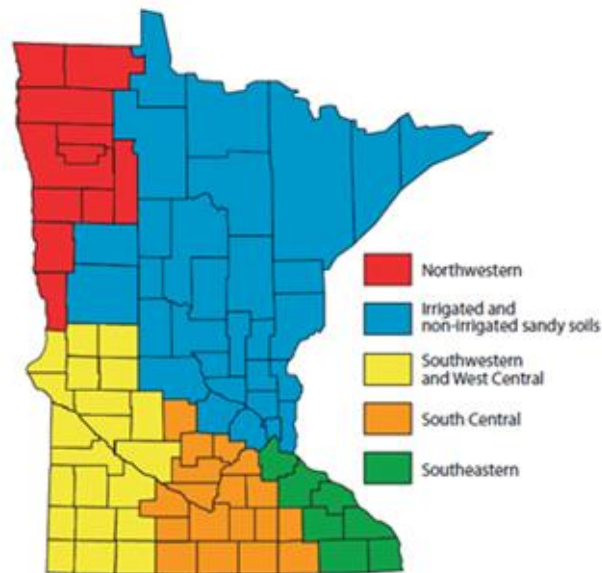


Figure 1. Minnesota nitrogen BMP regions.

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 2,100 farmers that raised corn and completed the survey in 2014. 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.

2014 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 2014* and the *2014 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 2014 corn acres. Over 2,100 corn farmers participated in the telephone survey and information was collected for 545,112 corn acres, representing seven percent of Minnesota's 7,550,000 corn acres. Survey questions focused on the 98 percent of the respondents that fertilized corn with manure and/or nitrogen. This was the fourth 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 2014 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 2014?” Then, farmers were asked “How many corn acres were planted for field corn in 2014?” Table 1 details the farmers who responded. These farmers grew corn and the corresponding acres of corn grown. Counties with no responses are not shown in any table or figure.

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	19	9,274
Kittson	NW	7	525
Mahnomen	NW	**	**
Marshall	NW	6	1,091
Norman	NW	10	4,808
Pennington	NW	**	**
Polk	NW	13	3,133
Red Lake	NW	**	**
Roseau	NW	**	**
Wilkin	NW	15	6,616
Totals/Averages	NW	84	28,406
Anoka	IRR	5	500
Becker	IRR	11	2,736
Beltrami	IRR	6	585
Benton	IRR	24	2,086
Cass	IRR	6	224
Chisago	IRR	12	984
Crow Wing	IRR	6	882
Hennepin	IRR	**	**
Hubbard	IRR	**	**
Isanti	IRR	14	3,039
Kanabec	IRR	11	830
Mille Lacs	IRR	11	1,257
Morrison	IRR	76	9,489
Otter Tail	IRR	71	10,015
Pine	IRR	18	1,892
Sherburne	IRR	8	2,998
Stearns	IRR	114	18,022

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
Todd	IRR	49	4,851
Wadena	IRR	13	937
Washington	IRR	12	2,104
Wright	IRR	32	4,685
Totals/Averages	IRR	506	68,775
Big Stone	SW	11	3,775
Chippewa	SW	28	10,161
Cottonwood	SW	34	11,272
Douglas	SW	34	6,222
Grant	SW	9	3,932
Jackson	SW	45	17,575
Kandiyohi	SW	28	10,186
Lac qui Parle	SW	28	9,099
Lincoln	SW	19	5,804
Lyon	SW	29	7,486
Murray	SW	35	11,799
Nobles	SW	52	13,531
Pipestone	SW	24	7,526
Pope	SW	29	9,544
Redwood	SW	61	18,011
Renville	SW	46	18,675
Rock	SW	23	6,480
Stevens	SW	26	11,176
Swift	SW	25	11,505
Traverse	SW	14	6,904
Yellow Medicine	SW	30	14,155
Totals/Averages	SW	630	214,818
Blue Earth	SC	46	16,662
Brown	SC	51	11,555
Carver	SC	26	2,461
Dodge	SC	20	5,116
Faribault	SC	32	13,185
Freeborn	SC	47	15,105
Le Sueur	SC	27	4,554
Martin	SC	34	12,387
McLeod	SC	32	8,149
Meeker	SC	30	9,072
Mower	SC	30	11,560
Nicollet	SC	33	12,547
Rice	SC	33	8,123
Scott	SC	18	3,353
Sibley	SC	39	8,625
Steele	SC	28	11,120
Waseca	SC	28	8,531
Watonwan	SC	26	9,508
Totals/Averages	SC	580	171,613
Dakota	SE	23	6,877
Fillmore	SE	54	12,985
Goodhue	SE	62	14,540
Houston	SE	33	3,758
Olmsted	SE	40	7,822
Wabasha	SE	42	8,022
Winona	SE	54	7,496

County	BMP Region	Number of Respondents	Number of Corn Acres
Totals/Averages	SE	308	61,500
Totals/Averages	State	2,108	545,112

** 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	16	8,495
Kittson	NW	6	415
Mahnomen	NW	**	**
Marshall	NW	**	**
Norman	NW	5	1,293
Pennington	NW	**	**
Polk	NW	7	1,857
Red Lake	NW	**	**
Roseau	NW	**	**
Wilkin	NW	13	6,266
Totals/Averages	NW	61	22,059
Anoka	IRR	**	**
Becker	IRR	5	1,786
Beltrami	IRR	**	**
Benton	IRR	14	1,349
Cass	IRR	5	179
Chisago	IRR	10	872
Crow Wing	IRR	5	837
Hennepin	IRR	**	**
Hubbard	IRR	**	**
Isanti	IRR	10	2,348
Kanabec	IRR	**	**
Mille Lacs	IRR	9	1,029
Morrison	IRR	34	2,975
Otter Tail	IRR	45	7,636
Pine	IRR	10	1,214
Sherburne	IRR	6	2,573
Stearns	IRR	40	6,741
Todd	IRR	32	3,735
Wadena	IRR	6	628
Washington	IRR	9	1,962
Wright	IRR	23	3,638
Totals/Averages	IRR	277	41,077
Big Stone	SW	9	3,460
Chippewa	SW	24	9,779
Cottonwood	SW	24	9,122
Douglas	SW	20	4,013
Grant	SW	9	3,932
Jackson	SW	37	16,062

County	BMP Region	Number of Respondents	Number of Corn Acres
Kandiyohi	SW	17	6,611
Lac qui Parle	SW	20	6,202
Lincoln	SW	14	4,459
Lyon	SW	24	6,601
Murray	SW	30	10,199
Nobles	SW	36	8,761
Pipestone	SW	17	4,861
Pope	SW	24	8,718
Redwood	SW	51	16,370
Renville	SW	36	15,816
Rock	SW	12	4,156
Stevens	SW	20	8,991
Swift	SW	18	9,473
Traverse	SW	11	6,705
Yellow Medicine	SW	25	12,729
Totals/Averages	SW	478	177,020
Blue Earth	SC	38	15,229
Brown	SC	33	8,156
Carver	SC	14	1,631
Dodge	SC	14	4,027
Faribault	SC	24	11,077
Freeborn	SC	40	14,476
Le Sueur	SC	20	3,582
Martin	SC	30	12,100
McLeod	SC	19	6,394
Meeker	SC	17	6,589
Mower	SC	21	9,105
Nicollet	SC	28	11,096
Rice	SC	26	5,654
Scott	SC	12	2,949
Sibley	SC	33	8,020
Steele	SC	17	9,728
Waseca	SC	18	6,046
Watonwan	SC	19	7,595
Totals/Averages	SC	423	143,454
Dakota	SE	17	6,184
Fillmore	SE	36	10,446
Goodhue	SE	46	12,381
Houston	SE	22	2,500
Olmsted	SE	28	5,445
Wabasha	SE	31	6,968
Winona	SE	36	4,874
Totals/Averages	SE	216	48,798
Totals/Averages	Without Manure	1,455	432,408

** 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	Percent of Respondents
Northwestern	Yes	73
Northwestern	No	27
Irrigated and non-irrigated sandy soils	Yes	55
Irrigated and non-irrigated sandy soils	No	45
South Western and West Central	Yes	76
South Western and West Central	No	24
South Central	Yes	73
South Central	No	27
Southeastern	Yes	70
Southeastern	No	30
Statewide	Yes	69
Statewide	No	31

Table 4 details the previous crop planted before the current corn crop by BMP region and the corresponding yield. For the previous crop of corn/alfalfa, the definition would be corn in 2014, corn in 2013 and alfalfa in 2012.

Table 4. Percent of fields by previous crop and the corresponding corn yields in 2014.

BMP Region	Previous Crop	Percent of Fields	Average Corn Yield Bushels per Acre
Northwestern	Soybeans	51	134
Northwestern	Corn	11	116
Northwestern	Corn/Alfalfa	**	**
Northwestern	Alfalfa	**	**
Northwestern	Small Grains	15	128
Northwestern	Other	18	134
Irrigated and Non-irrigated Sandy Soils	Soybeans	40	130
Irrigated and Non-irrigated Sandy Soils	Corn	33	125
Irrigated and Non-irrigated Sandy Soils	Corn/Alfalfa	6	138
Irrigated and Non-irrigated Sandy Soils	Alfalfa	9	127
Irrigated and Non-irrigated Sandy Soils	Small Grains	4	136
Irrigated and Non-irrigated Sandy Soils	Other	8	135
South Western and West Central	Soybeans	72	164
South Western and West Central	Corn	19	167
South Western and West Central	Corn/Alfalfa	2	175
South Western and West Central	Alfalfa	3	156
South Western and West Central	Small Grains	1	143
South Western and West Central	Other	3	154
South Central	Soybeans	67	169
South Central	Corn	24	171
South Central	Corn/Alfalfa	3	162
South Central	Alfalfa	1	172
South Central	Small Grains	1	172
South Central	Other	4	164
Southeastern	Soybeans	43	175
Southeastern	Corn	29	176
Southeastern	Corn/Alfalfa	11	164
Southeastern	Alfalfa	10	172
Southeastern	Small Grains	**	**
Southeastern	Other	6	166
Statewide	Soybeans	59	161
Statewide	Corn	24	158
Statewide	Corn/Alfalfa	5	157
Statewide	Alfalfa	5	151
Statewide	Small Grains	2	142
Statewide	Other	5	150

** 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	Percent of Respondents
Northwestern	Yes	97
Northwestern	No	3
Irrigated and non-irrigated sandy soils	Yes	92
Irrigated and non-irrigated sandy soils	No	8
Southwestern and West Central	Yes	97
Southwestern and West Central	No	3
South Central	Yes	98
South Central	No	2
Southeastern	Yes	96
Southeastern	No	4
Statewide	Yes	96
Statewide	No	4

Table 6 details the percent of respondents using variable rate nitrogen applications for each BMP region.

Table 6. Variable rate nitrogen applications by BMP region.

BMP Region	Variable Rate Nitrogen Application	Percent of Respondents
Northwestern	Variable rate	50
Northwestern	One rate	50
Irrigated and non-irrigated sandy soils	Variable rate	45
Irrigated and non-irrigated sandy soils	One rate	55
Southwestern and West Central	Variable rate	52
Southwestern and West Central	One rate	48
South Central	Variable rate	51
South Central	One rate	49
Southeastern	Variable rate	49
Southeastern	One rate	51
Statewide	Variable rate	50
Statewide	One rate	50

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	130	131
Irrigated and non-irrigated sandy soils	118	130
Southwestern and West Central	147	165
South Central	153	170
Southeastern	148	173
Statewide	143	160

Table 8 details the nitrogen fertilizer rates and corn yields by BMP region on corn following various crops. For the previous crop of Corn/Alfalfa, the definition would be corn in 2014, corn in 2013 and alfalfa in 2012.

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	134
Northwestern	Corn	145	119
Northwestern	Corn/Alfalfa	**	**
Northwestern	Alfalfa	**	**
Northwestern	Small Grains	119	128
Northwestern	Other	133	137
Irrigated and Non-irrigated Sandy Soils	Soybeans	121	131
Irrigated and Non-irrigated Sandy Soils	Corn	124	126
Irrigated and Non-irrigated Sandy Soils	Corn/Alfalfa	119	137
Irrigated and Non-irrigated Sandy Soils	Alfalfa	101	130
Irrigated and Non-irrigated Sandy Soils	Small Grains	85	134
Irrigated and Non-irrigated Sandy Soils	Other	113	136
Southwestern and West Central	Soybeans	146	165
Southwestern and West Central	Corn	160	167
Southwestern and West Central	Corn/Alfalfa	133	175
Southwestern and West Central	Alfalfa	98	157
Southwestern and West Central	Small Grains	124	143
Southwestern and West Central	Other	149	152
South Central	Soybeans	150	169
South Central	Corn	165	171
South Central	Corn/Alfalfa	126	163
South Central	Alfalfa	**	**
South Central	Small Grains	171	185
South Central	Other	145	164
Southeastern	Soybeans	147	175
Southeastern	Corn	164	175
Southeastern	Corn/Alfalfa	135	164
Southeastern	Alfalfa	117	173
Southeastern	Small Grains	**	**
Southeastern	Other	141	172
Statewide	Soybeans	144	162
Statewide	Corn	153	159
Statewide	Corn/Alfalfa	129	158
Statewide	Alfalfa	106	152
Statewide	Small Grains	119	142
Statewide	Other	134	152

** Less than five responses.

The University of Minnesota (U of M) has developed Best Management Practices (BMPs) 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 2014 to those U of M guidelines for corn. These guidelines were updated in the fall of 2016. This report is based on the U of M recommendations as shown in 2014, for more information on the guidelines:

<http://www.extension.umn.edu/agriculture/nutrient-management/Docs/BU-06240-S-1.pdf>

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 ratio.

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.

²Kaiser, et.al. 2011, Fertilizer Guidelines for Agronomic Crops in Minnesota, pages 15-18, University of Minnesota Extension, BU-06240-S

Figure 2 details the distribution of nitrogen fertilizer rate compared to the U of M guidelines for corn following a variety of crops in 2014 using a “nitrogen to corn price ratio” of 0.05. This format will be used for all chart analysis in this report.

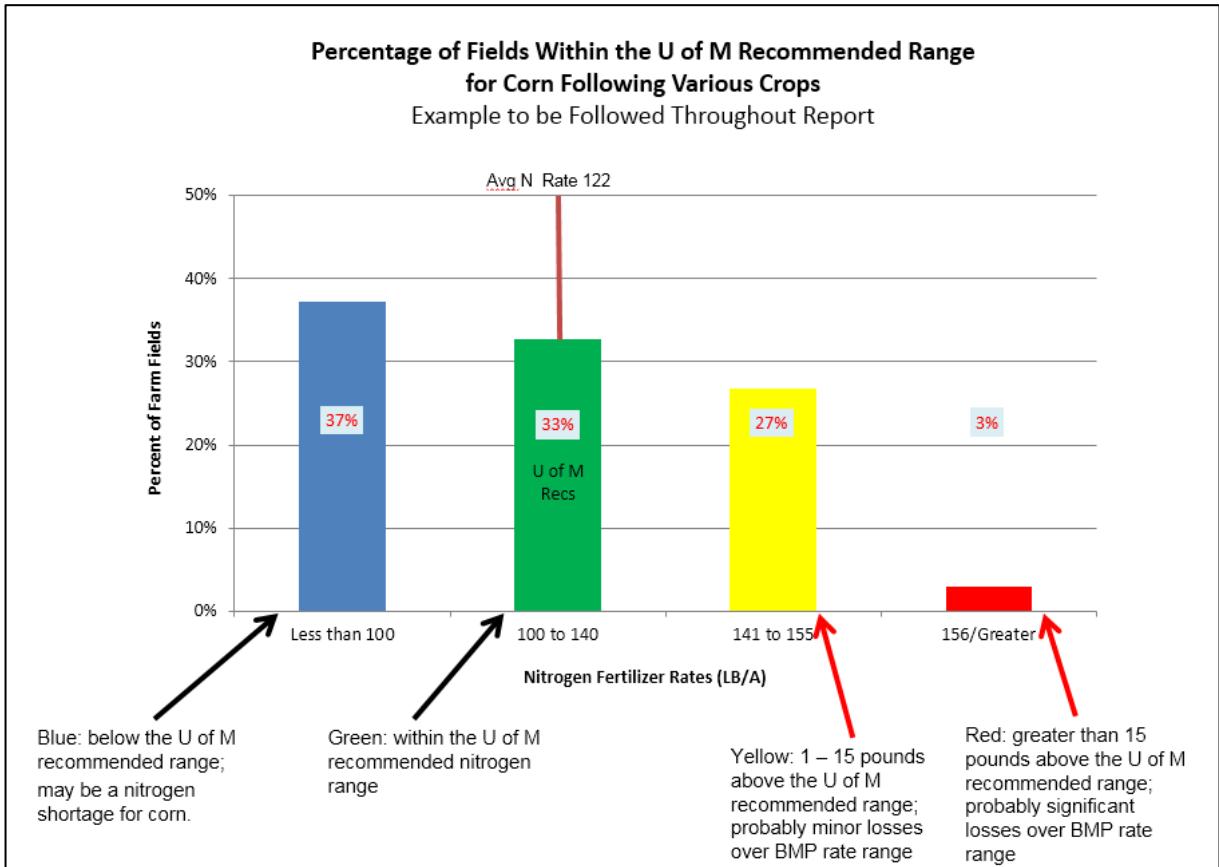


Figure 2. An example of analysis for the U of M recommended nitrogen application rate and ranges of nitrogen compared to farm field nitrogen rates.

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.

The nitrogen rates that are compared to for analysis are based on the U of M recommendations from 2014. In 2016, these rates were updated to reflect a higher nitrogen rate recommendation including the MRTN.

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/Docs/BU-06240-S-1.pdf>

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 2014 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 is a highly productive soil. 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, 2012 or 2013.
- **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.
 - **Beef manure** is the most common type of manure reported during the 2014 survey.
 - **Dairy manure** is the second most common type of manure reported during the 2014 survey.
 - **Hog manure** is also a fairly common type of manure source reported during the 2014 survey.
 - **Poultry manure** is the final type of manure reported during the 2014 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 2014 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 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, sixty percent of the fields reported corn following soybeans (Figure 3). There were 1,001 fields surveyed in Minnesota.

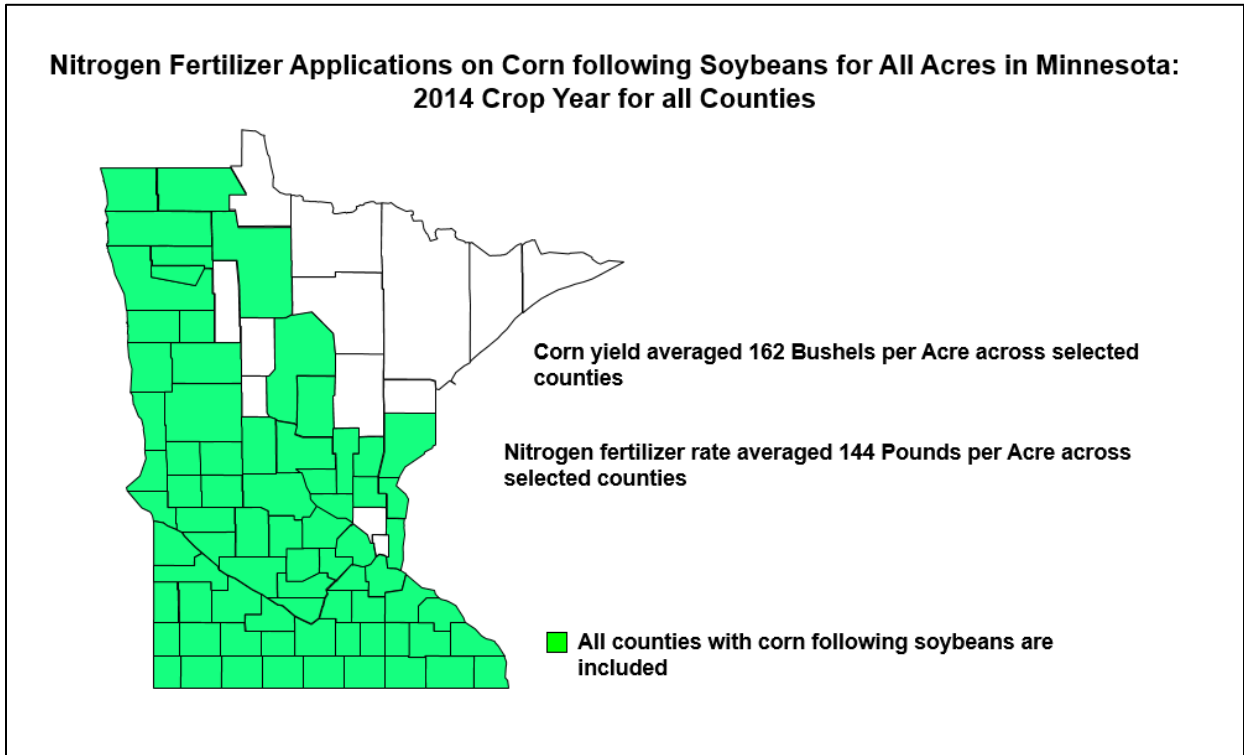


Figure 3. The corn yield averaged 162 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre on fields with corn following soybeans in Minnesota.

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.

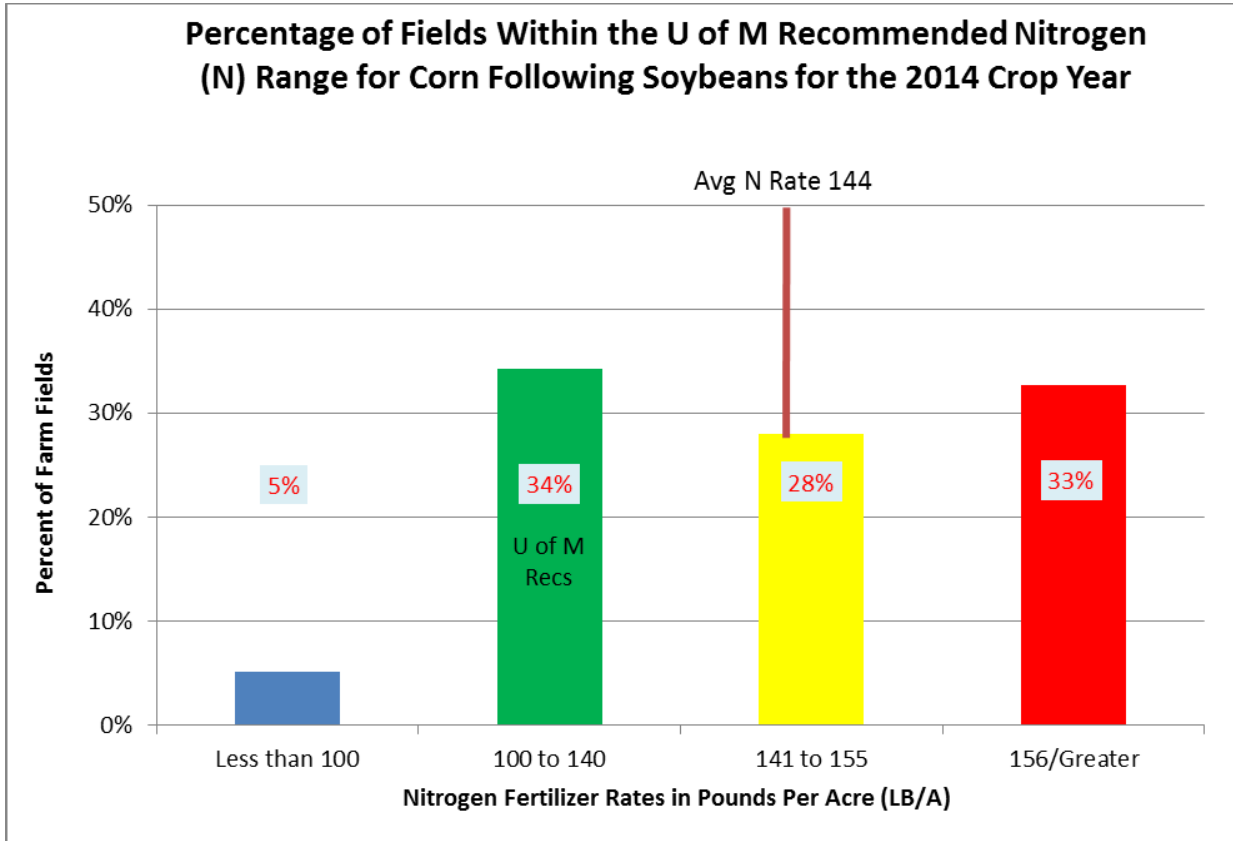


Figure 4. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in Minnesota for 2014: 1,001 fields.

Table 9. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	120	154	168	172
Avg Nitrogen(N)-Rate LB/Acre (A)	77	126	149	169

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.

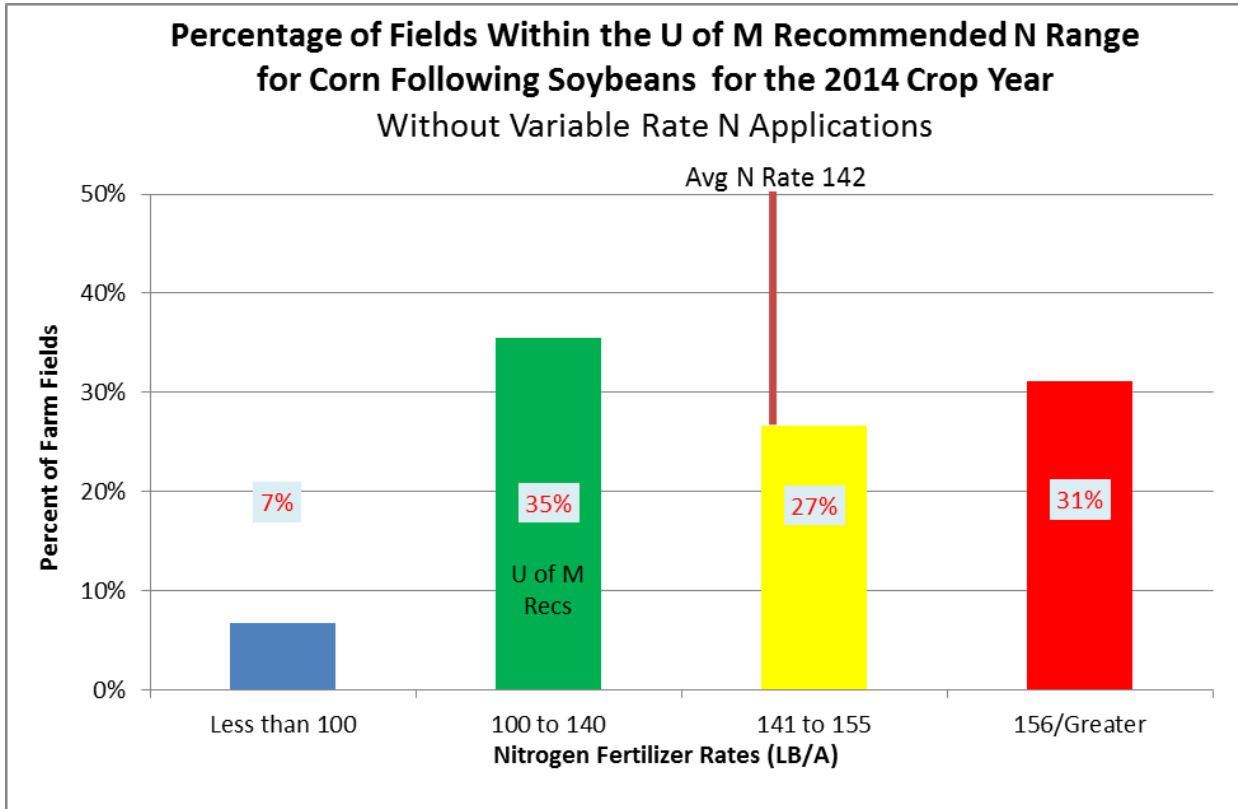


Figure 5. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in Minnesota for 2014: 491 fields.

Table 10. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	120	152	169	172
Avg N Rate LB/A	74	126	150	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.

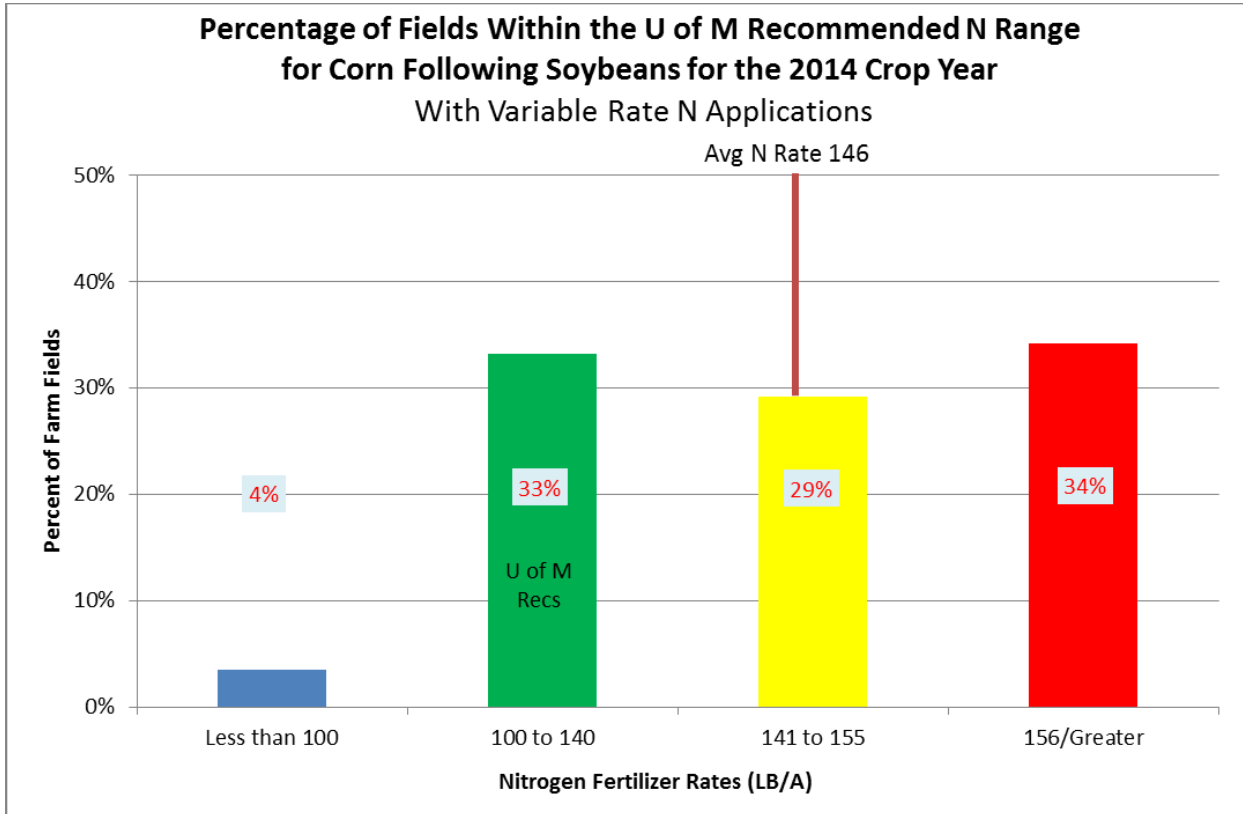


Figure 6. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in Minnesota for 2014: 510 fields.

Table 11. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2014 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	120	156	168	172
Avg N Rate LB/A	82	126	149	169

Southeastern Region: Corn Following Soybeans

There were 120 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.

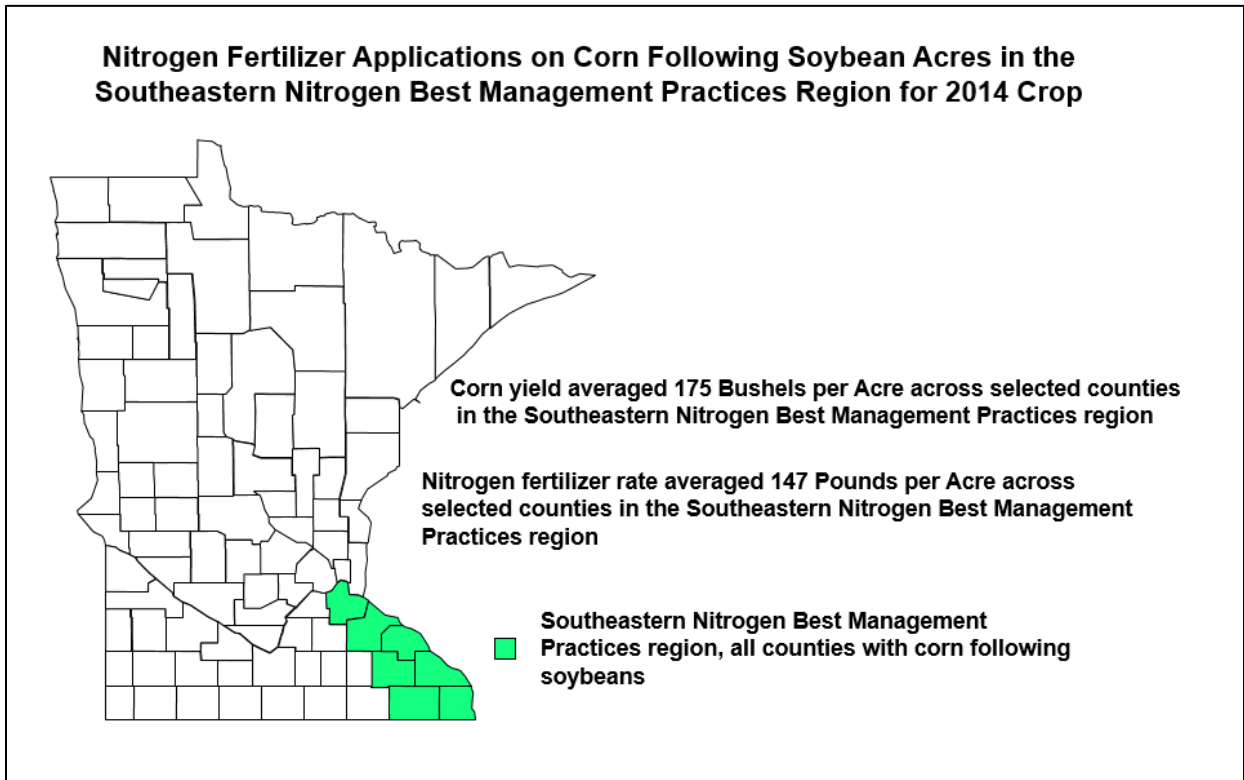


Figure 7. The corn yield averaged 175 bushels per acre and the nitrogen fertilizer rate averaged 147 pounds per acre in the SE BMP region.

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.

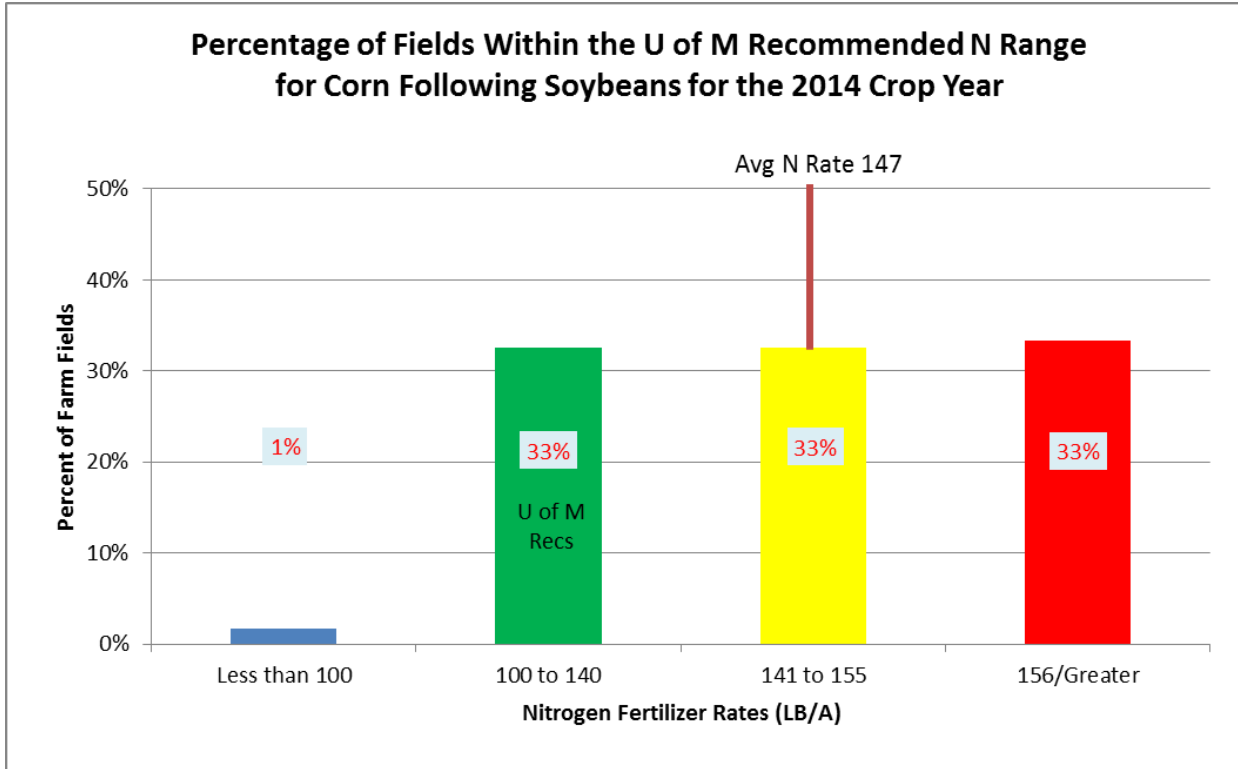


Figure 8. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SE BMP region for 2014: 120 fields.

Table 12. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	139	166	179	180
Avg N Rate LB/A	82	123	150	170

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.

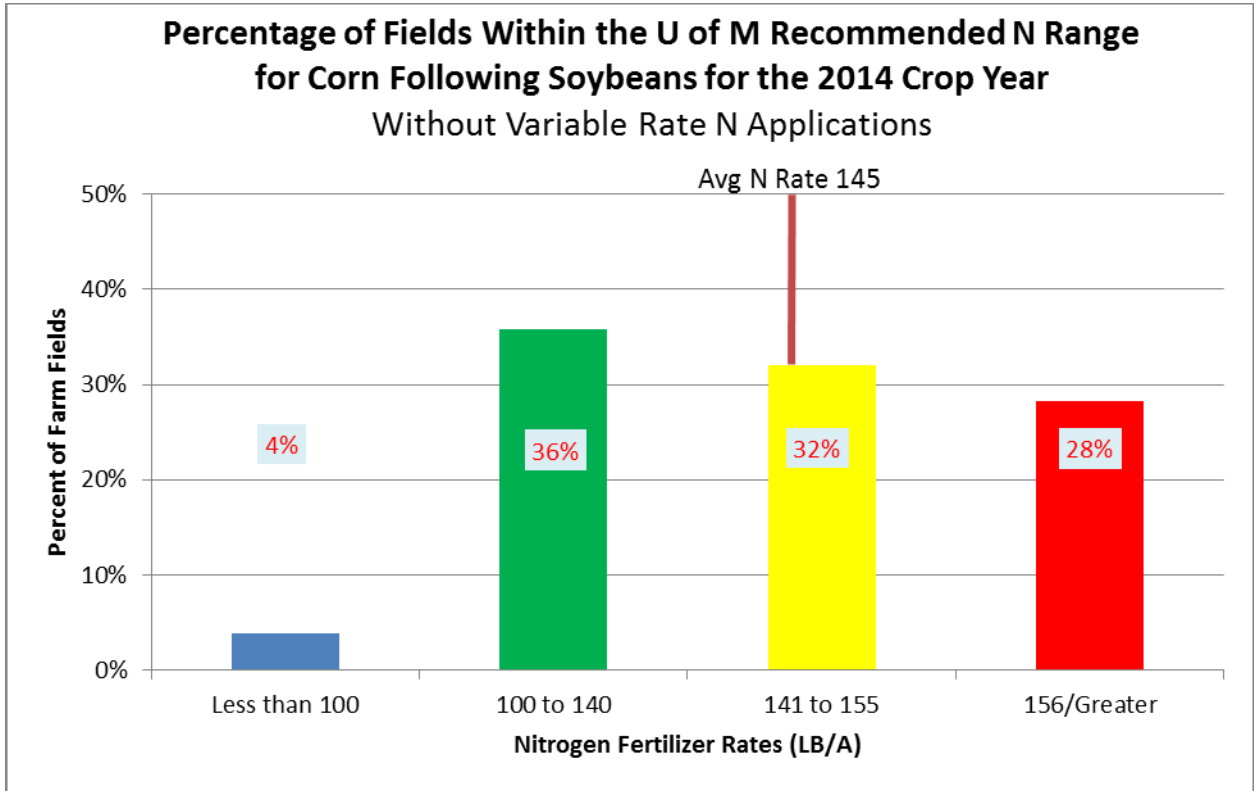


Figure 9. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SE BMP region for 2014: 53 fields.

Table 13. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	139	165	177	185
Avg N Rate LB/A	82	126	149	175

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.

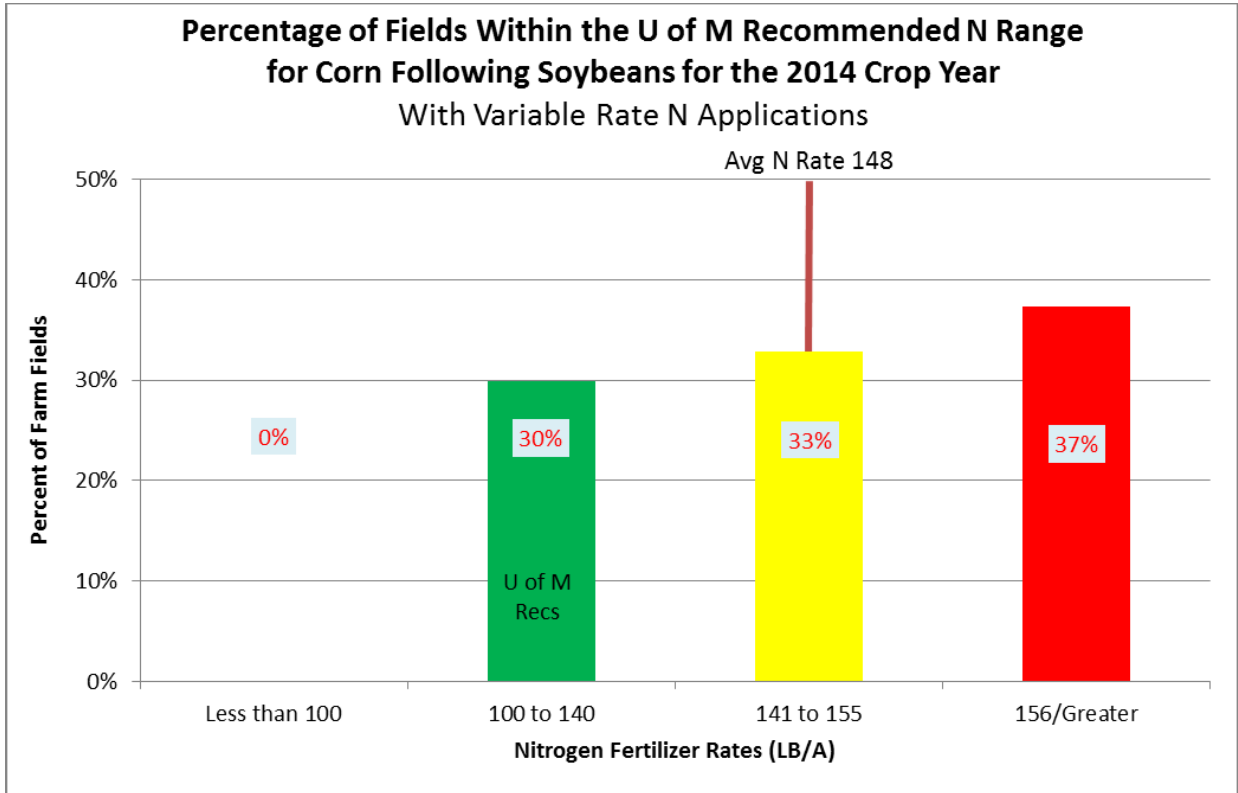


Figure 10. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SE BMP region for 2014: 67 fields.

Table 14. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2014 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	167	181	177
Avg N Rate LB/A	No Data	120	150	168

South Central Region: Corn Following Soybeans

There were 334 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.

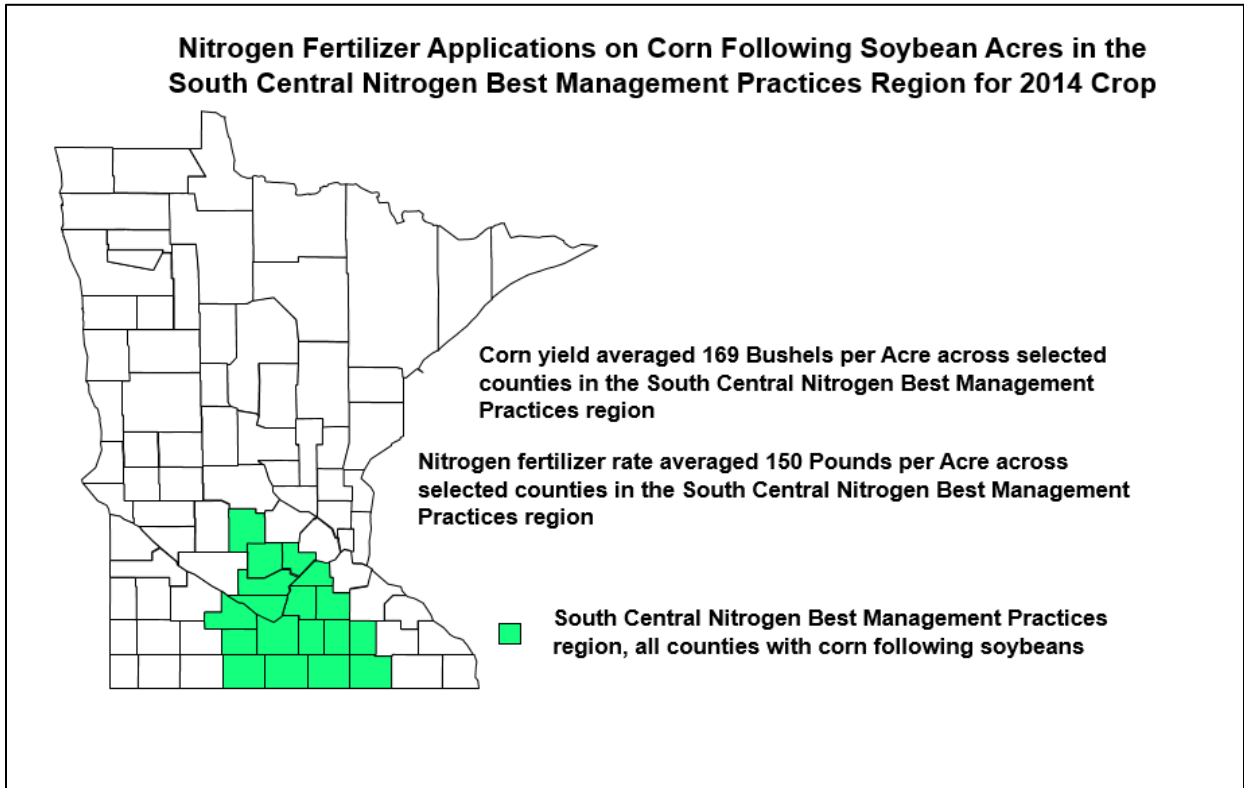


Figure 11. The corn yield averaged 169 bushels per acre and the nitrogen fertilizer rate averaged 150 pounds per acre in the SC BMP region.

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.

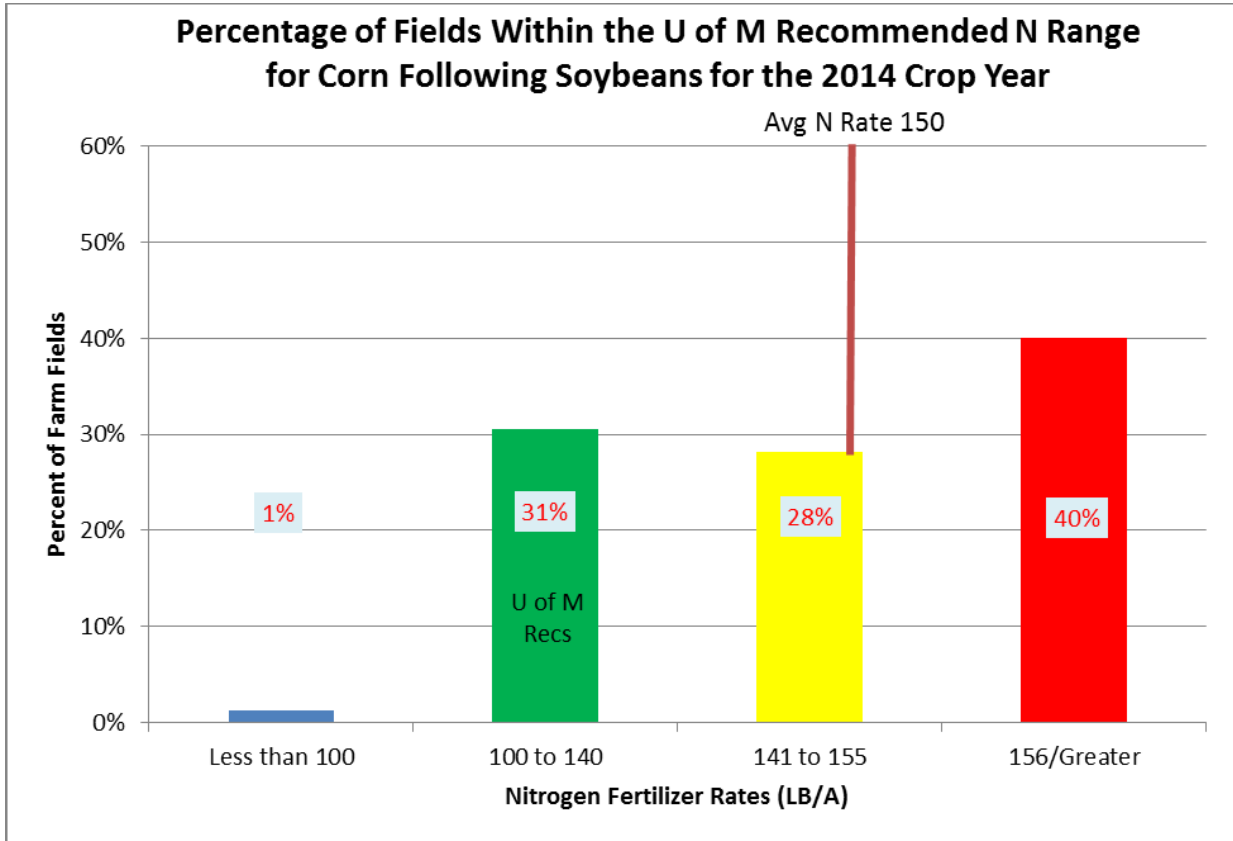


Figure 12. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SC BMP region for 2014: 334 fields.

Table 15. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	130	161	172	175
Avg N Rate LB/A	83	129	149	169

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.

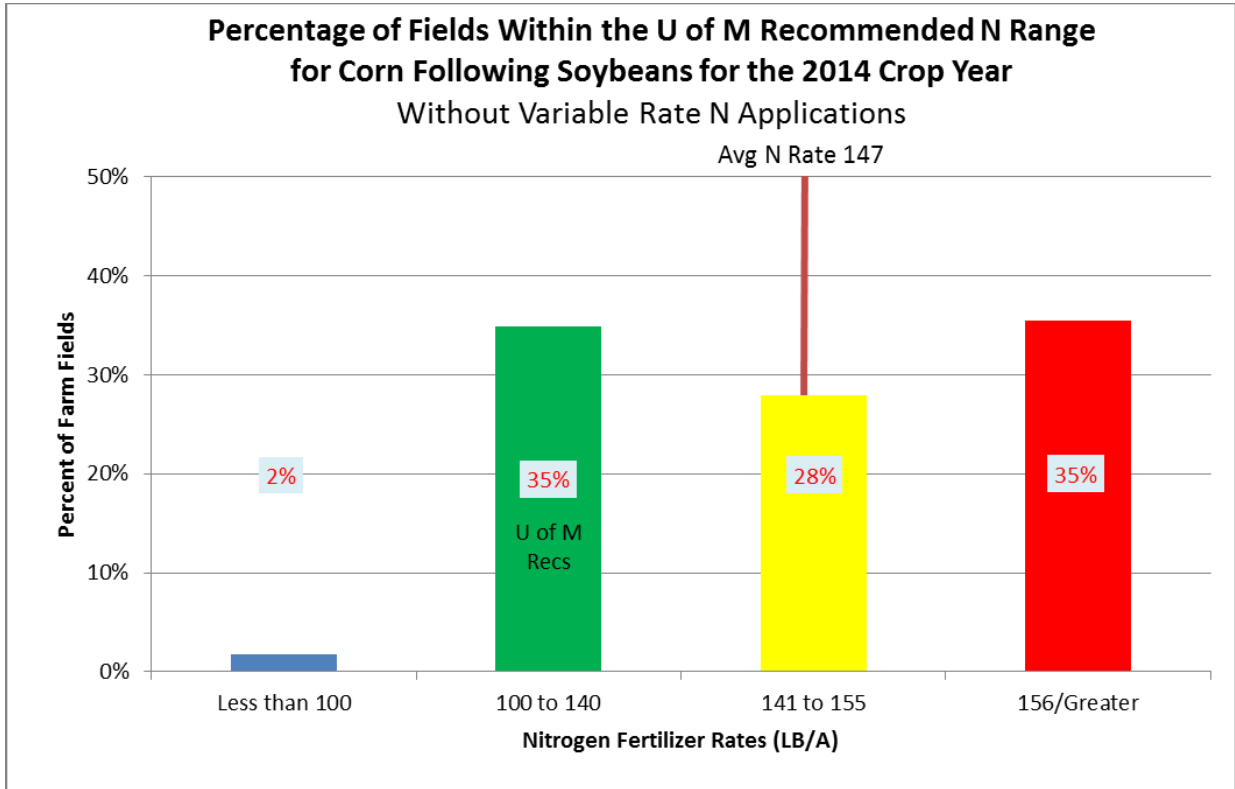


Figure 13. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SC BMP region for 2014: 172 fields.

Table 16. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	133	159	175	174
Avg N Rate LB/A	83	128	150	167

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.

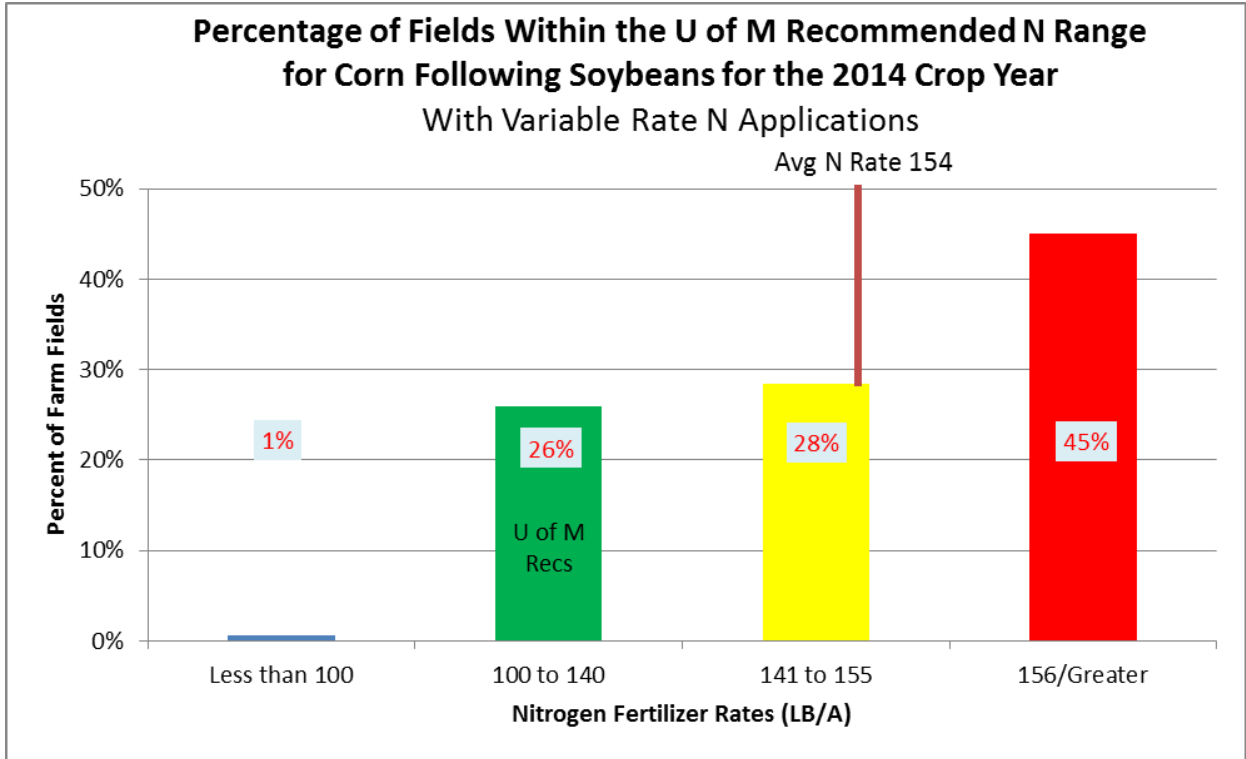


Figure 14. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SC BMP region for 2014: 162 fields.

Table 17. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2014 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	169	175
Avg N Rate LB/A	81	130	149	171

Southwestern and West Central Region: Corn Following Soybeans

There were 385 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.

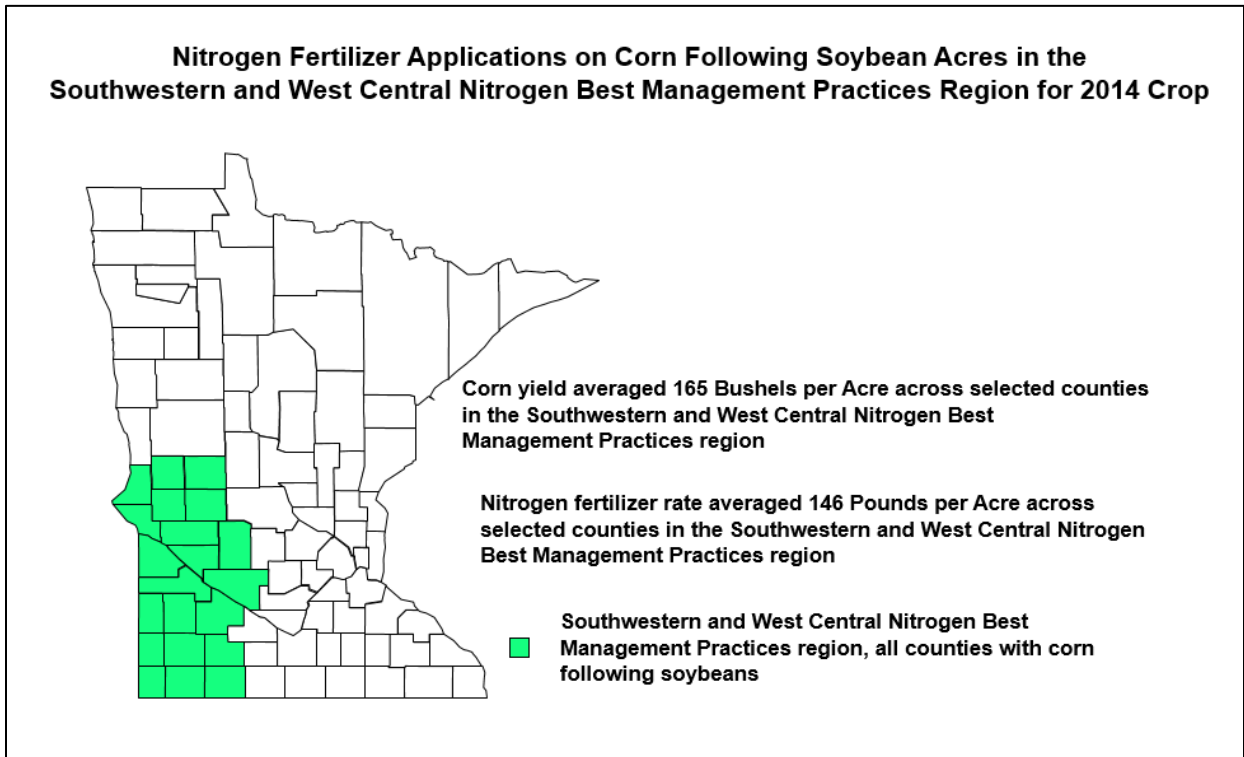


Figure 15. The corn yield averaged 166 bushels per acre and the nitrogen fertilizer rate averaged 144 pounds per acre in the SW BMP region.

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.

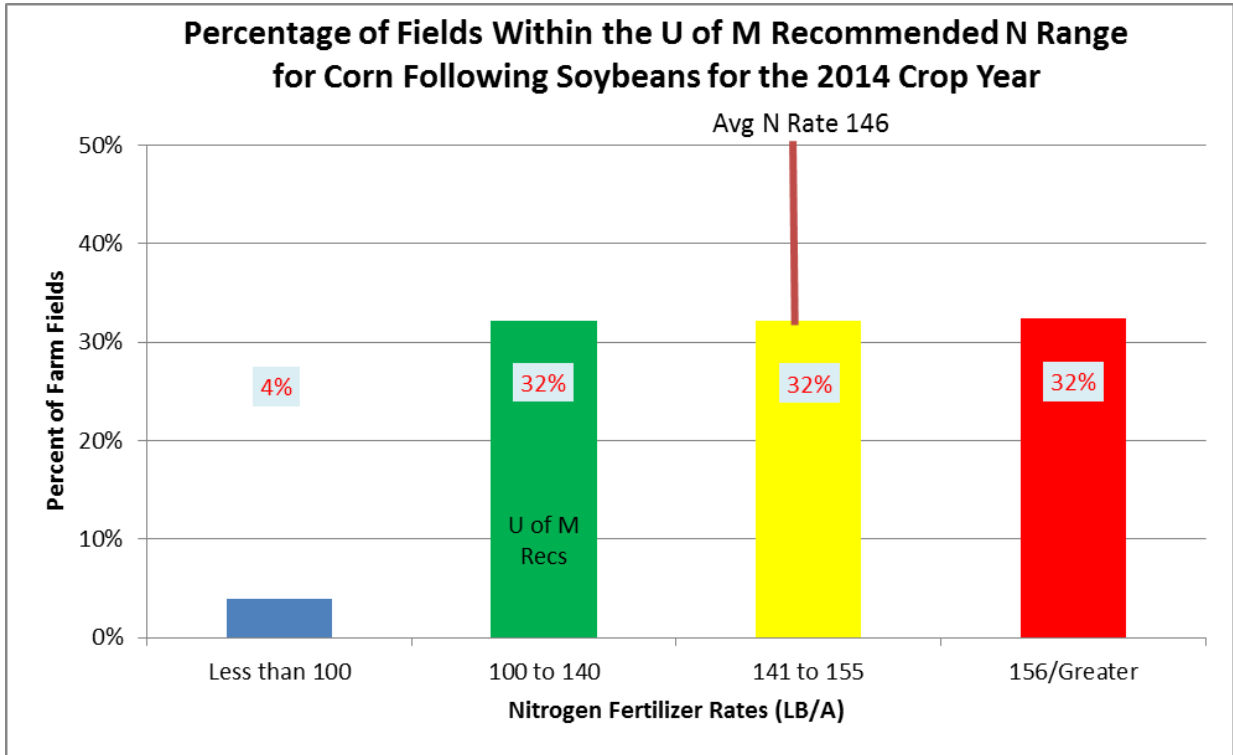


Figure 16. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the SW BMP region for 2014: 385 fields.

Table 18. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	141	158	168	171
Avg N Rate LB/A	80	128	149	167

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.

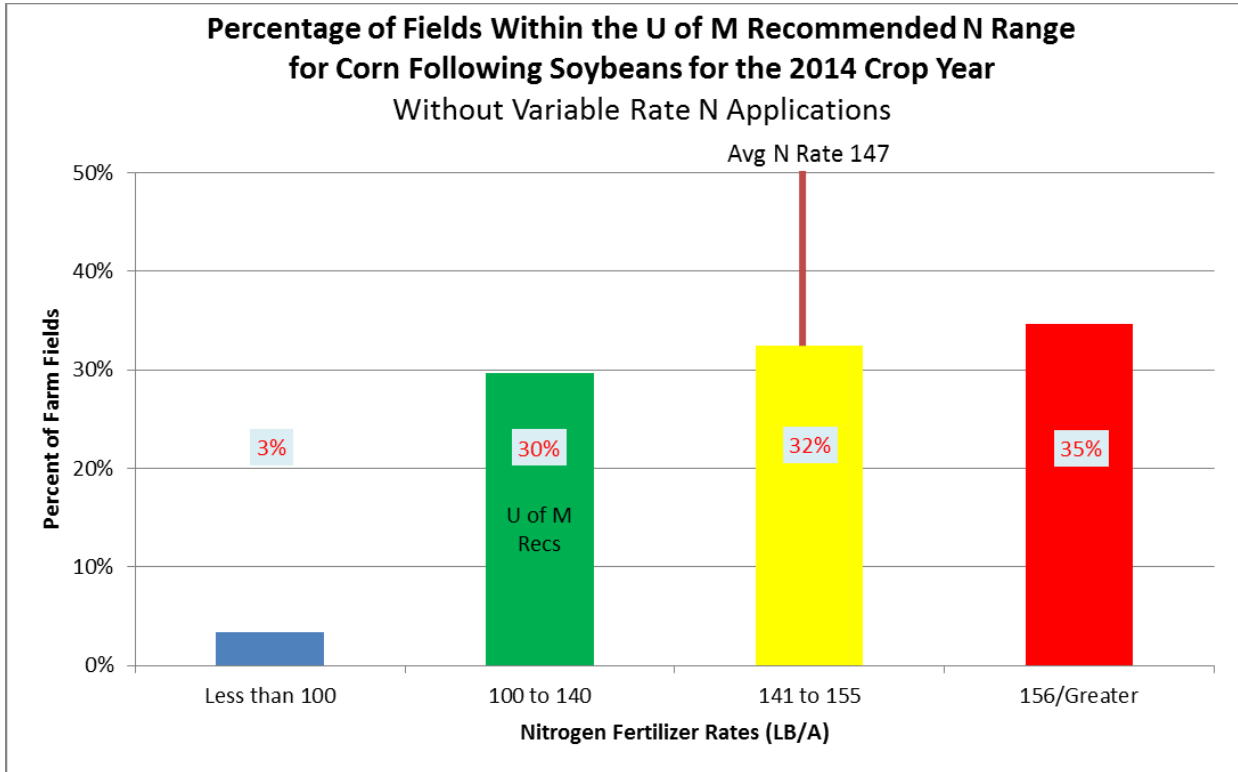


Figure 17. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the SW BMP region for 2014: 179 fields.

Table 19. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	131	156	167	172
Avg N Rate LB/A	80	129	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.

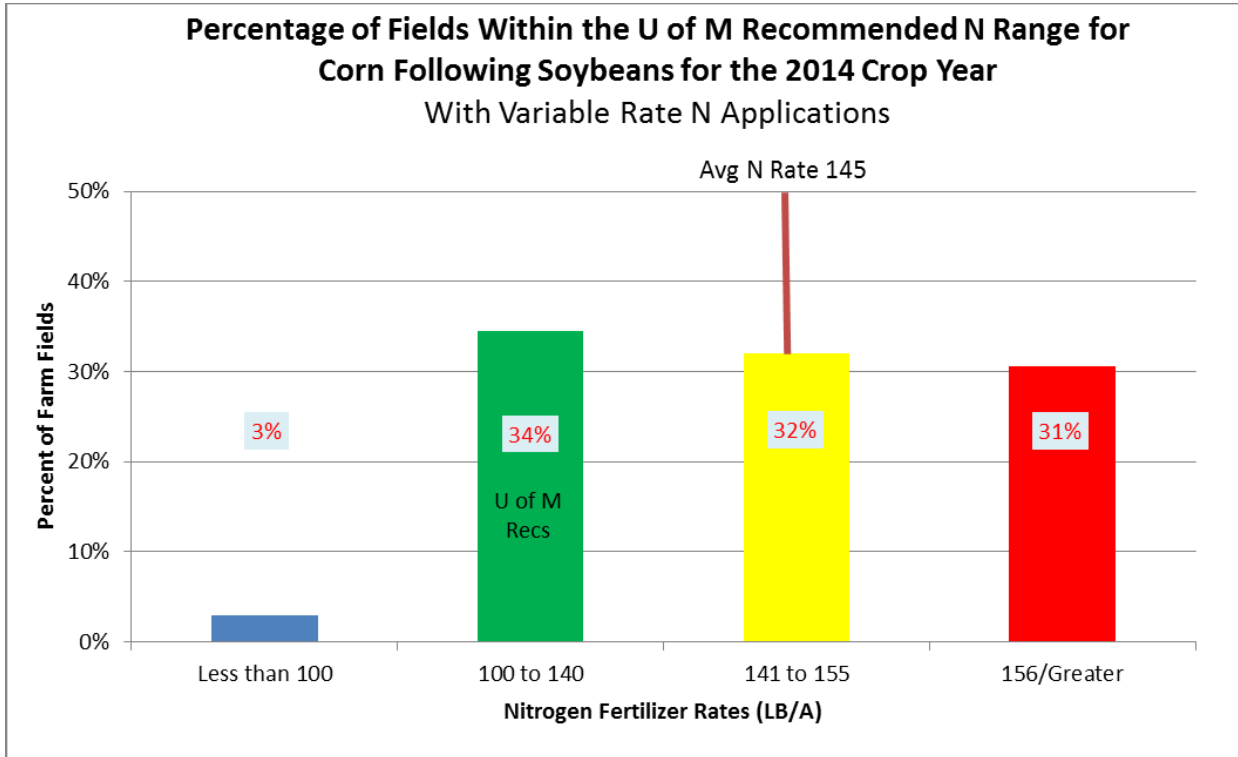


Figure 18. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the SW BMP region for 2014: 206 fields.

Table 20. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2014 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	152	159	169	171
Avg N Rate LB/A	80	128	149	167

Northwestern Region: Corn Following Soybeans

There were 37 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.

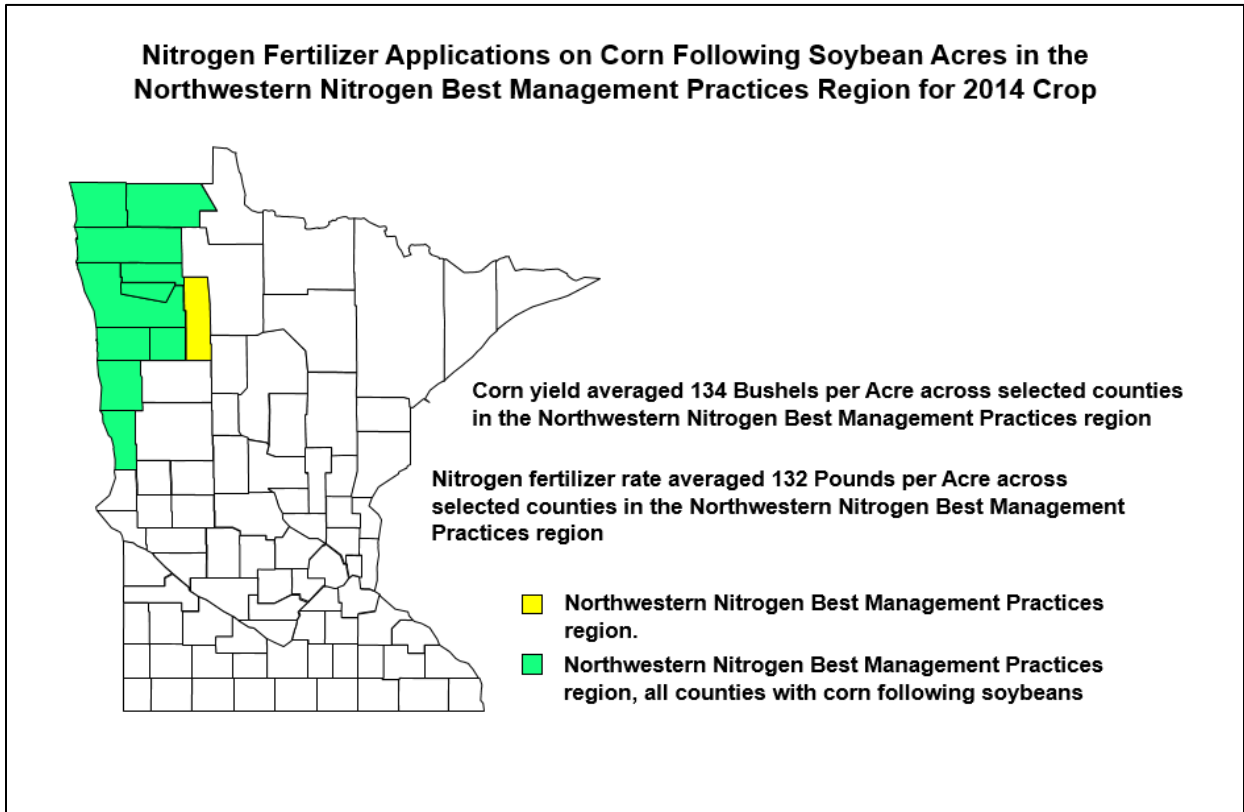


Figure 19. The corn yield averaged 134 bushels per acre and the nitrogen fertilizer rate averaged 132 pounds per acre in the NW BMP region.

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.

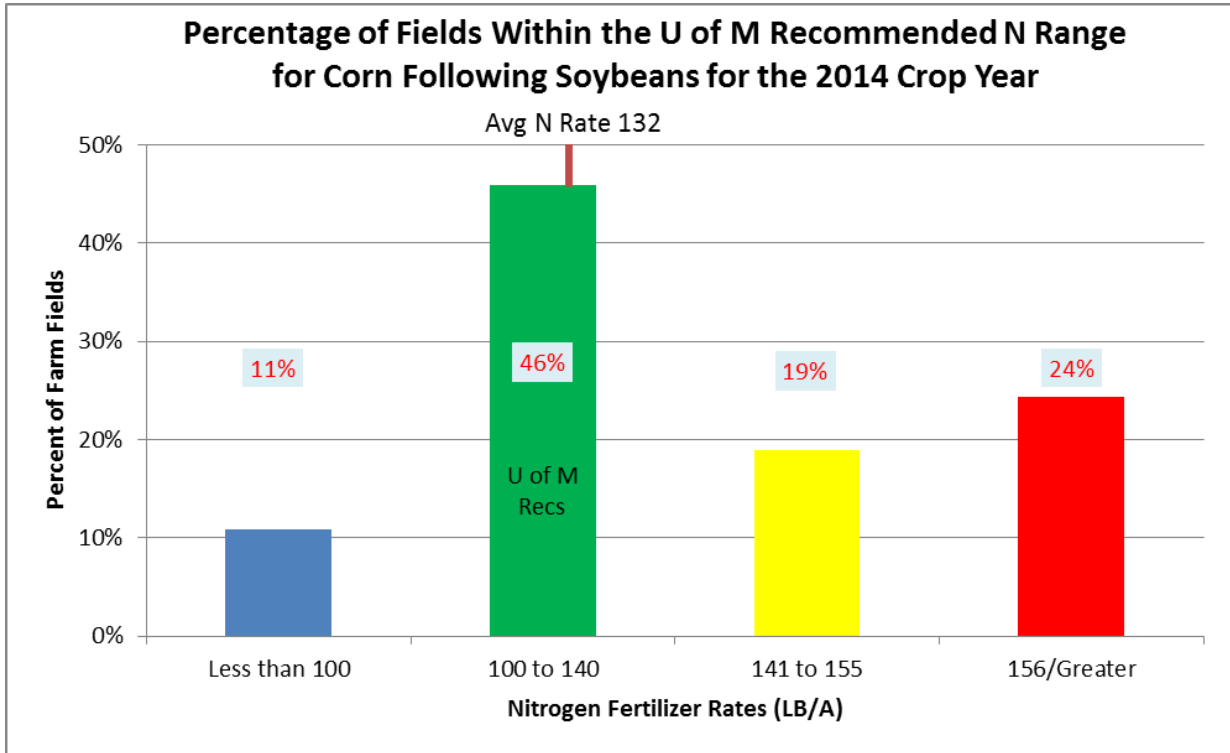


Figure 20. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the NW BMP region for 2014: 37 fields.

Table 21. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	117	132	129	149
Avg N Rate LB/A	72	121	148	167

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.

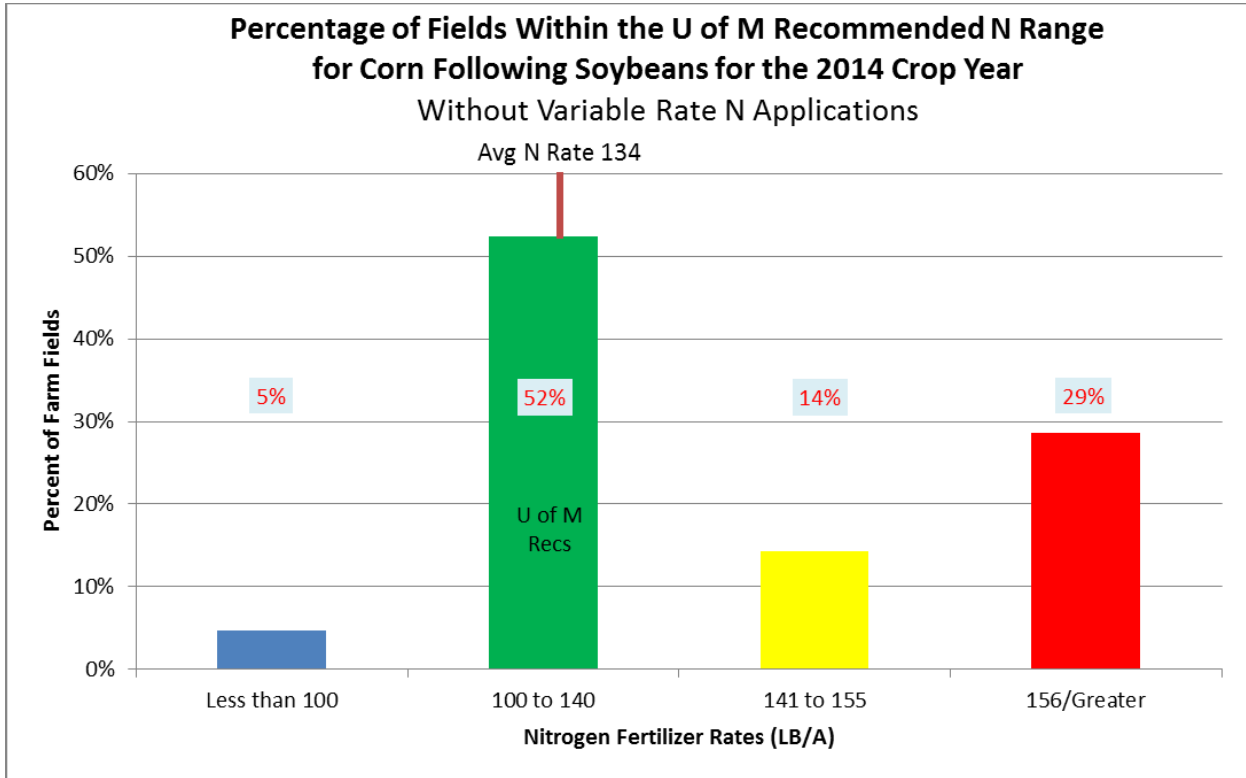


Figure 21. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the NW BMP region for 2014: 21 fields.

Table 22. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	110	133	107	147
Avg N Rate LB/A	30	120	150	169

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.

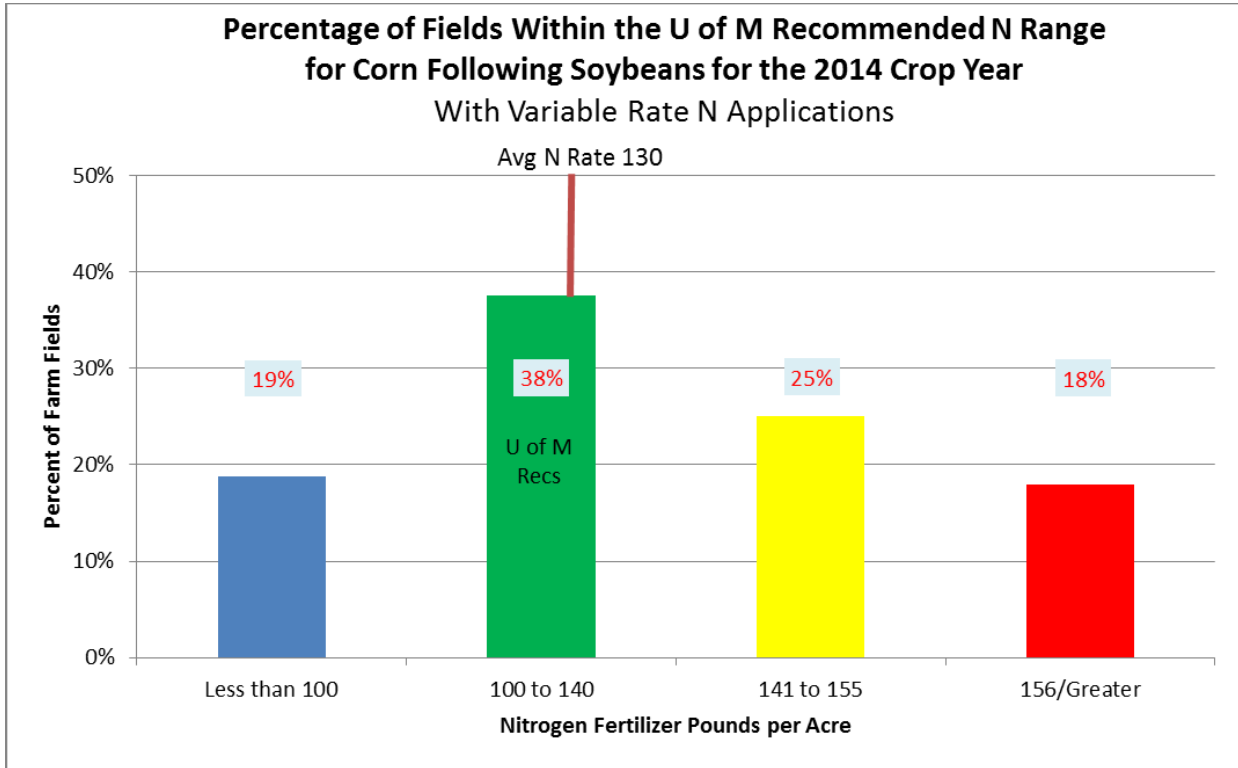


Figure 22. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the NW BMP region for 2014: 16 fields.

Table 23. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	120	130	145	153
Avg N Rate LB/A	86	123	146	164

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

There were 125 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.

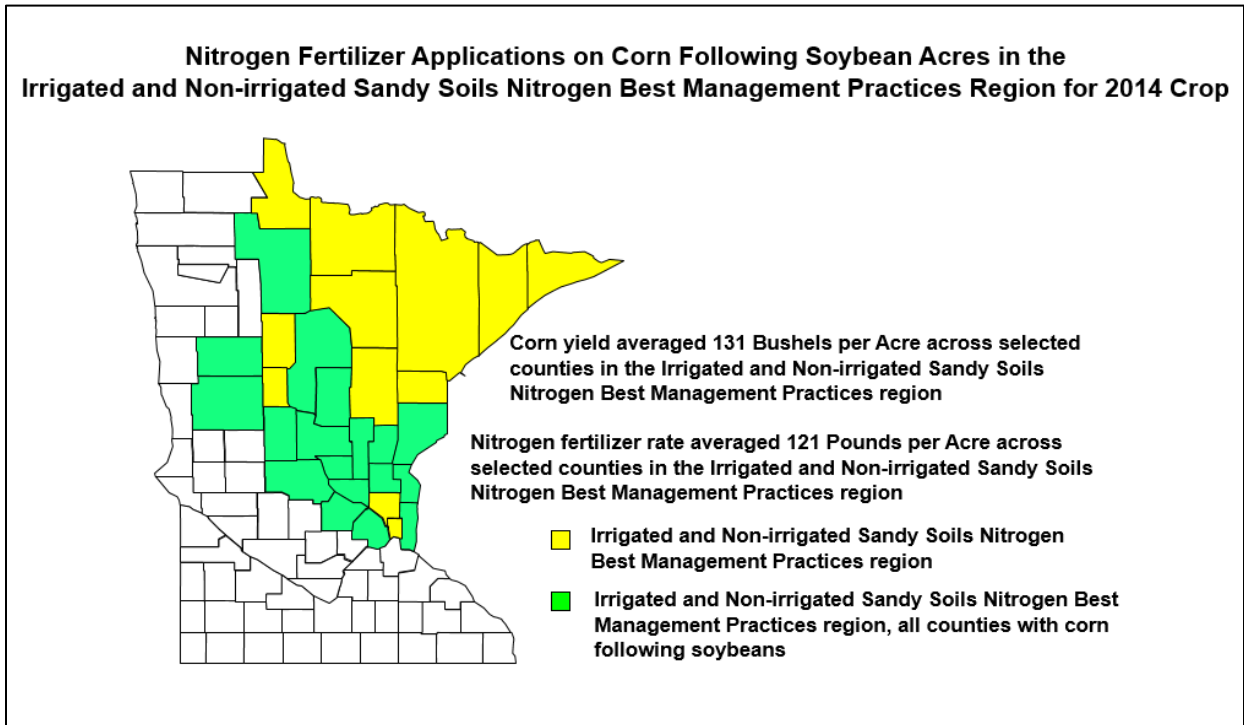


Figure 23. The corn yield averaged 131 bushels per acre and the nitrogen fertilizer rate averaged 121 pounds per acre in the IRR BMP region.

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.

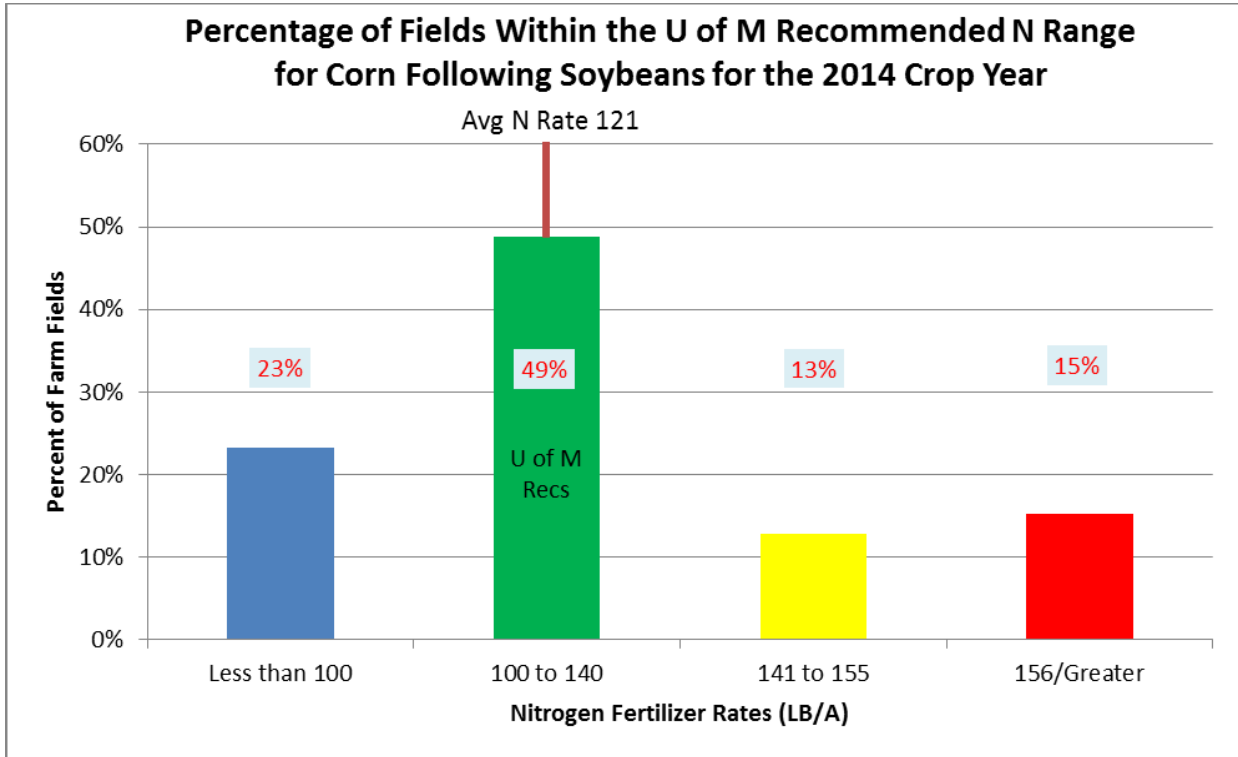


Figure 24. Percentage of fields within the U of M recommended N range for corn following soybeans with and without variable rate applications of nitrogen in the IRR BMP region for 2014: 125 fields.

Table 24. Nitrogen fertilizer rates and associated yields for corn following soybeans with and without variable rate nitrogen applications for the 2014 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	108	131	143	155
Avg N Rate LB/A	75	120	150	173

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.

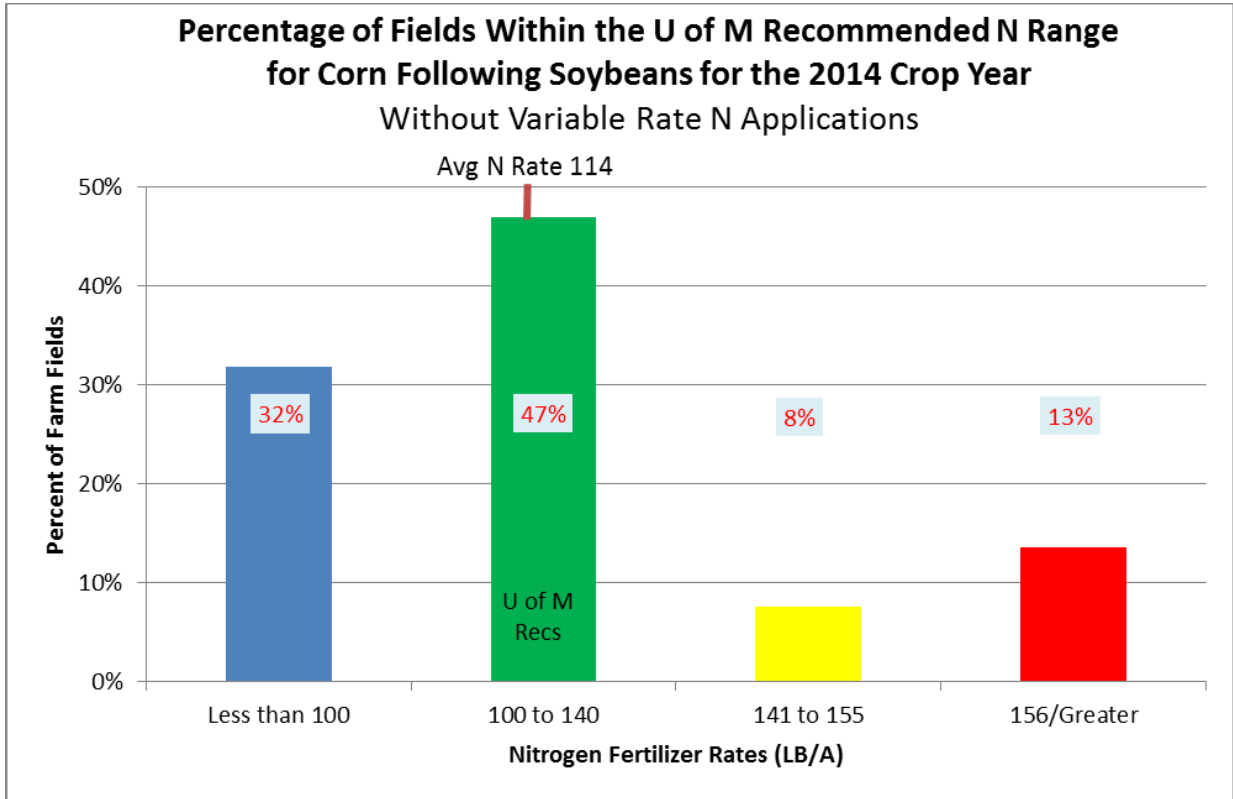


Figure 25. Percentage of fields within the U of M recommended N range for corn following soybeans without variable rate applications of nitrogen in the IRR BMP region for 2014: 66 fields.

Table 25. Nitrogen fertilizer rates and associated yields for corn following soybeans without variable rate nitrogen applications for the 2014 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	113	127	149	154
Avg N Rate LB/A	72	120	151	173

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.

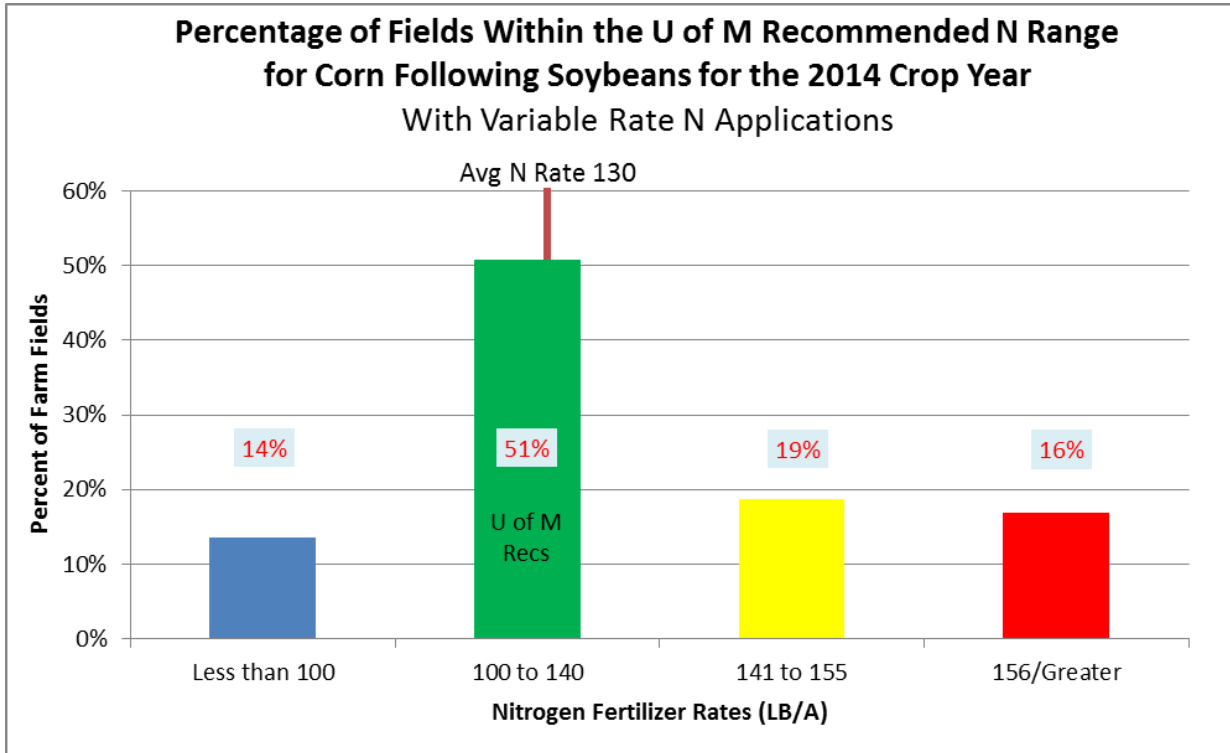


Figure 26. Percentage of fields within the U of M recommended N range for corn following soybeans with variable rate applications of nitrogen in the IRR BMP region for 2014: 59 fields.

Table 26. Nitrogen fertilizer rates and associated yields for corn following soybeans with variable rate nitrogen applications for the 2014 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	96	134	140	157
Avg N Rate LB/A	83	121	149	172

Statewide: Corn Following Corn

Statewide, twenty-five percent of the fields reported corn following corn (Figure 27). There were 414 fields surveyed in Minnesota.

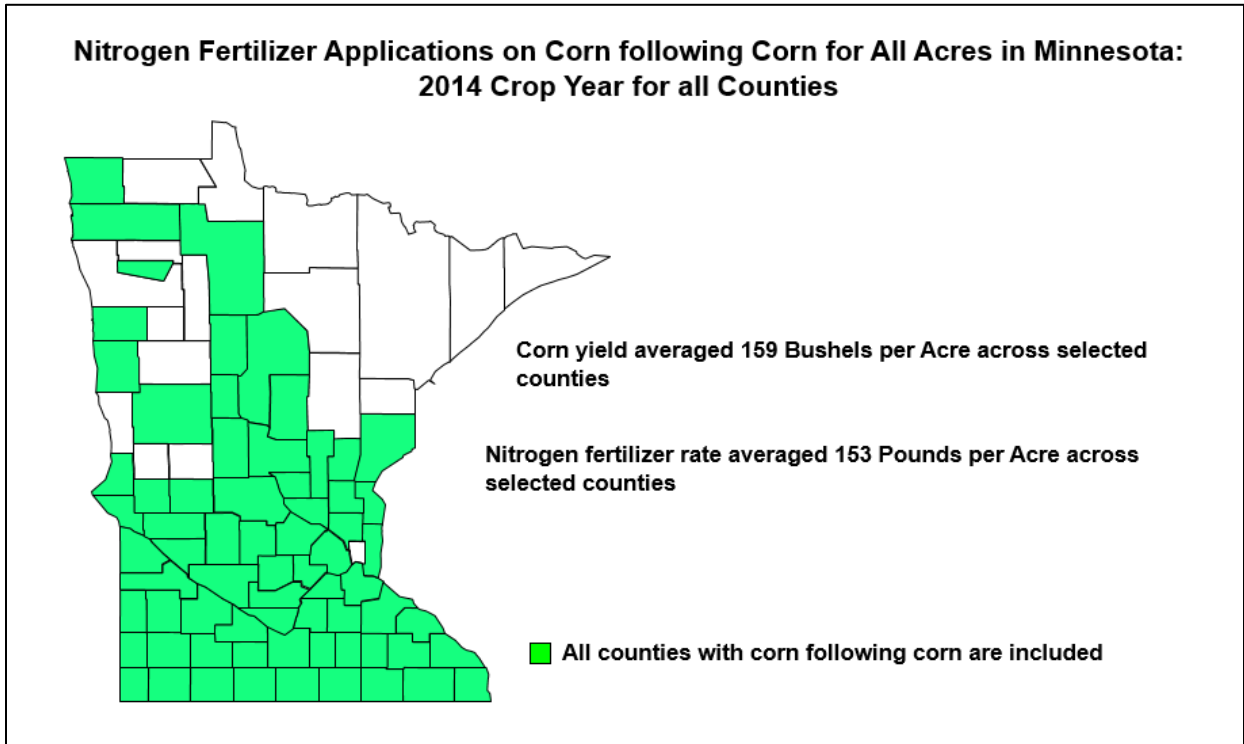


Figure 27. The corn yield averaged 159 bushels per acre and the nitrogen fertilizer rate averaged 153 pounds per acre on fields with corn following corn in Minnesota.

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.

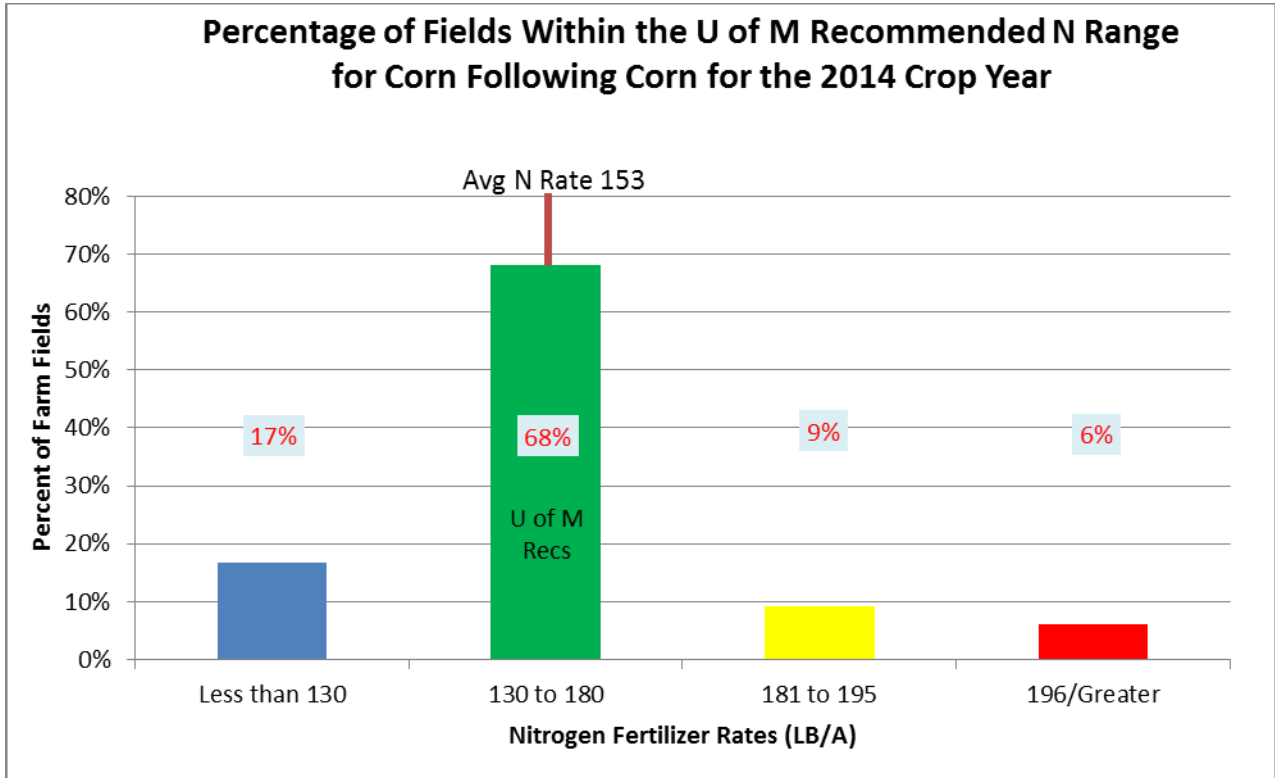


Figure 28. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in Minnesota for 2014: 414 fields.

Table 27. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	119	164	177	182
Avg N Rate LB/A	93	158	188	208

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.

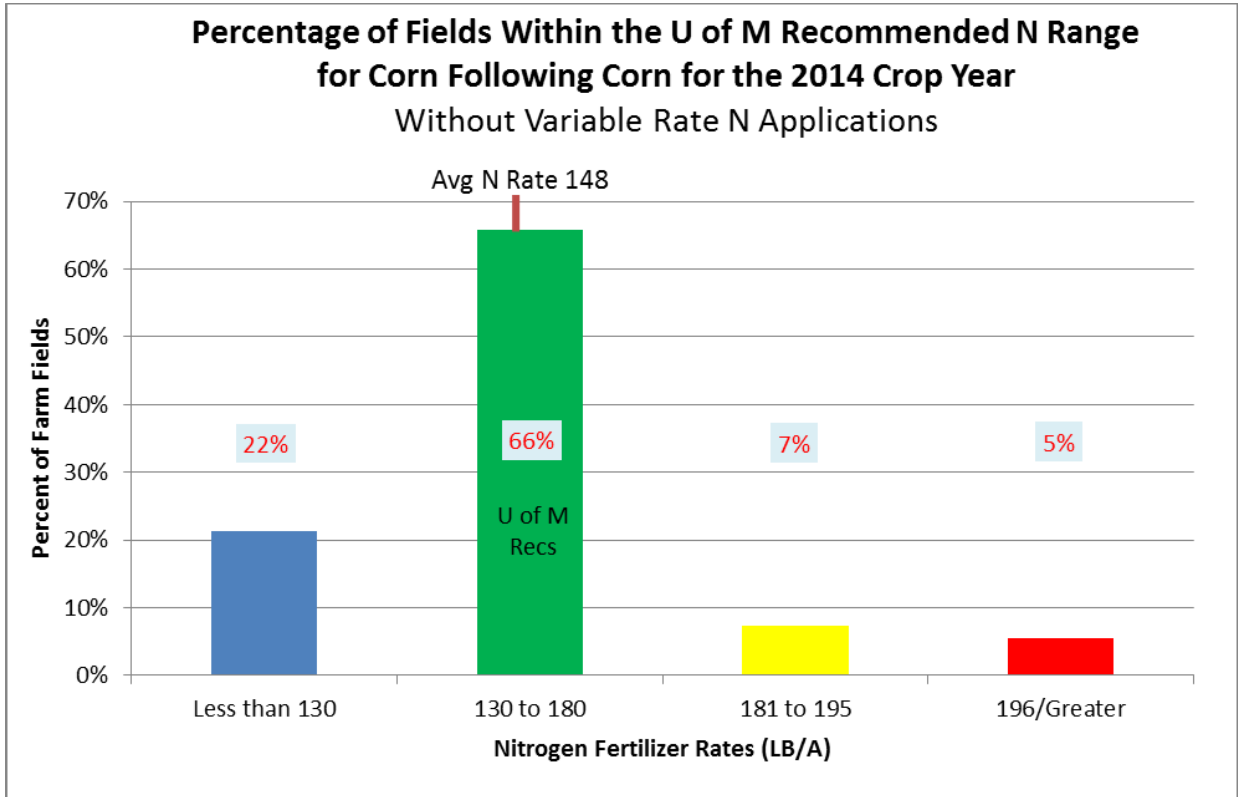


Figure 29. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in Minnesota for 2014: 202 fields.

Table 28. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2014 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	163	180	188
Avg N Rate LB/A	91	158	186	206

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.

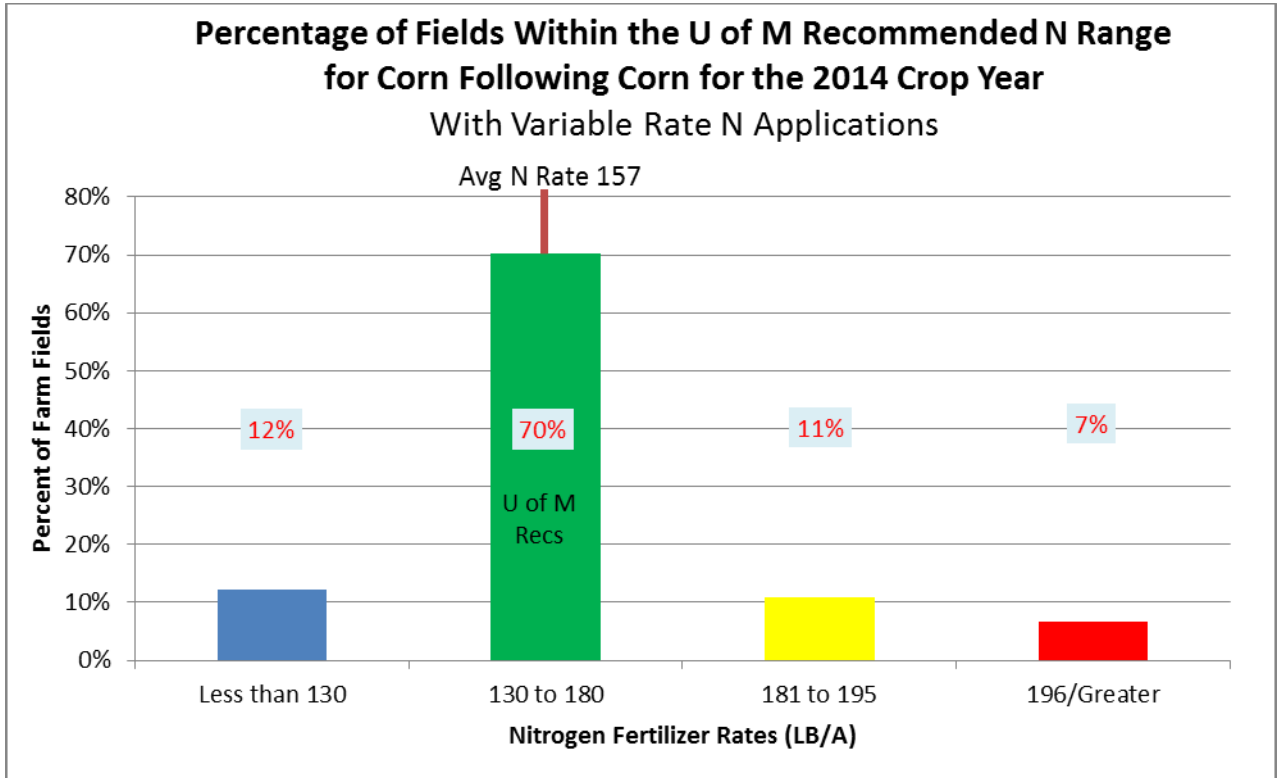


Figure 30. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in Minnesota for 2014: 212 fields.

Table 29. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	165	175	178
Avg N Rate LB/A	96	158	189	210

Southeastern Region: Corn Following Corn

There were 81 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.

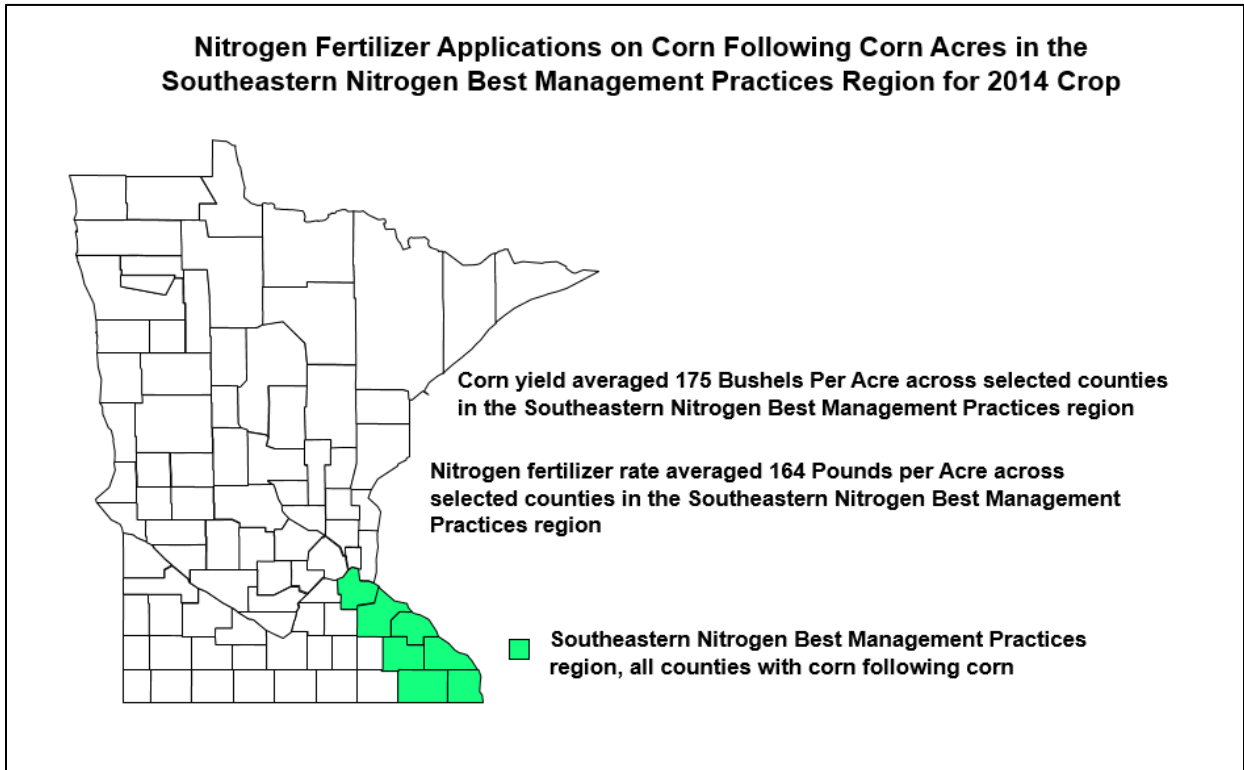


Figure 31. The corn yield averaged 175 bushels per acre and the nitrogen fertilizer rate averaged 164 pounds per acre in the SE BMP region.

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.

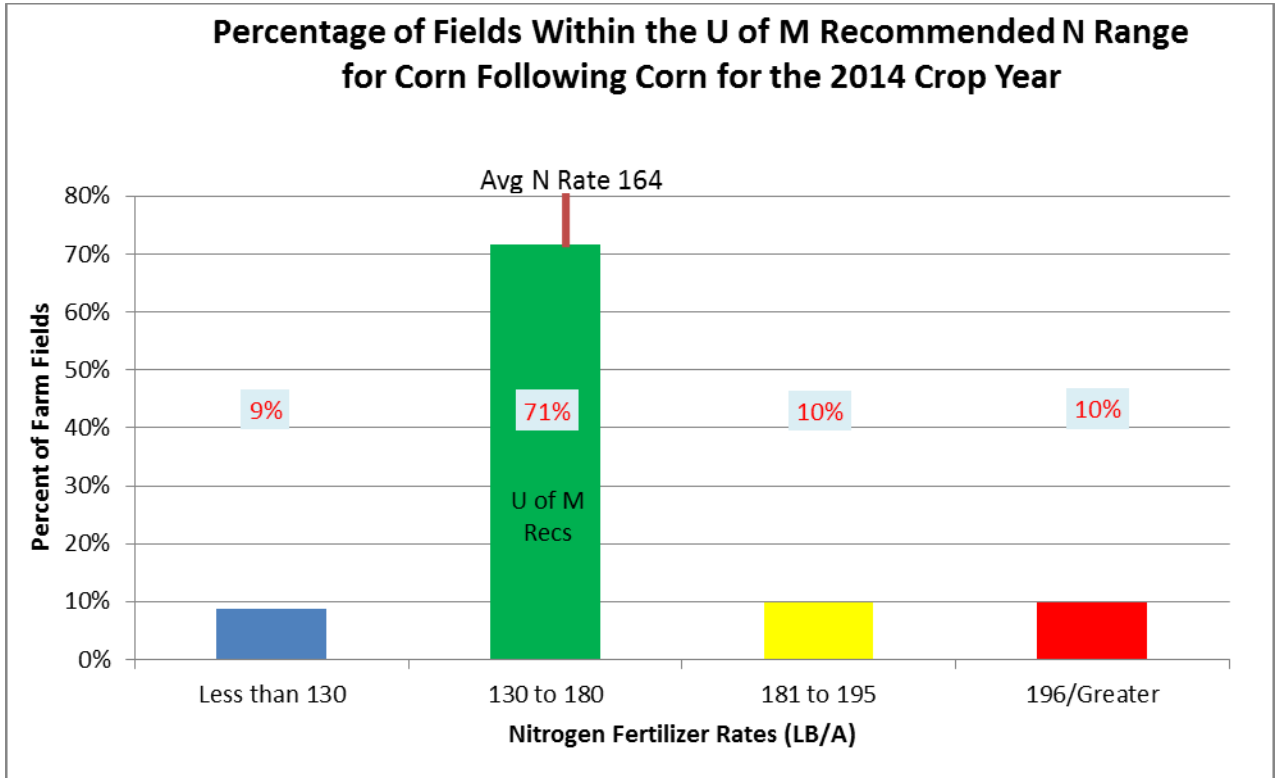


Figure 32. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SE BMP region for 2014: 81 fields.

Table 30. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	148	174	185	198
Avg N Rate LB/A	115	161	188	207

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.

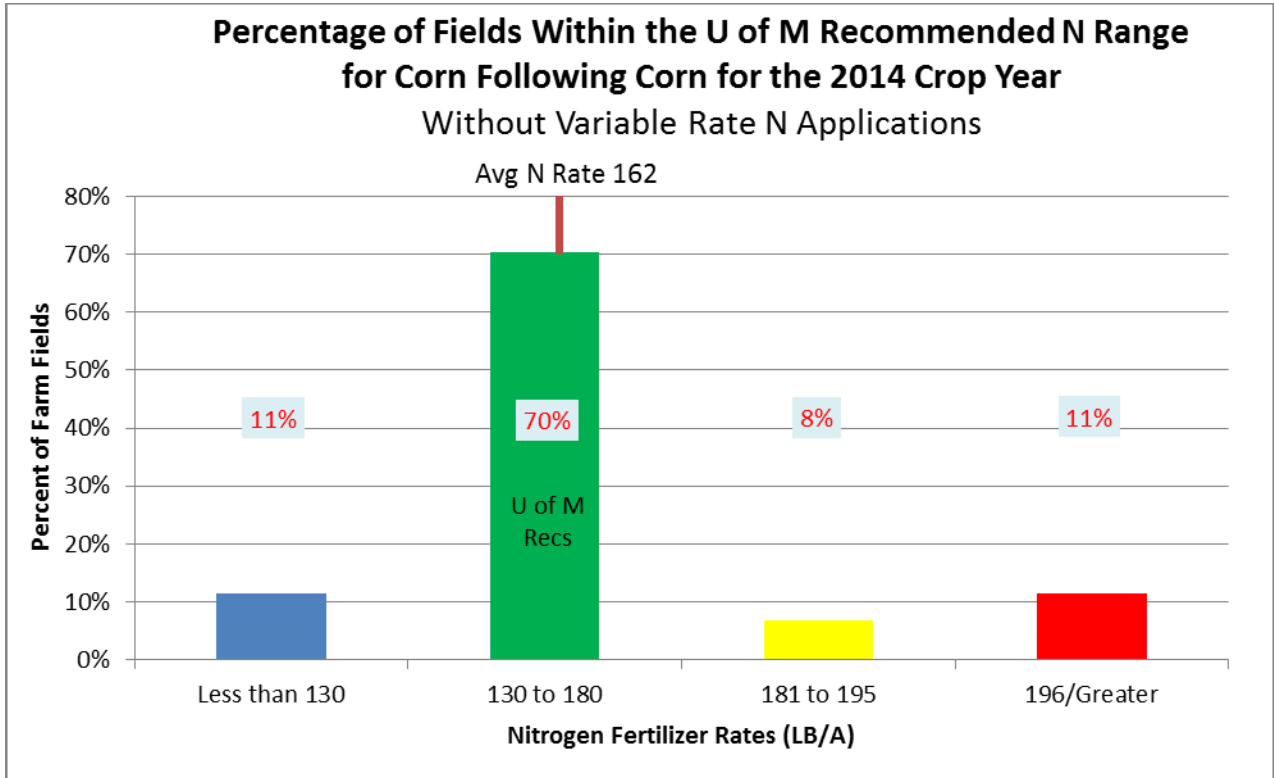


Figure 33. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SE BMP region for 2014: 44 fields

Table 31. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2014 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	136	169	190	195
Avg N Rate LB/A	114	161	186	202

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.

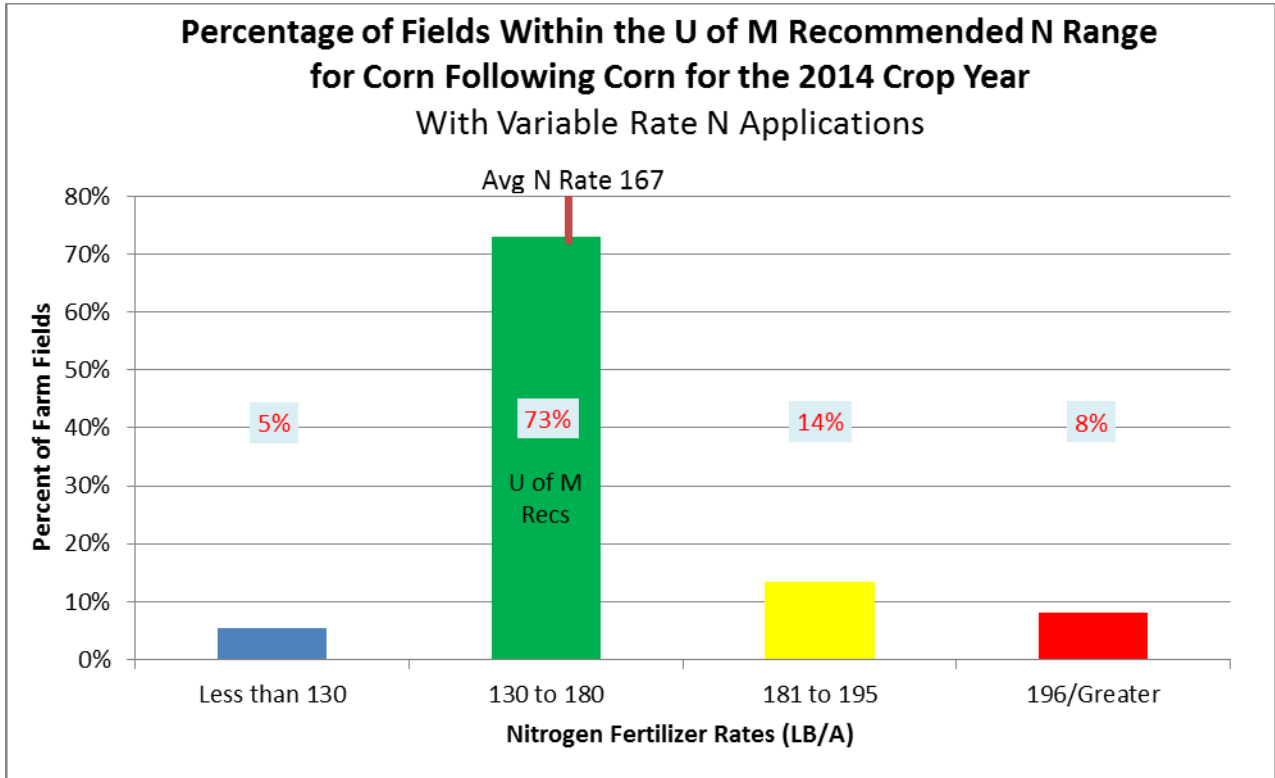


Figure 34. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SE BMP region for 2014: 37 fields.

Table 32. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	178	180	182	203
Avg N Rate LB/A	117	161	188	215

South Central Region: Corn Following Corn

There were 120 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.

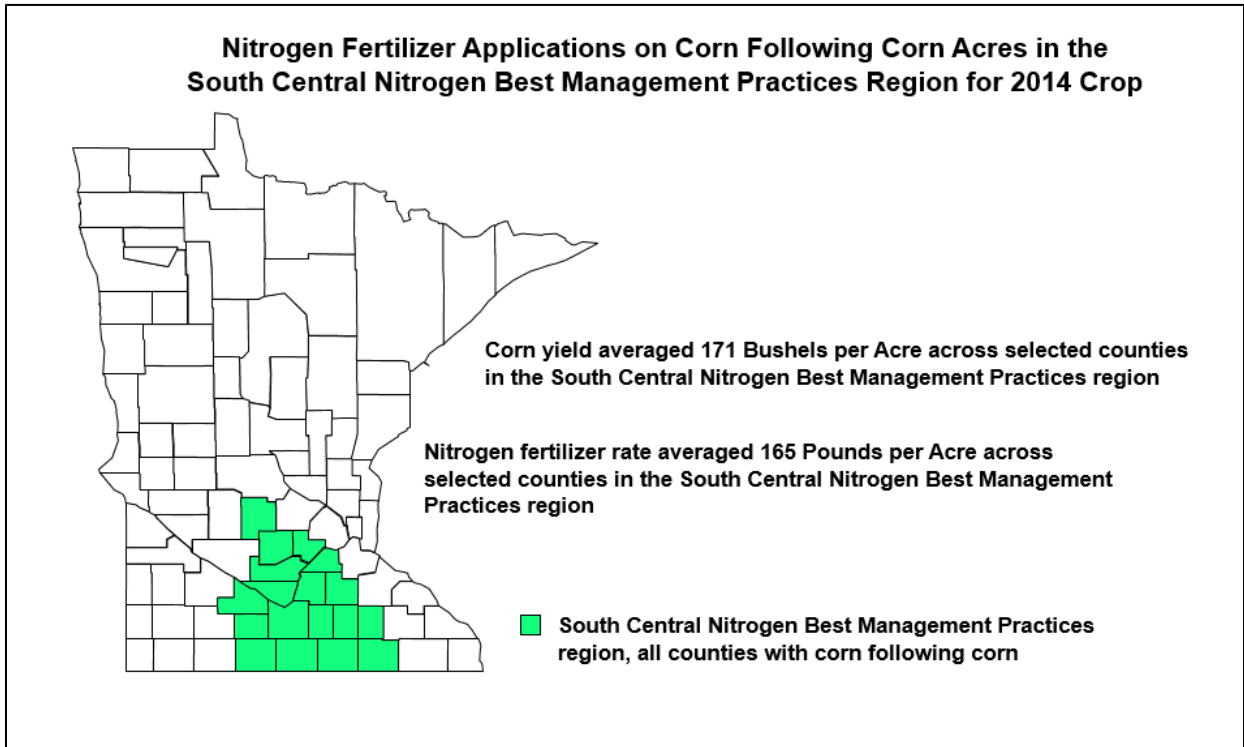


Figure 35. The corn yield averaged 171 bushels per acre and the nitrogen fertilizer rate averaged 165 pounds per acre in the SC BMP region.

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.

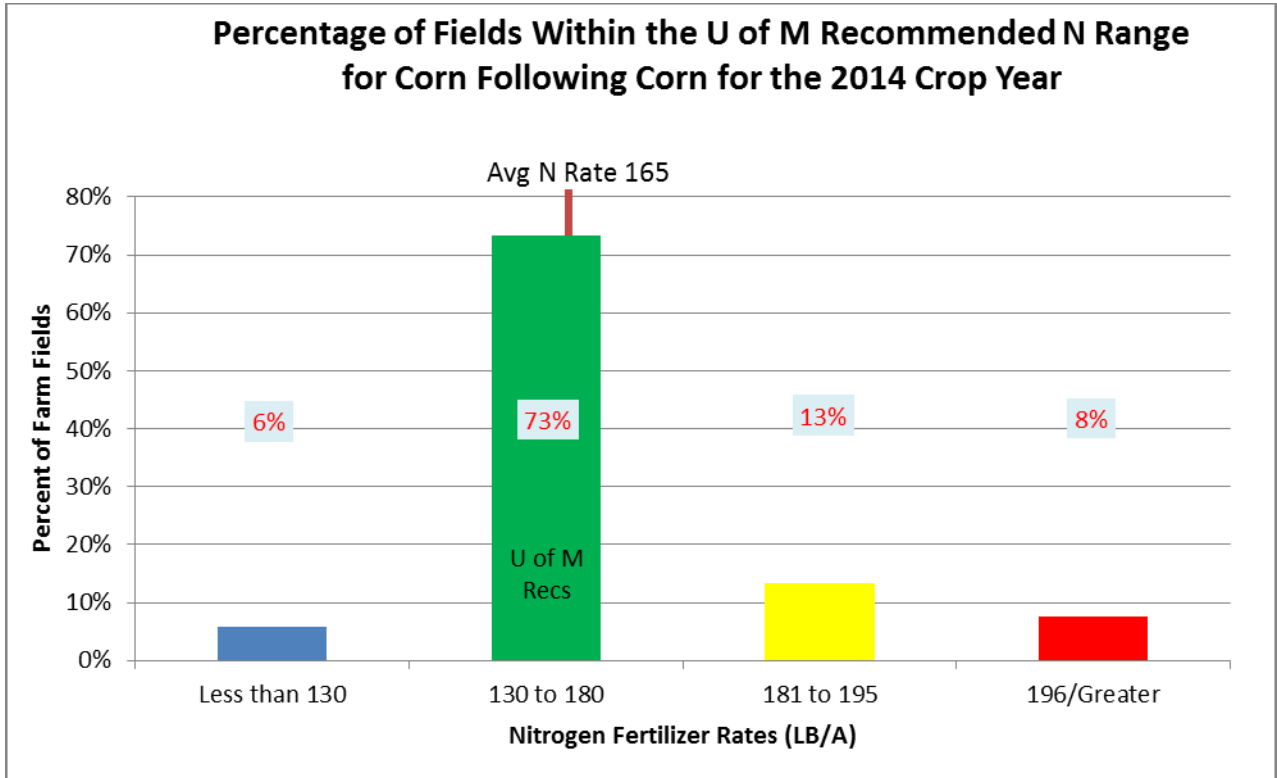


Figure 36. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SC BMP region for 2014: 120 fields.

Table 33. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	135	172	181	180
Avg N Rate LB/A	113	161	188	207

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.

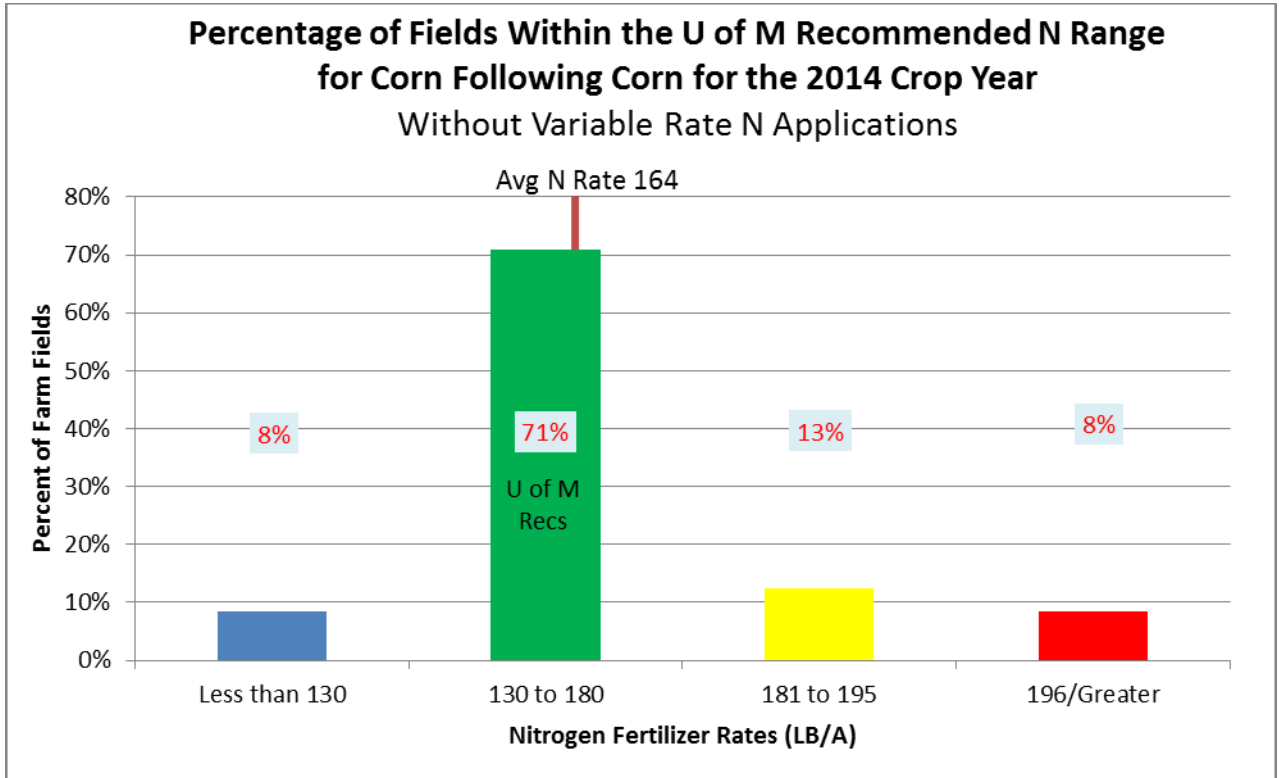


Figure 37. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SC BMP region for 2014: 48 fields.

Table 34. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2014 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	183	181
Avg N Rate LB/A	116	160	187	206

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.

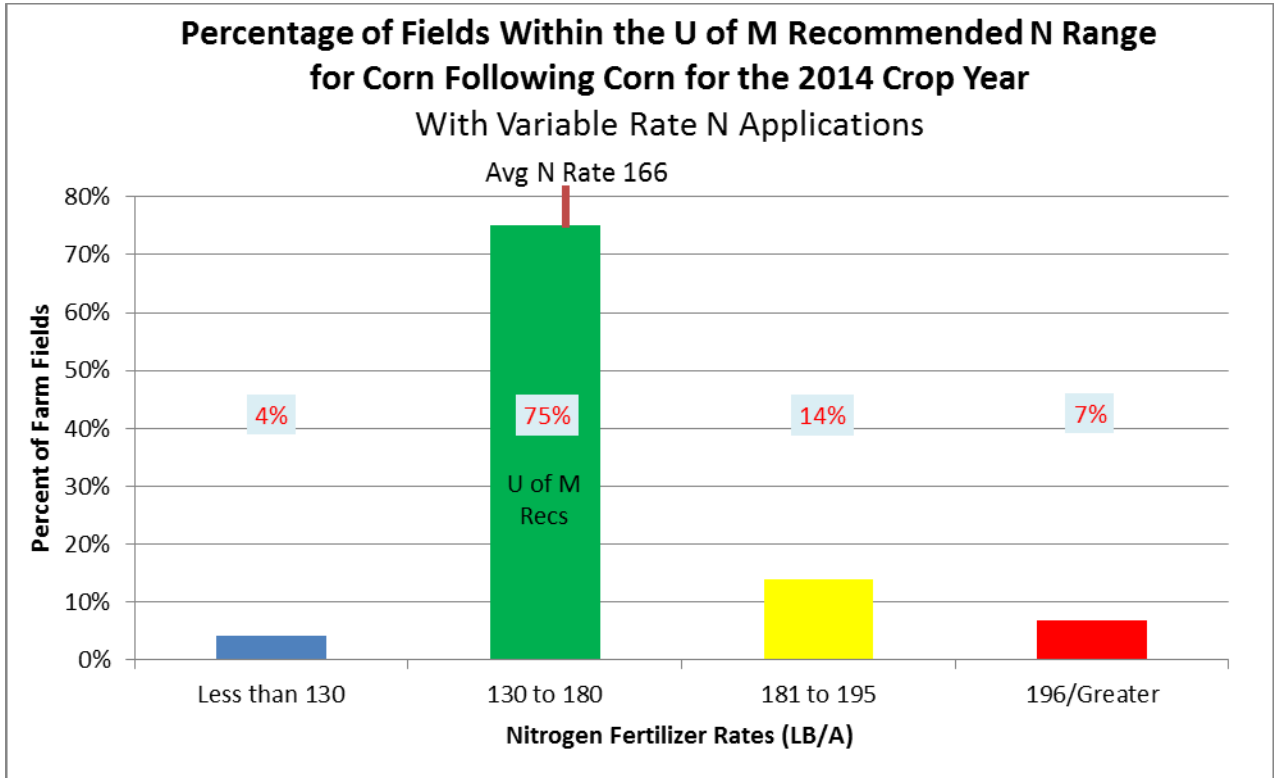


Figure 38. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SC BMP region for 2014: 72 fields.

Table 35. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	117	172	180	178
Avg N Rate LB/A	108	161	189	205

Southwestern and West Central Region: Corn Following Corn

There were 104 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.

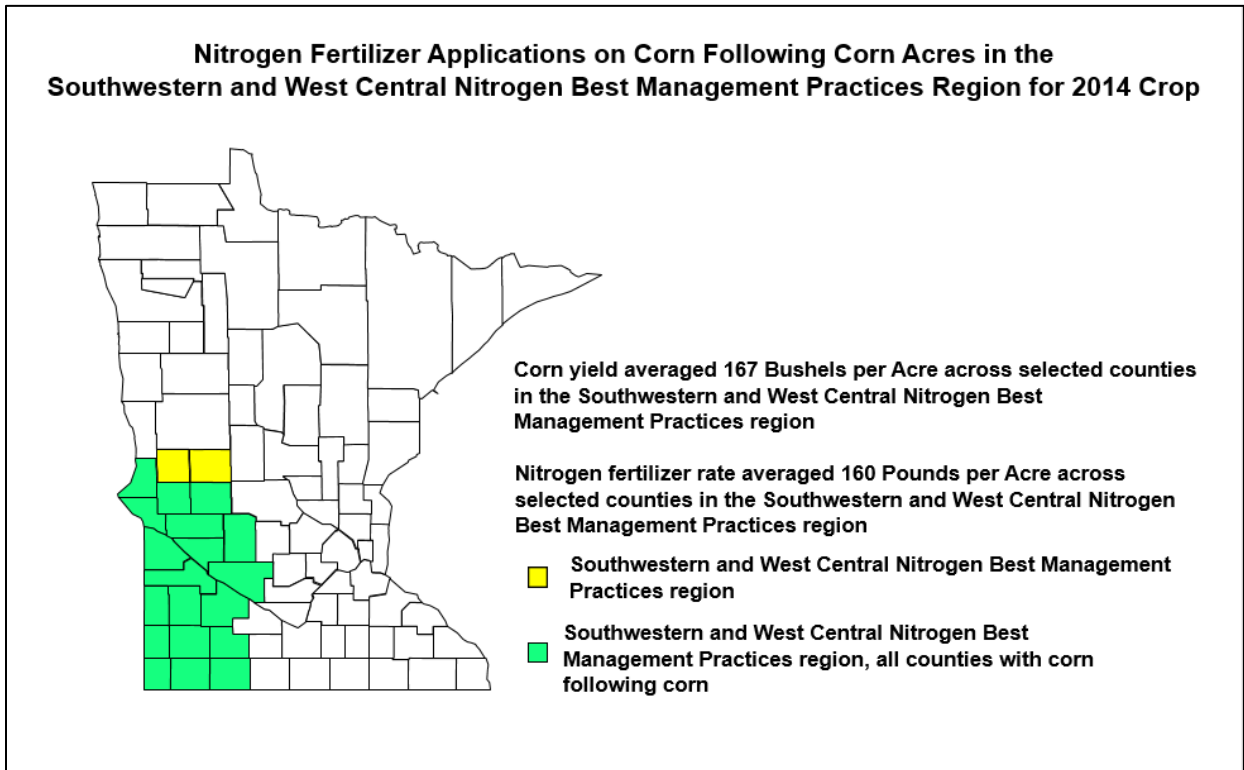


Figure 39. The corn yield averaged 167 bushels per acre and the nitrogen fertilizer rate averaged 160 pounds per acre in the SW BMP region.

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.

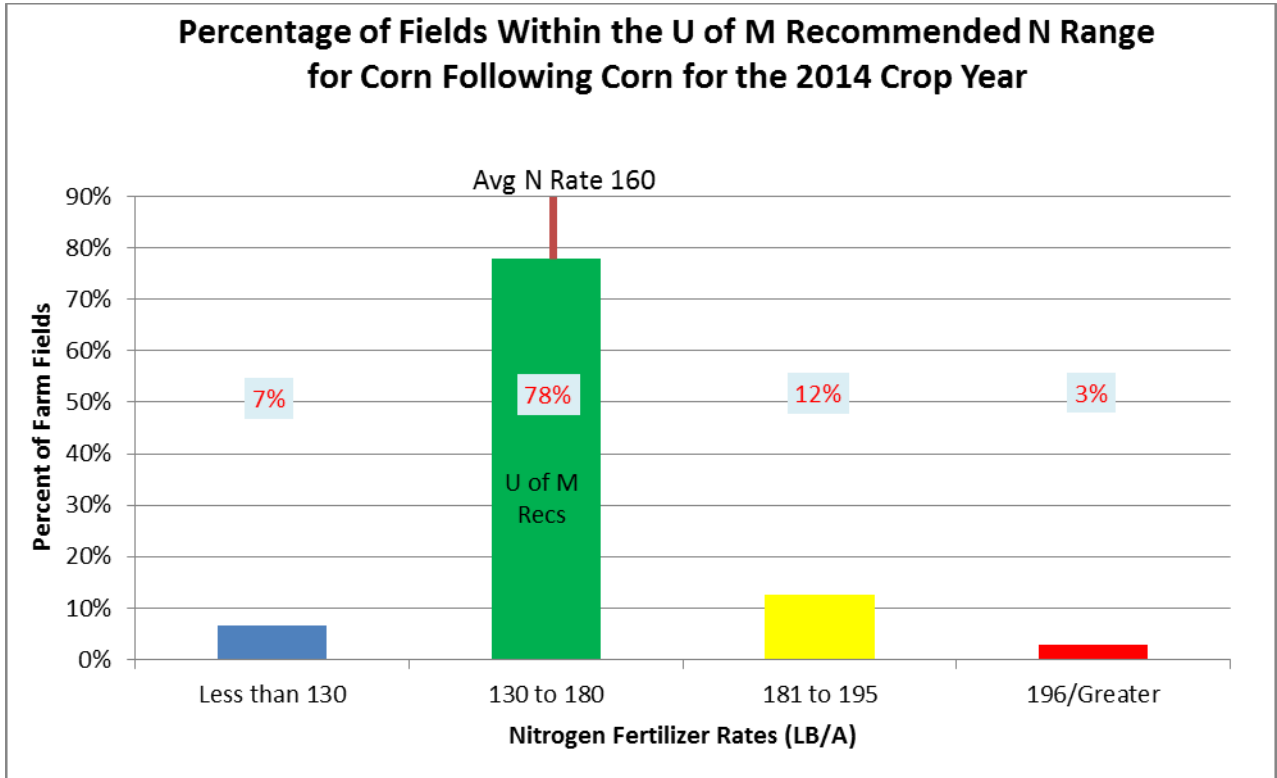


Figure 40. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the SW BMP region for 2014: 104 fields.

Table 36. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	156	167	171	185
Avg N Rate LB/A	110	158	187	216

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.

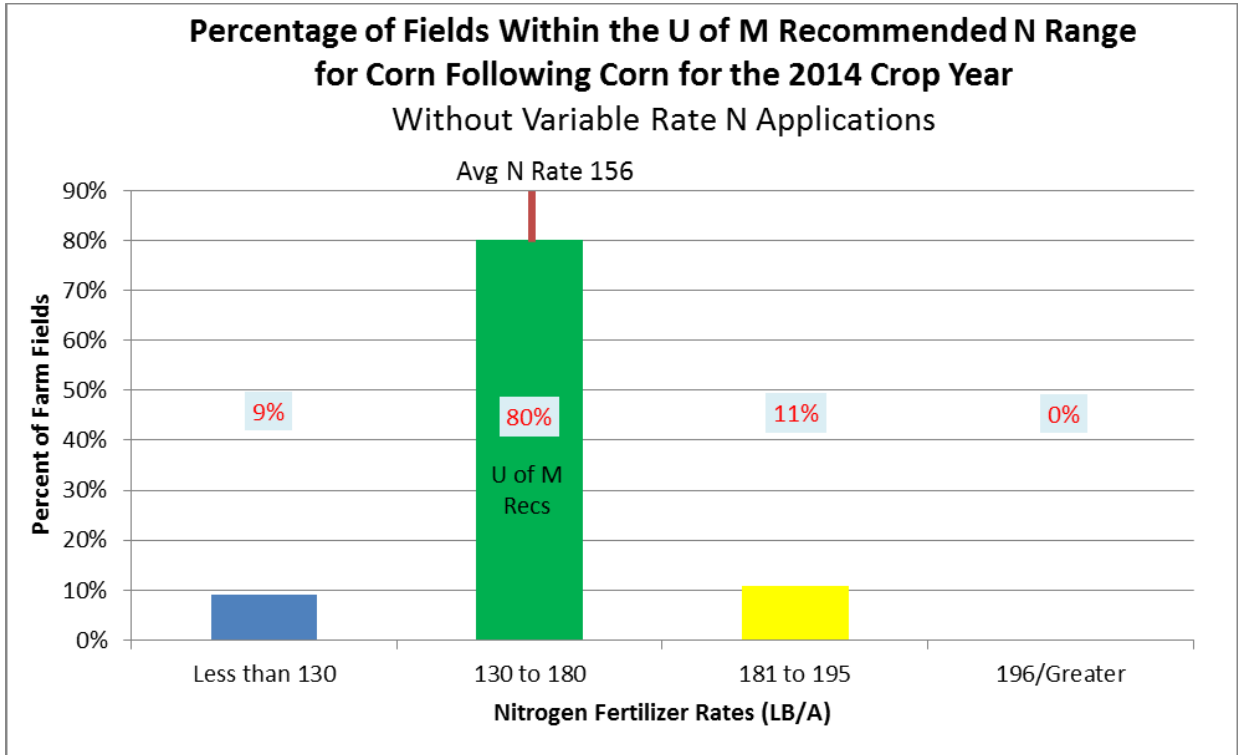


Figure 41. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the SW BMP region for 2014: 55 fields.

Table 37. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2014 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	151	164	174	No Data
Avg N Rate LB/A	109	157	186	No Data

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.

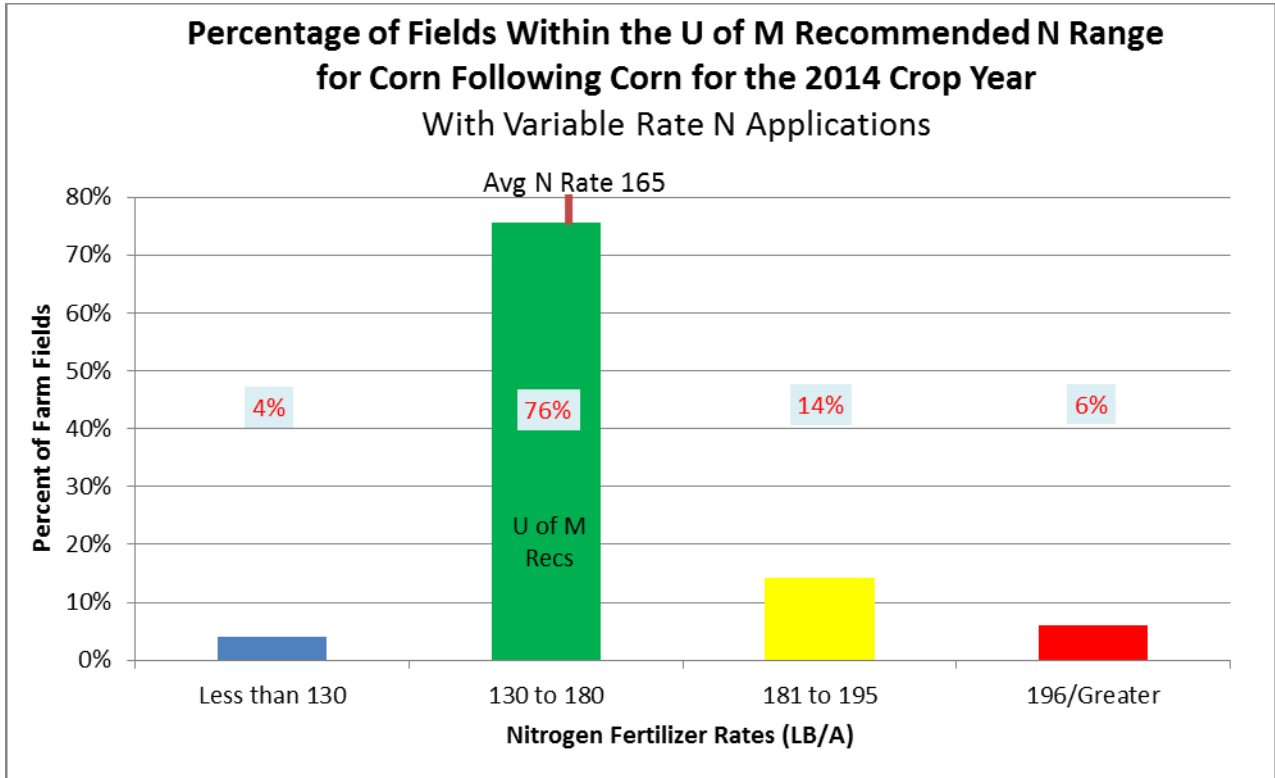


Figure 42. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the SW BMP region for 2014: 49 fields.

Table 38. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	170	170	168	185
Avg N Rate LB/A	113	159	189	216

Northwestern Region: Corn Following Corn

There were 7 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.

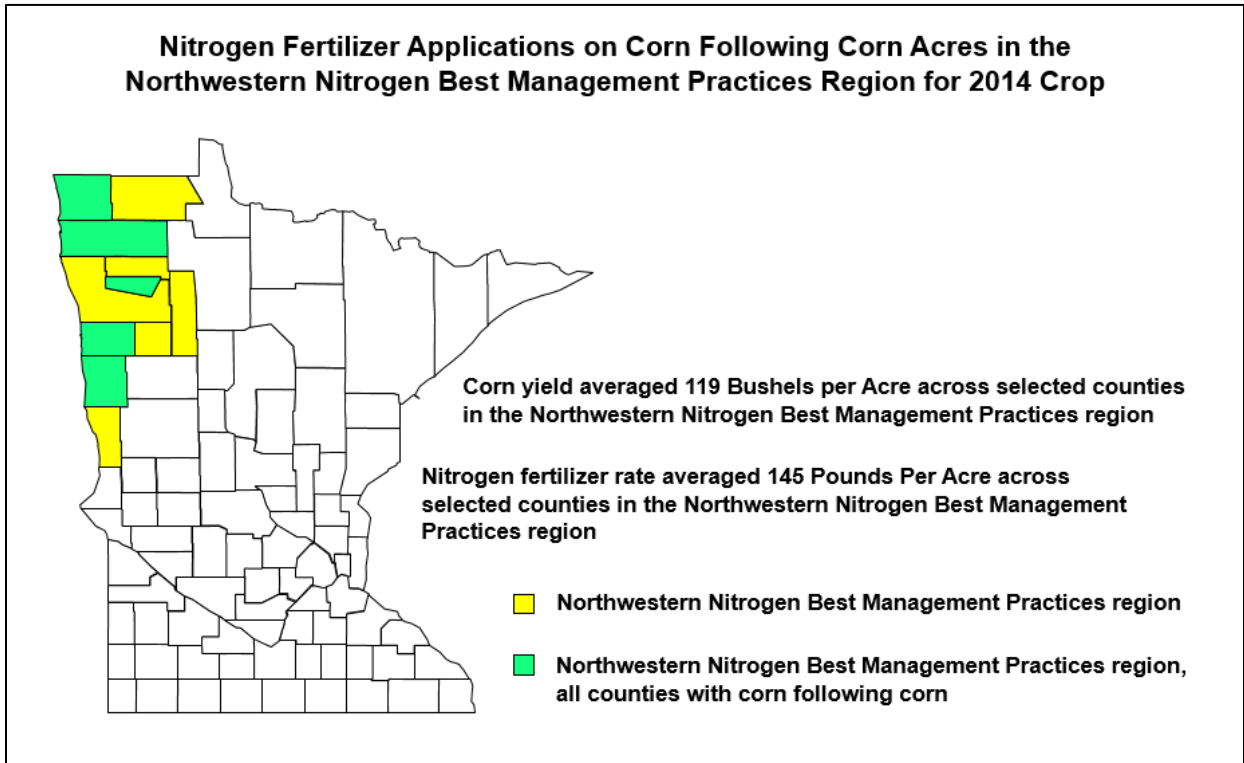


Figure 43. The corn yield averaged 119 bushels per acre and the nitrogen fertilizer rate averaged 145 pounds per acre in the NW BMP region.

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.

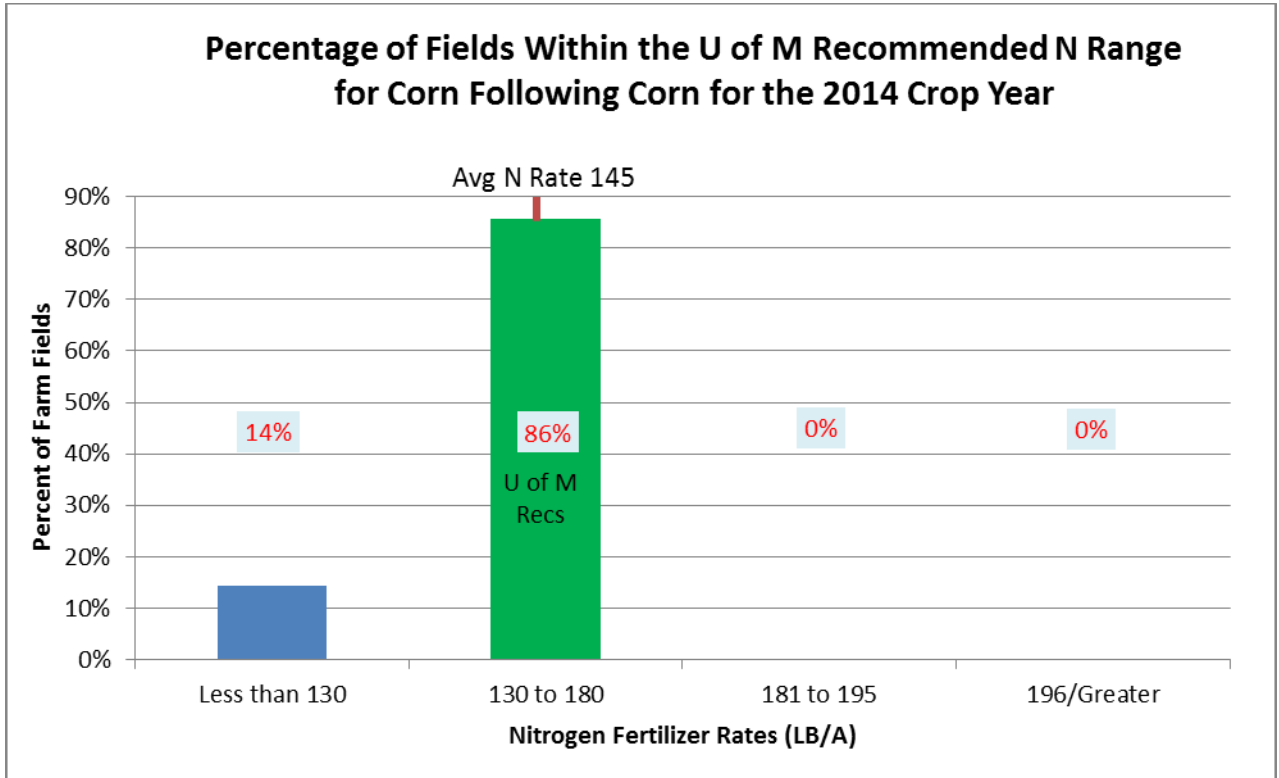


Figure 44. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the NW BMP region for 2014: 7 fields.

Table 39. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	130	117	No Data	No Data
Avg N Rate LB/A	108	151	No Data	No Data

Less than five farmers reported planting corn following corn in the NW BMP region for fields without variable rate applications of nitrogen.

Figure 45 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 40 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 45.

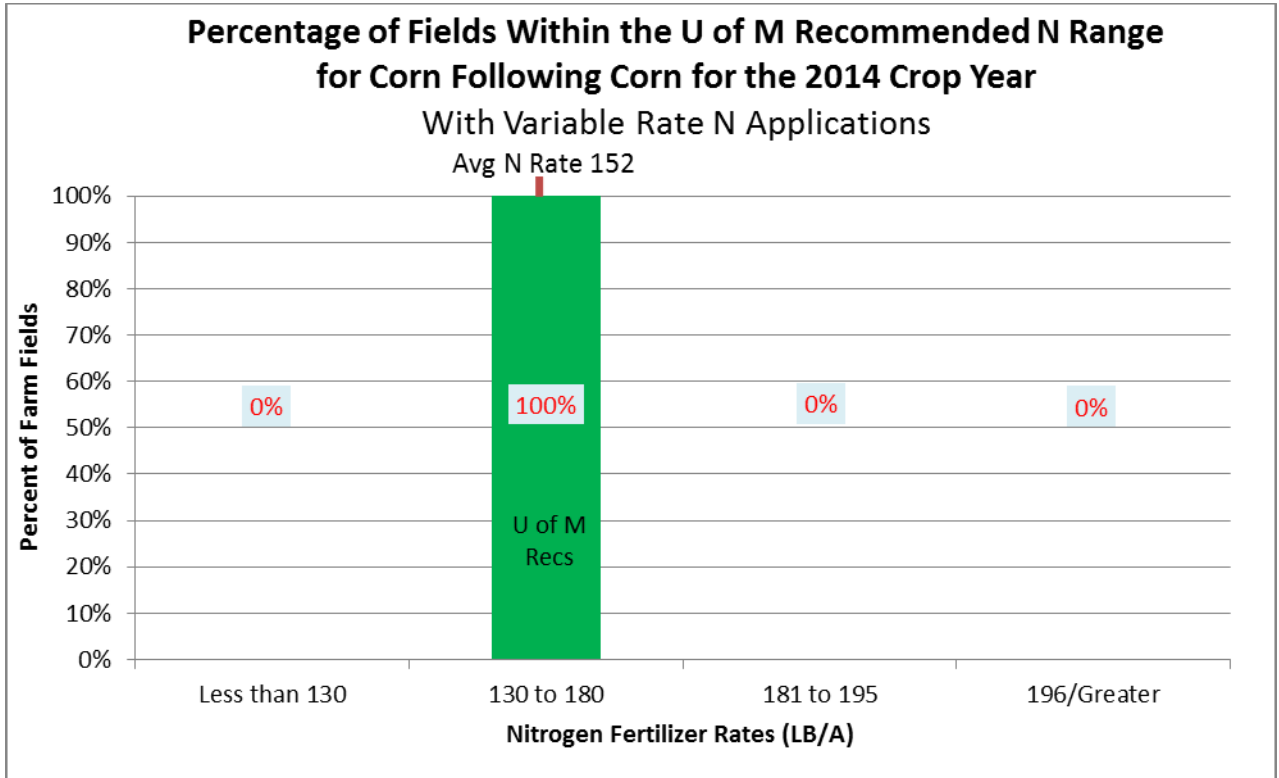


Figure 45. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the NW BMP region for 2014: 5 fields.

Table 40. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	No Data	122	No Data	No Data
Avg N Rate LB/A	No Data	152	No Data	No Data

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

There were 102 fields that were included in the IRR BMP region corn following corn analysis. Figure 46 details the location, average rate of nitrogen fertilizer and average yield for corn following corn in the IRR BMP region.

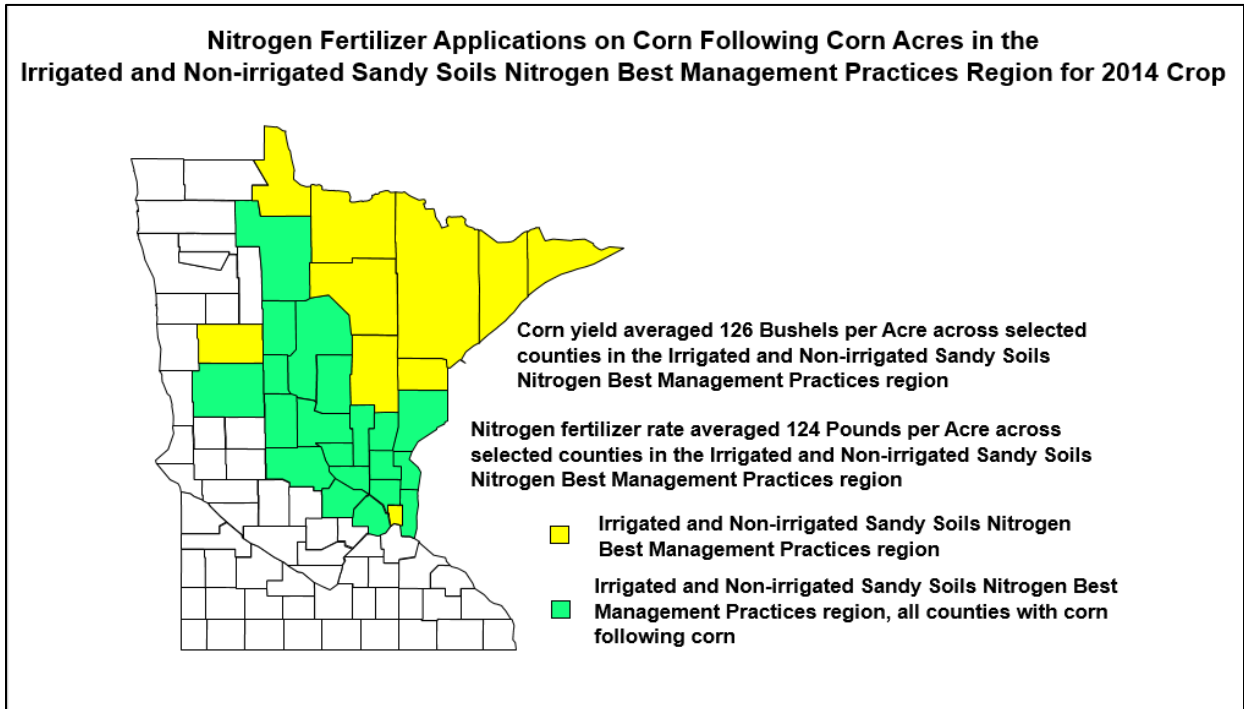


Figure 46. The corn yield averaged 126 bushels per acre and the nitrogen fertilizer rate averaged 124 pounds per acre in the IRR BMP region.

Figure 47 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 41 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 47.

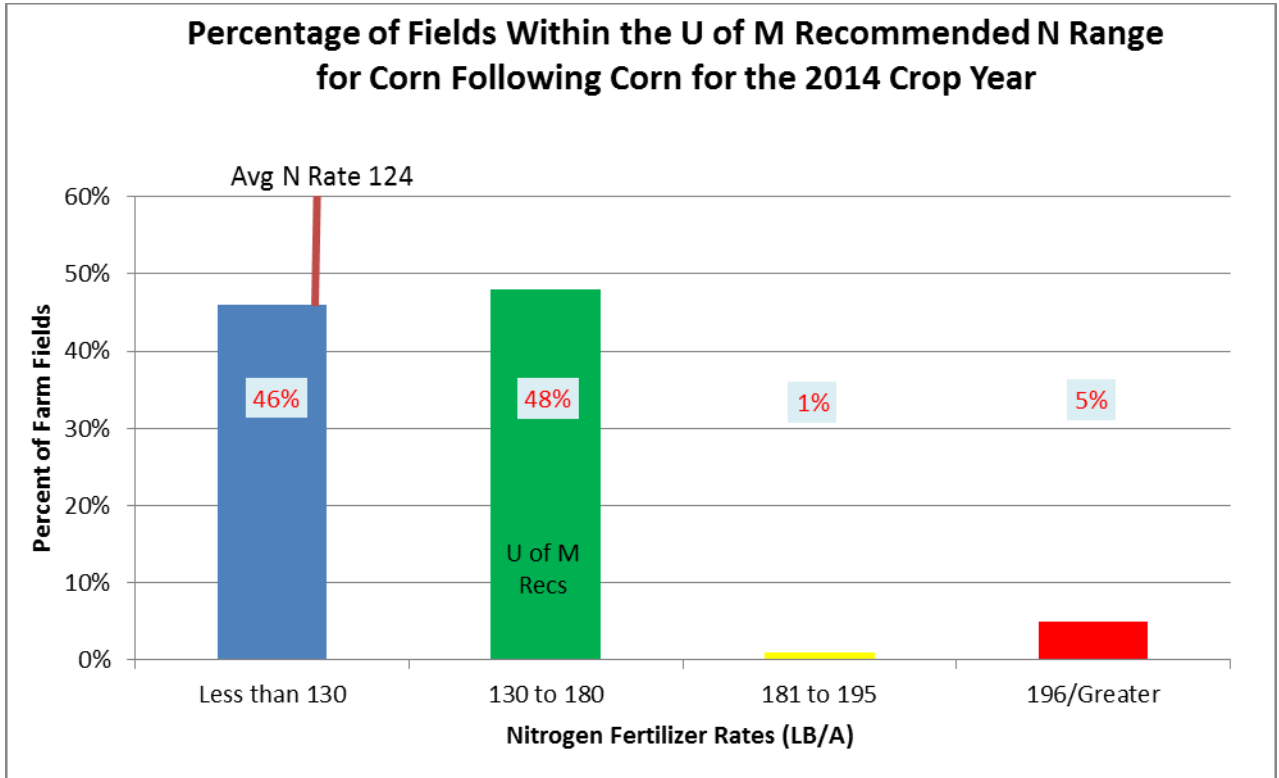


Figure 47. Percentage of fields within the U of M recommended N range for corn following corn with and without variable rate applications of nitrogen in the IRR BMP region for 2014: 102 fields.

Table 41. Nitrogen fertilizer rates and associated yields for corn following corn with and without variable rate nitrogen applications for the 2014 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	141	150	161
Avg N Rate LB/A	84	152	193	207

Figure 48 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 42 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 48.

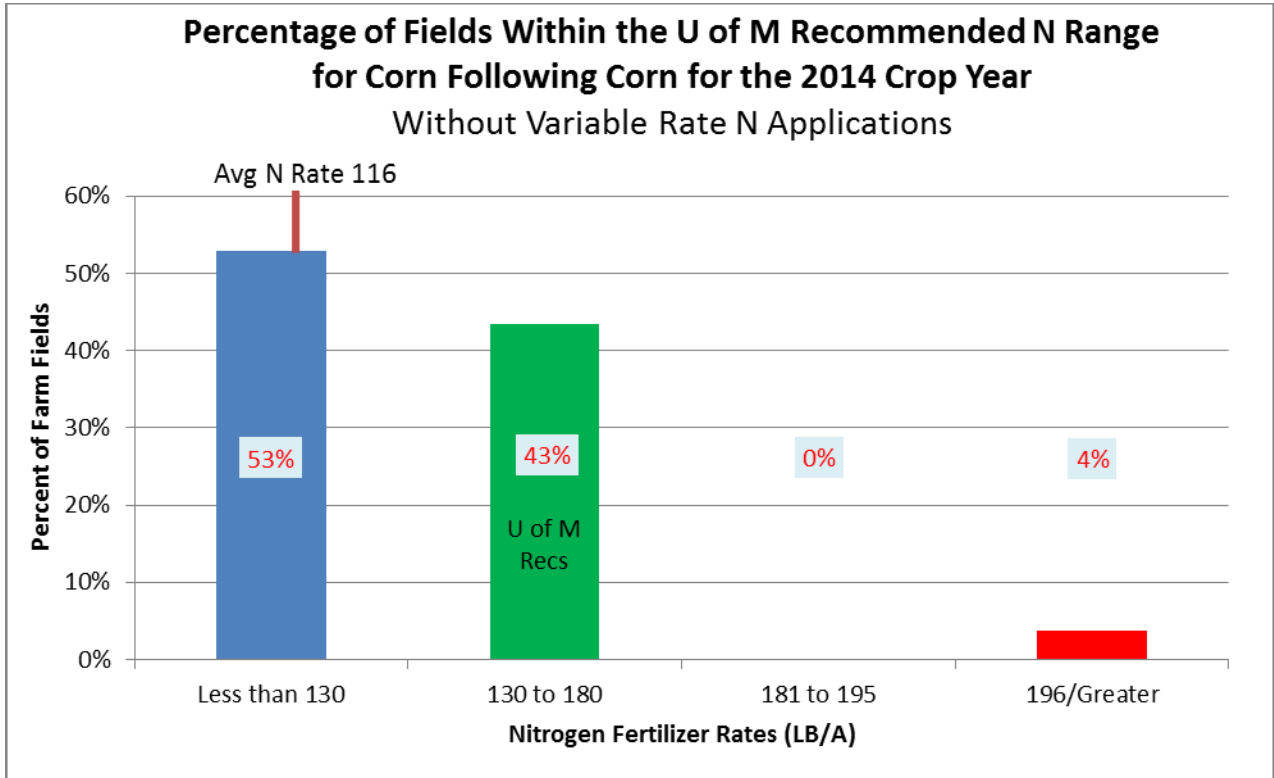


Figure 48. Percentage of fields within the U of M recommended N range for corn following corn without variable rate applications of nitrogen in the IRR BMP region for 2014: 53 fields.

Table 42. Nitrogen fertilizer rates and associated yields for corn following corn without variable rate nitrogen applications for the 2014 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	147	No Data	183
Avg N Rate LB/A	79	153	No Data	218

Figure 49 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 43 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 49.

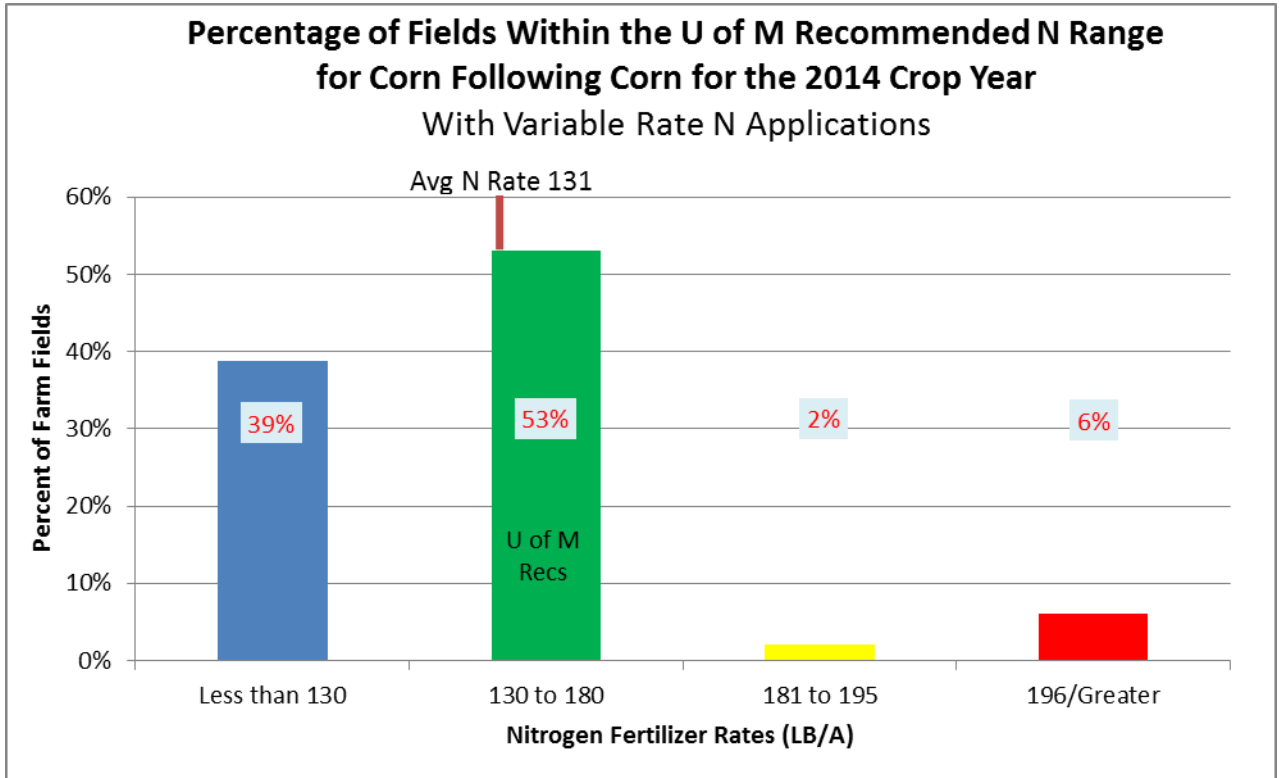


Figure 49. Percentage of fields within the U of M recommended N range for corn following corn with variable rate applications of nitrogen in the IRR BMP region for 2014: 49 fields.

Table 43. Nitrogen fertilizer rates and associated yields for corn following corn with variable rate nitrogen applications for the 2014 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	106	135	150	147
Avg N Rate LB/A	90	151	193	200

Statewide: Corn Following Corn Following Alfalfa

Statewide, four percent of the fields reports corn following corn following alfalfa (Figure 50). There were 75 fields surveyed in Minnesota.

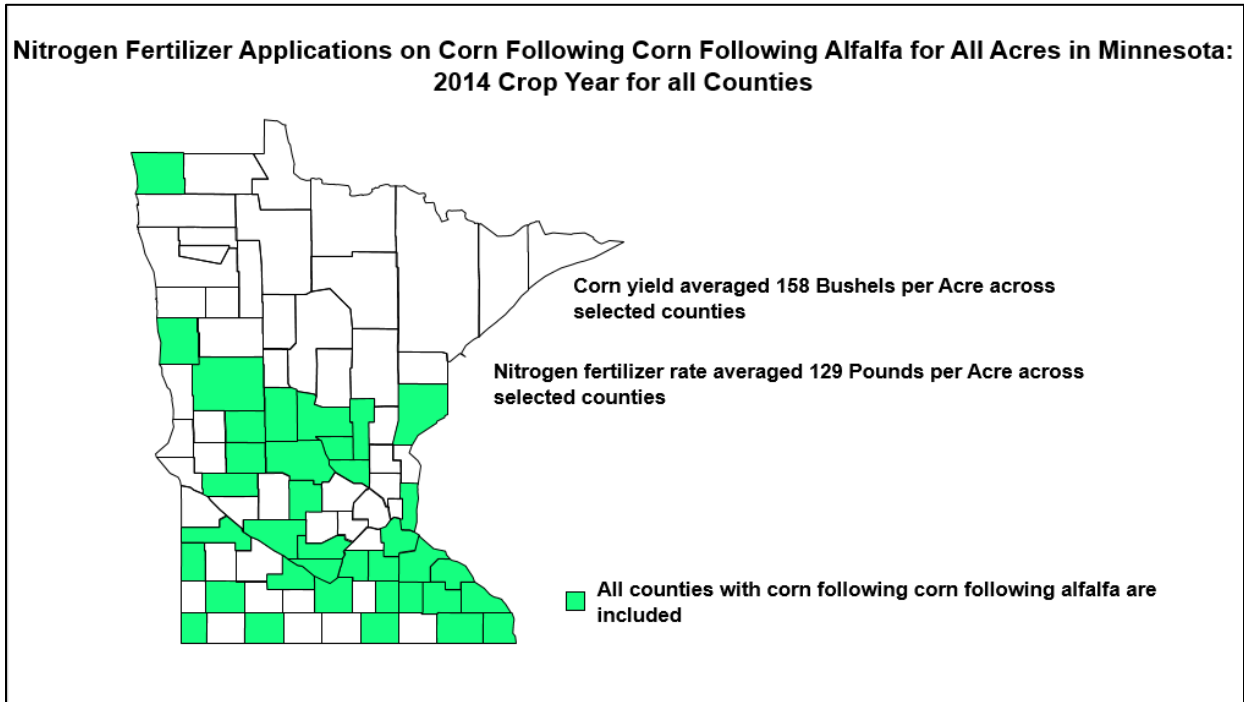


Figure 50. The corn yield averaged 158 bushels per acre and the nitrogen fertilizer rate averaged 129 pounds per acre on fields with corn following corn following alfalfa in Minnesota.

Figure 51 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 44 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 51.

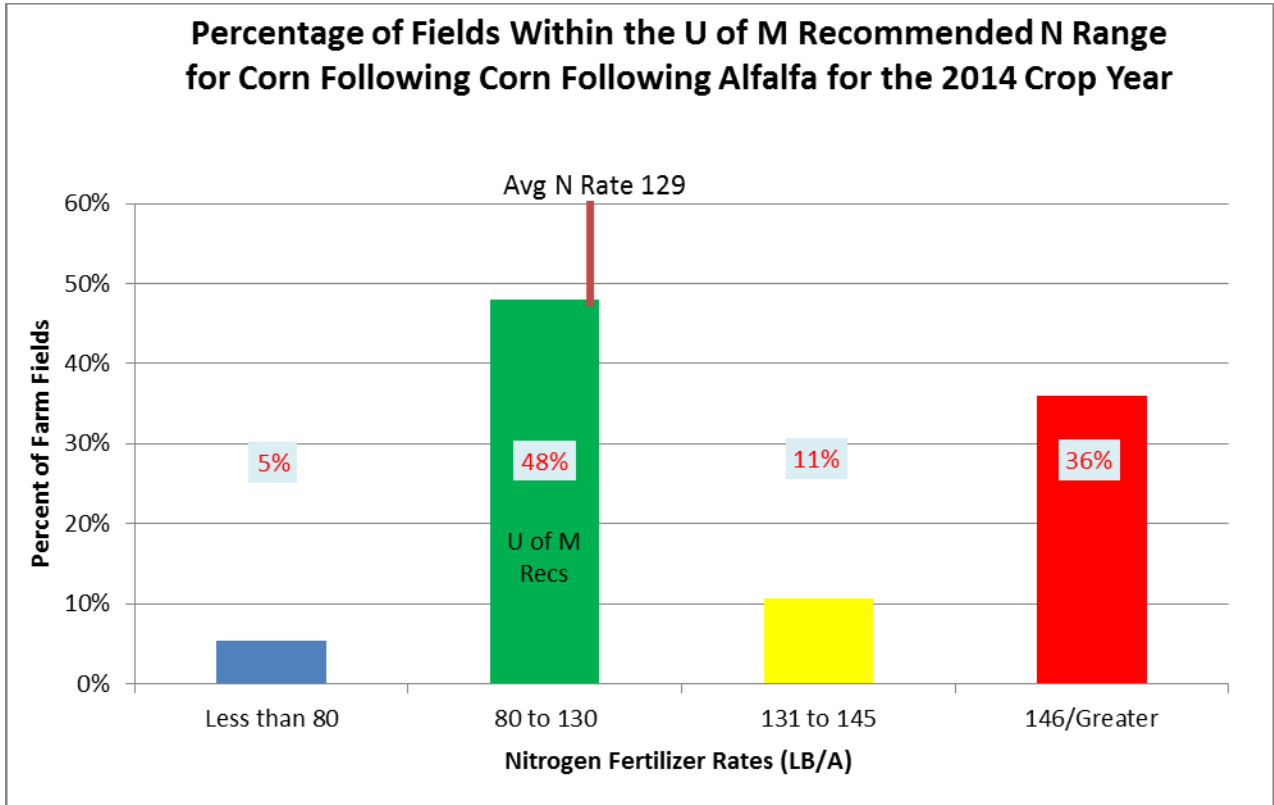


Figure 51. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2014: 75 fields.

Table 44. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	139	152	158	168
Avg N Rate LB/A	61	108	140	164

Figure 52 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 45 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 52.

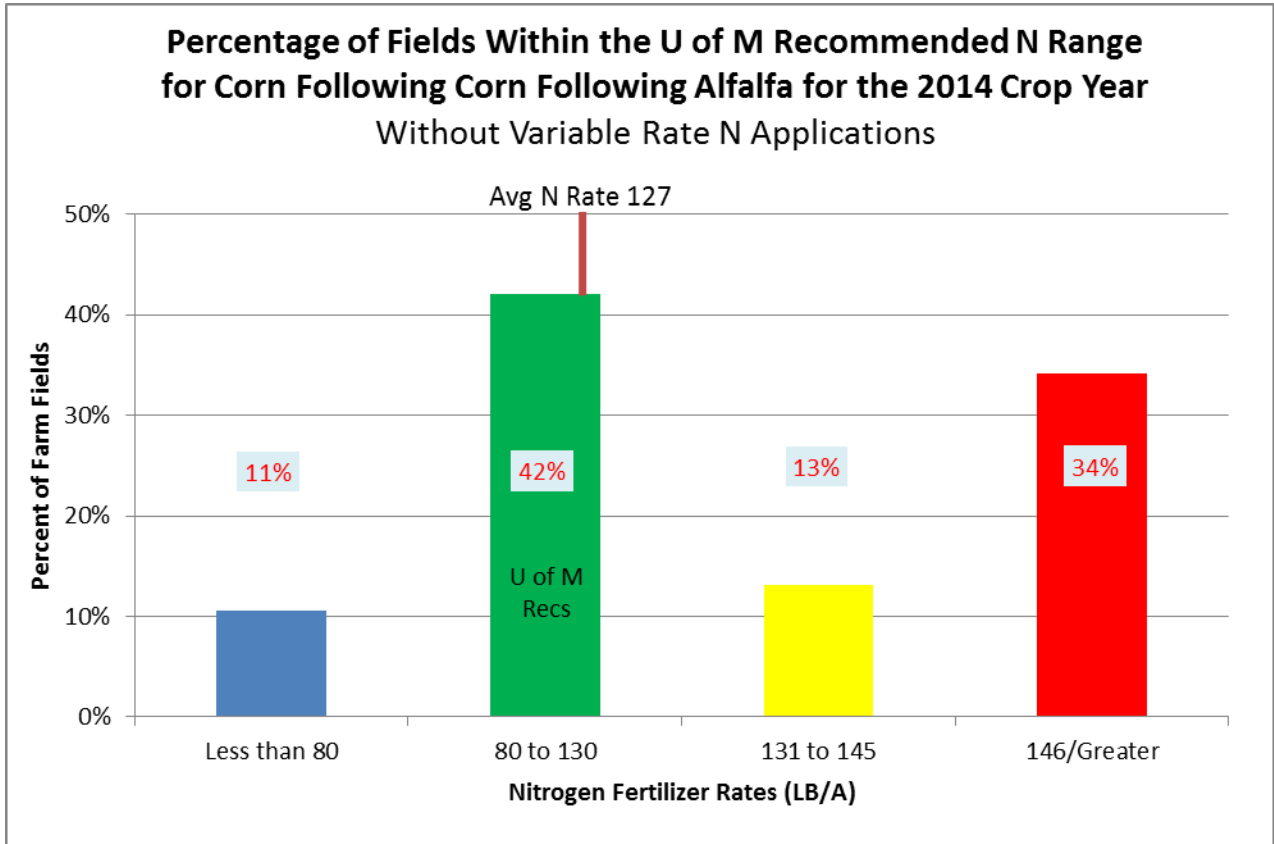


Figure 52. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2014: 38 fields.

Table 45. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2014 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	139	155	148	171
Avg N Rate LB/A	61	109	139	166

Figure 53 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 46 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 53.

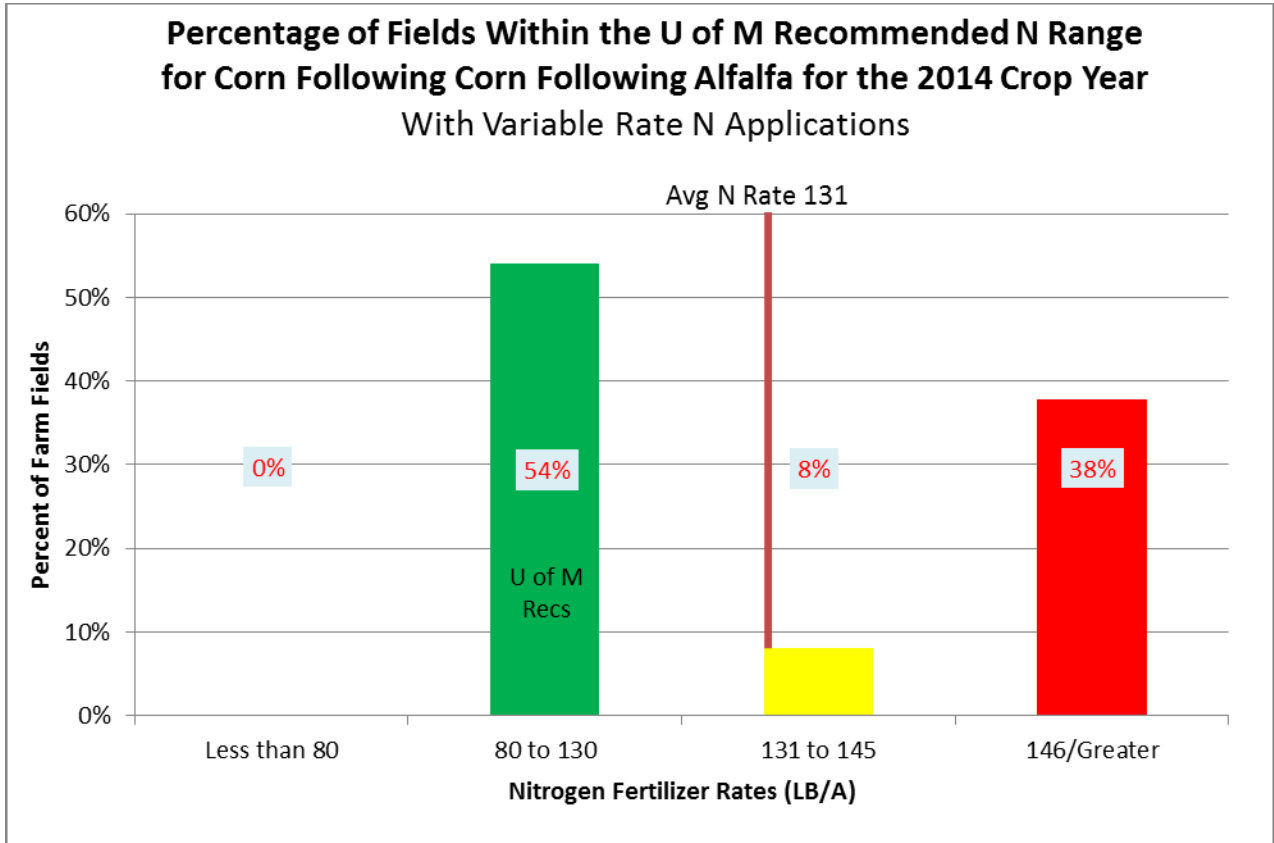


Figure 53. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2014: 37 fields.

Table 46. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2014 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	150	175	166
Avg N Rate LB/A	No Data	108	142	162

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 54 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SE BMP region.

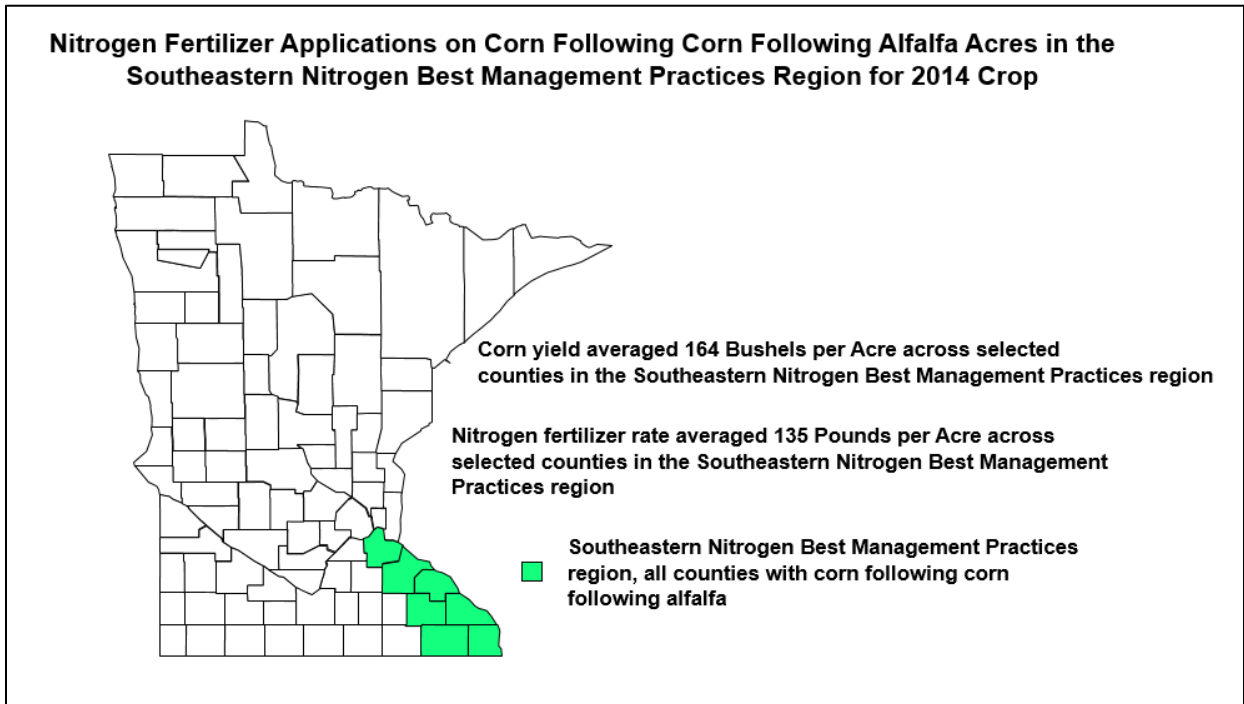


Figure 54. The corn yield averaged 164 bushels per acre and the nitrogen fertilizer rate averaged 135 pounds per acre in the SE BMP region.

Figure 55 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 47 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 55.

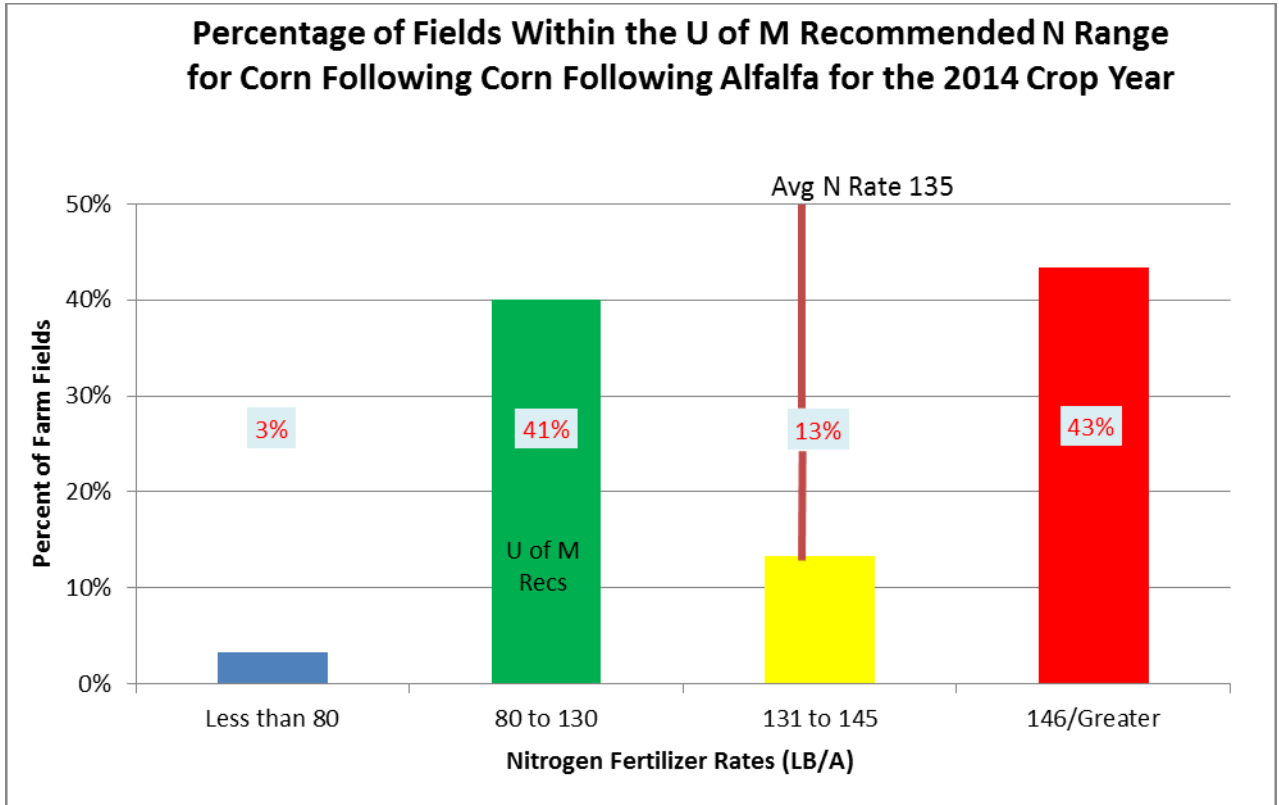


Figure 55. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2014: 30 fields.

Table 47. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	150	157	161	172
Avg N Rate LB/A	70	111	140	161

Figure 56 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 48 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 56.

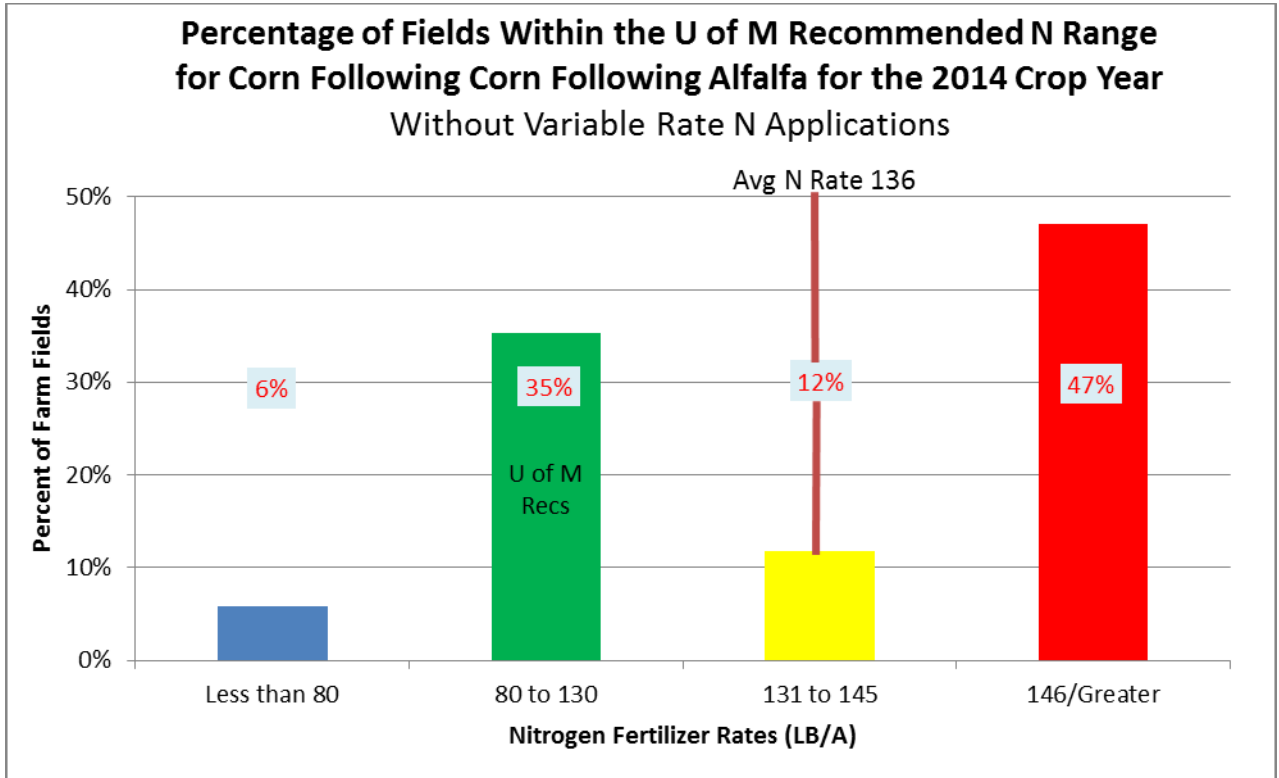


Figure 56. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2014: 17 Fields

Table 48. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2014 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	150	154	155	174
Avg N Rate LB/A	70	109	140	163

Figure 57 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 49 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 57.

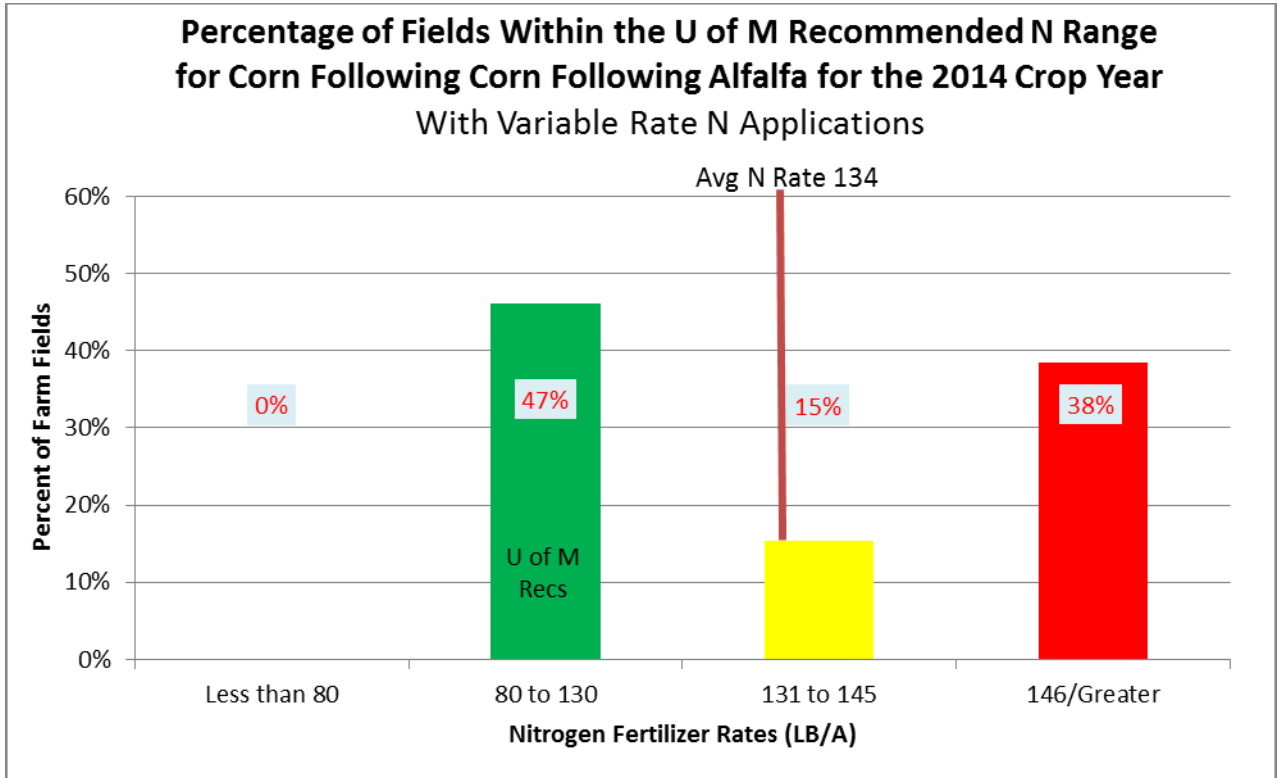


Figure 57. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SE BMP region for 2014: 13 Fields

Table 49. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2014 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	161	168	168
Avg N Rate LB/A	No Data	113	140	158

South Central Region: Corn Following Corn Following Alfalfa

There were 14 fields that were included in the SC BMP region corn following corn following alfalfa analysis. Figure 58 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SC BMP region.

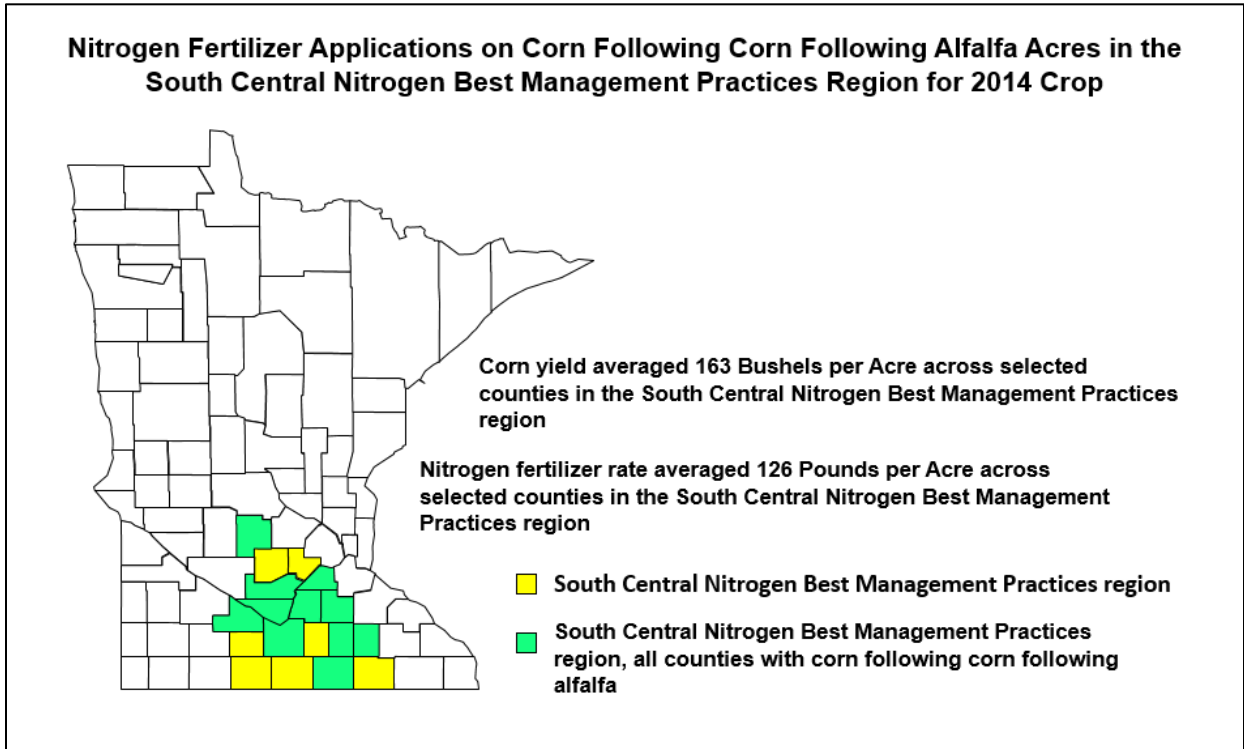


Figure 58. The corn yield averaged 163 bushels per acre and the nitrogen fertilizer rate averaged 126 pounds per acre in the SC BMP region.

Figure 59 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 50 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 59.

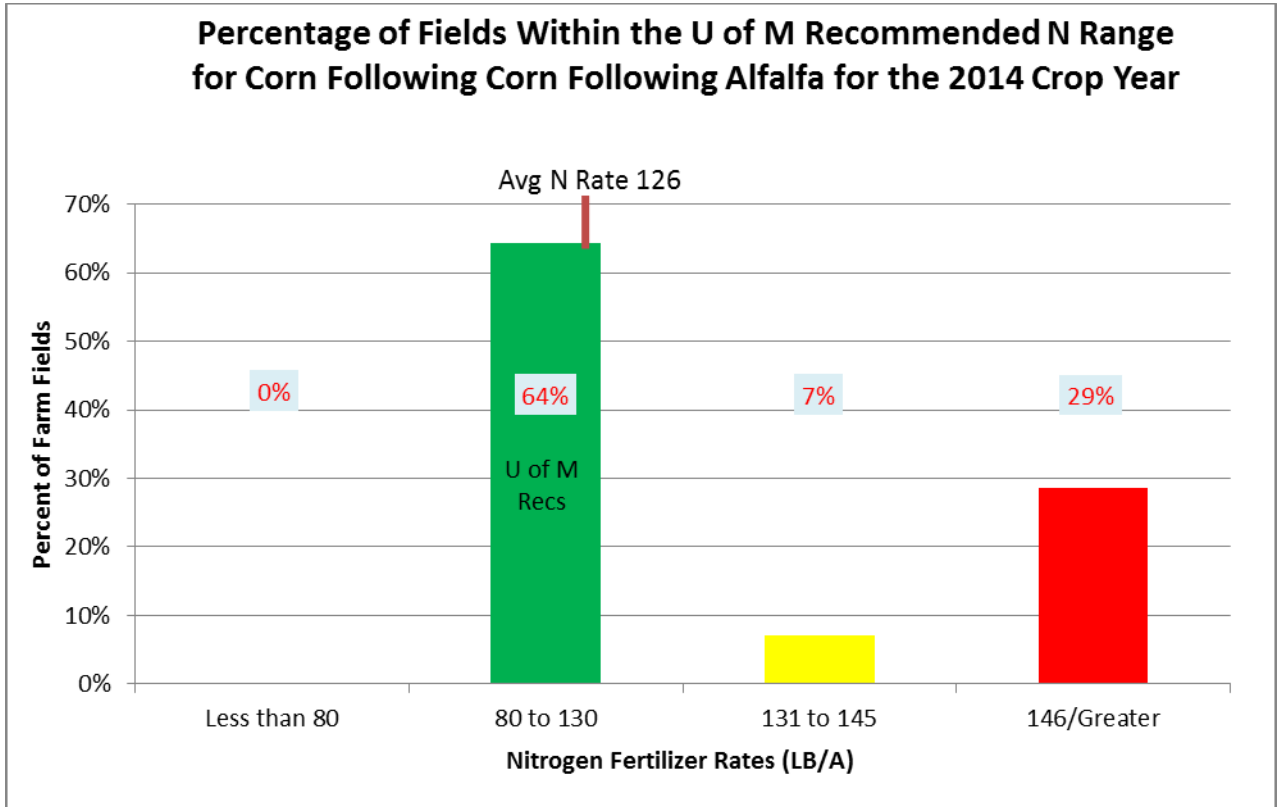


Figure 59. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SC BMP region for 2014: 14 fields.

Table 50. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	157	190	170
Avg N Rate LB/A	No Data	108	145	163

Less than five farmers reported planting corn following corn following alfalfa in the SC BMP region for fields without variable rate applications of nitrogen.

Figure 60 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 51 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 60.

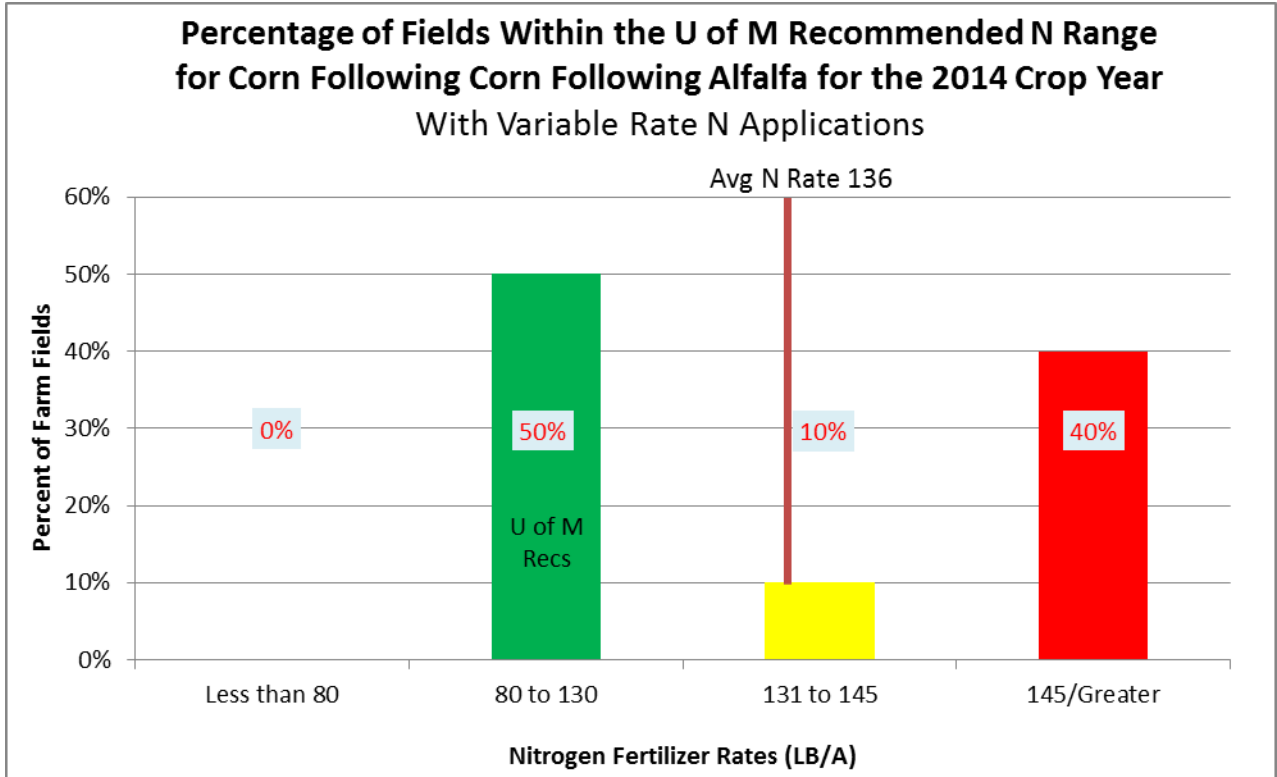


Figure 60. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SC BMP region for 2014: 10 fields.

Table 51. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2014 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	154	190	170
Avg N Rate LB/A	No Data	111	145	163

Southwestern and West Central Region: Corn Following Corn Following Alfalfa

There were 12 fields that were included in the SW BMP region corn following corn following alfalfa analysis. Figure 61 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the SW BMP region.

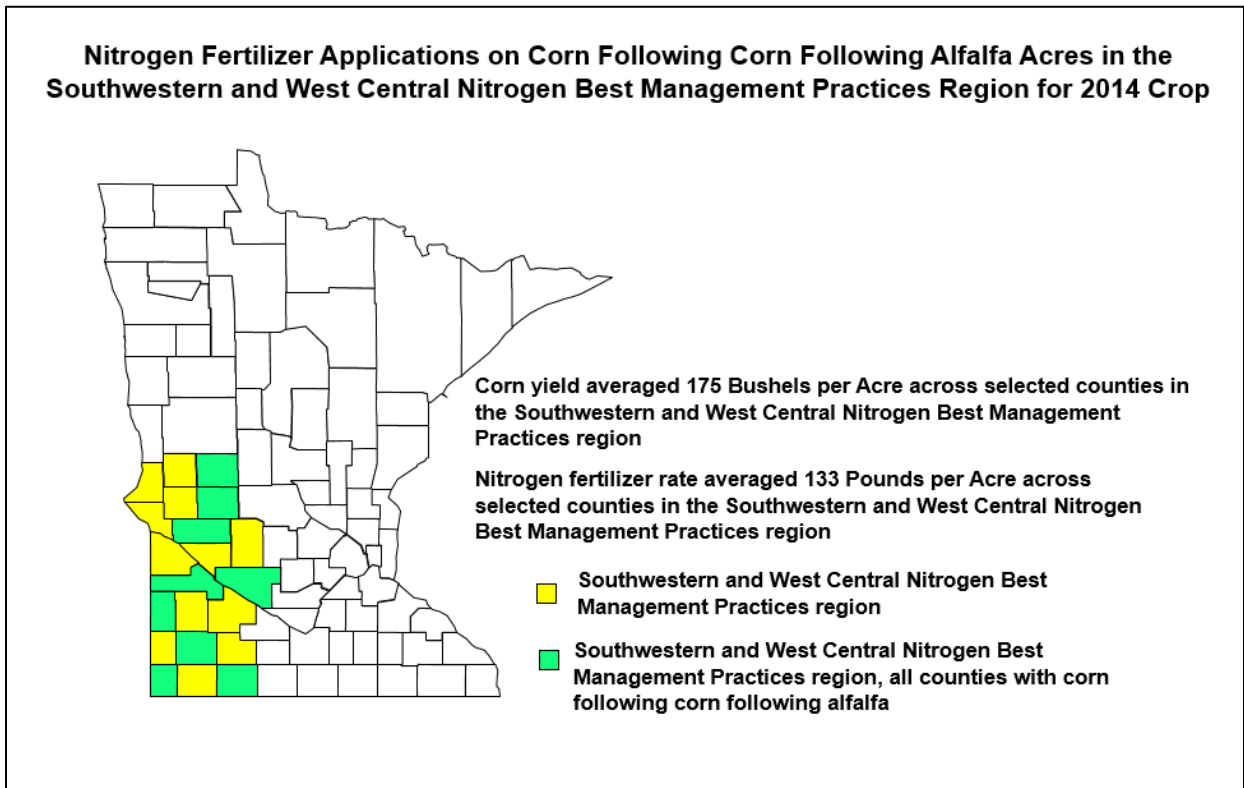


Figure 61. The corn yield averaged 175 bushels per acre and the nitrogen fertilizer rate averaged 133 pounds per acre in the SW BMP region.

Figure 62 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 52 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 62.

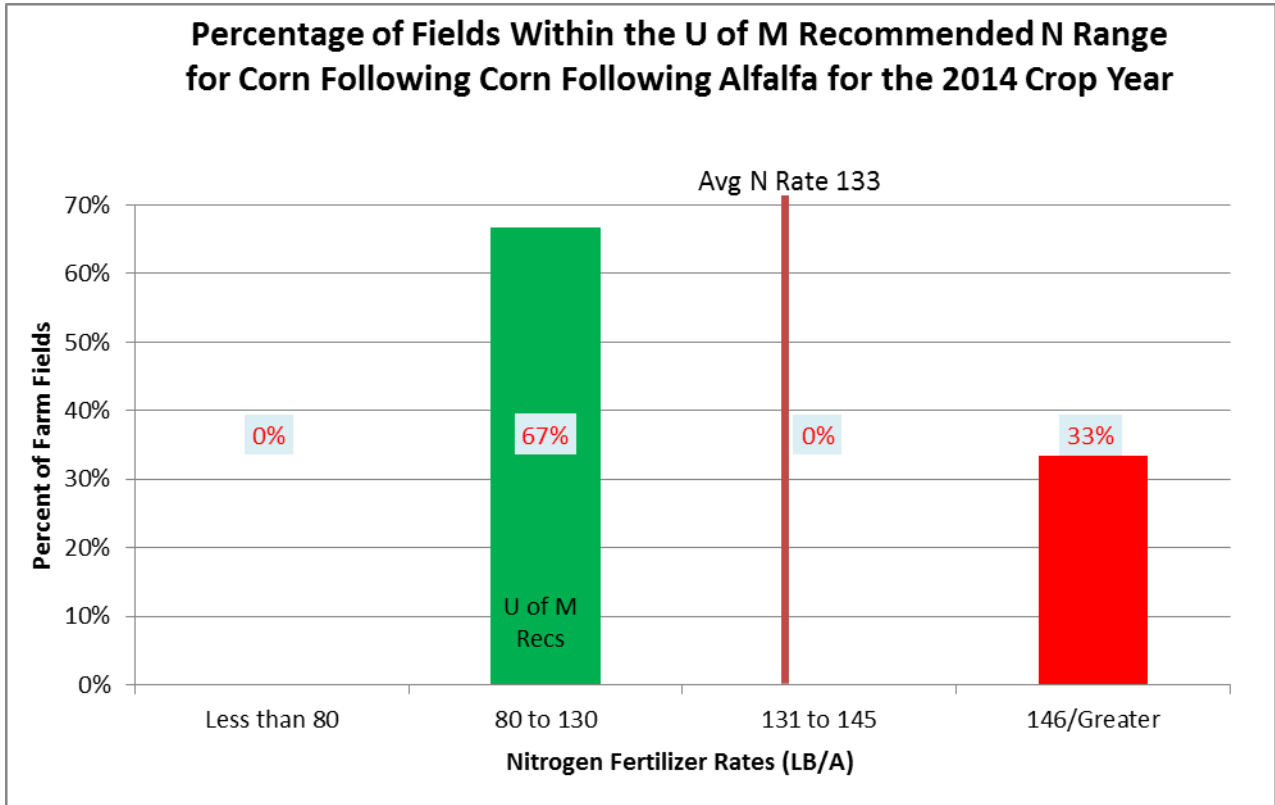


Figure 62. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2014: 12 fields.

Table 52. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	No Data	165	No Data	194
Avg N Rate LB/A	No Data	108	No Data	184

Less than five farmers reported planting corn following corn following alfalfa in the SW BMP region for fields without variable rate applications of nitrogen.

Figure 63 details the distribution of nitrogen fertilizer rates in the SW 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 63.

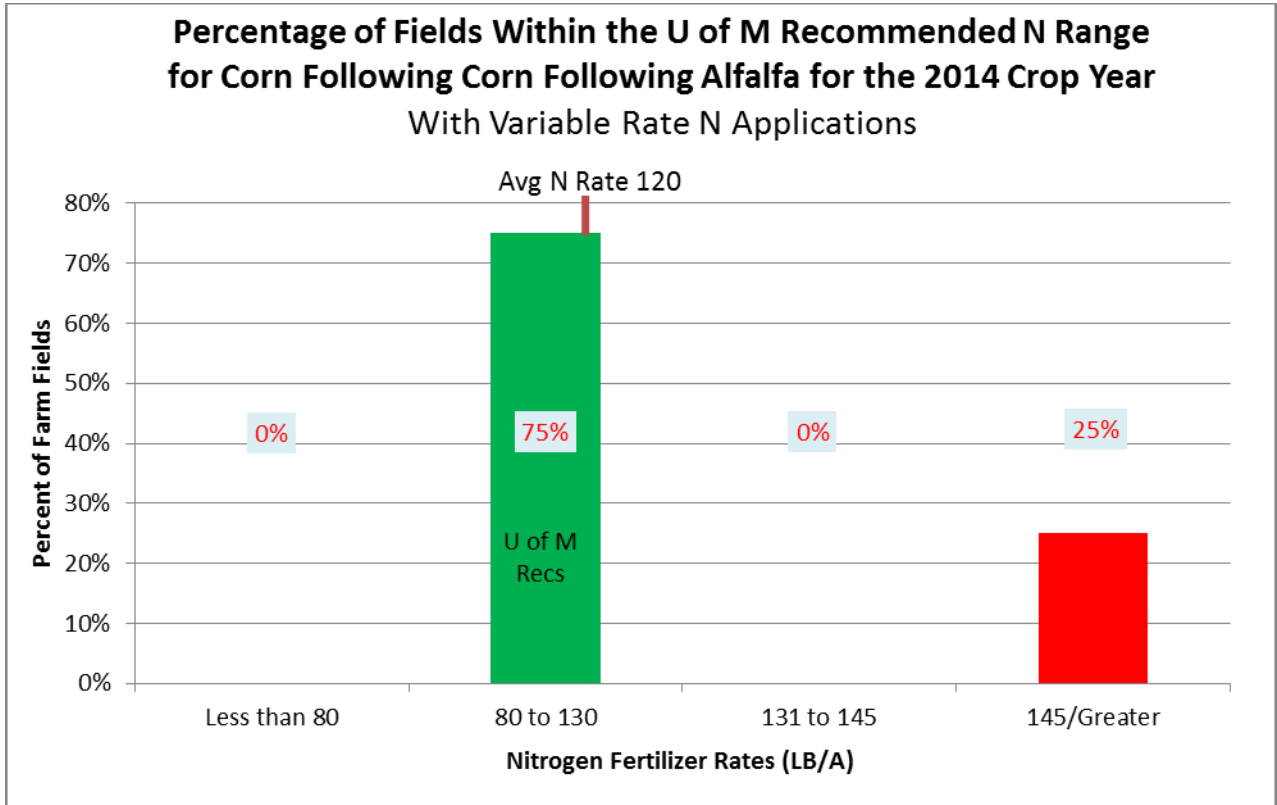


Figure 63. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the SW BMP region for 2014: 8 fields.

Table 53. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2014 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	No Data	159	No Data	180
Avg N Rate LB/A	No Data	102	No Data	173

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 17 fields that were included in the IRR BMP region corn following corn following alfalfa analysis. Figure 64 details the location, average rate of nitrogen fertilizer and average yield for corn following corn following alfalfa in the IRR BMP region.

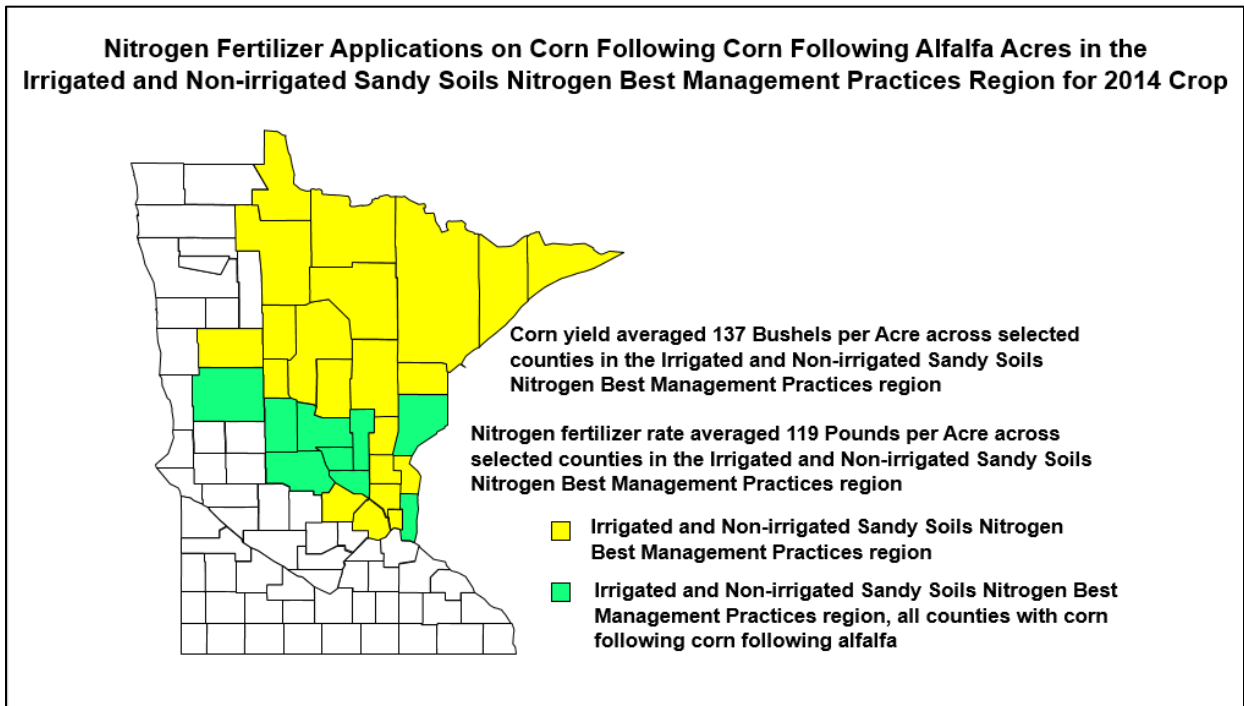


Figure 64. The corn yield averaged 137 bushels per acre and the nitrogen fertilizer rate averaged 119 pounds per acre in the IRR BMP region.

Figure 65 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 54 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 65.

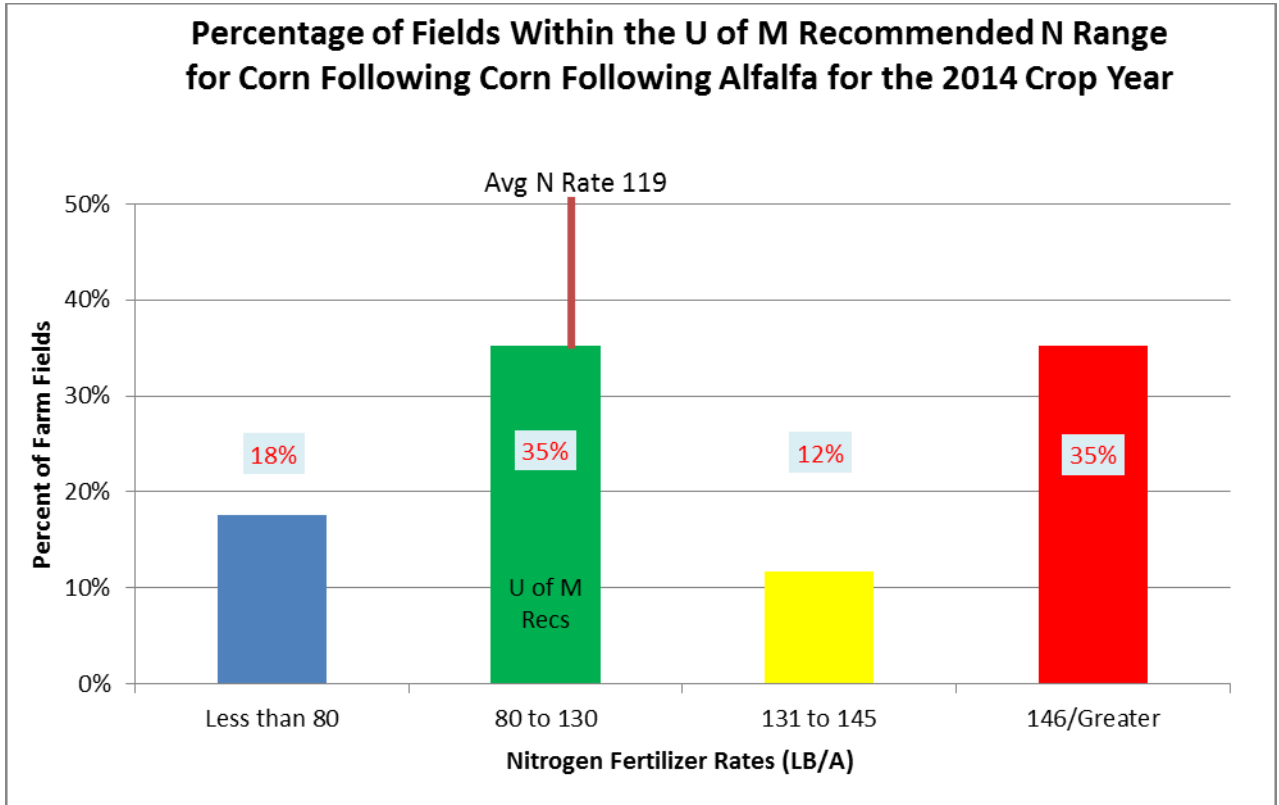


Figure 65. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2014: 17 fields.

Table 54. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	132	142	143
Avg N Rate LB/A	58	105	138	158

Figure 66 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 55 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 66.

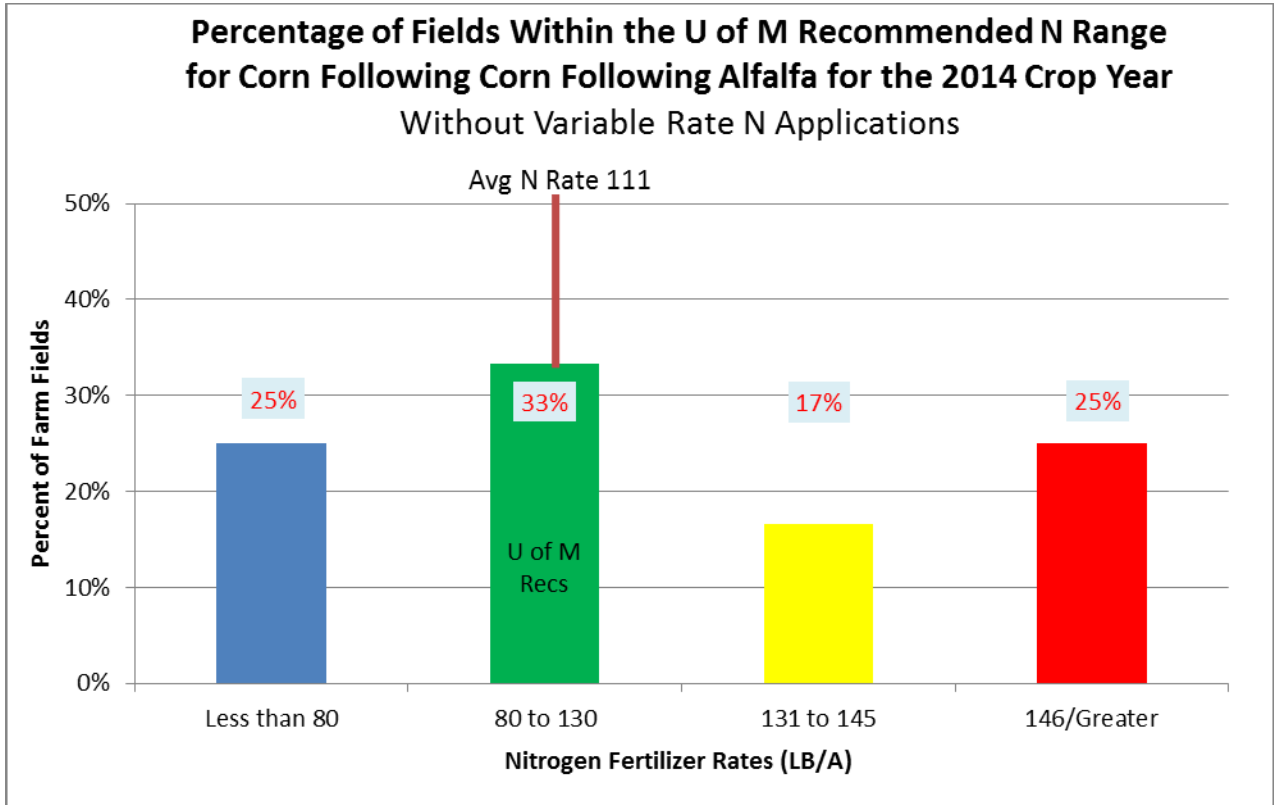


Figure 66. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2014: 12 fields.

Table 55. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa without variable rate nitrogen applications for the 2014 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	138	142	137
Avg N Rate LB/A	58	105	138	155

Figure 67 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 56 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 67.

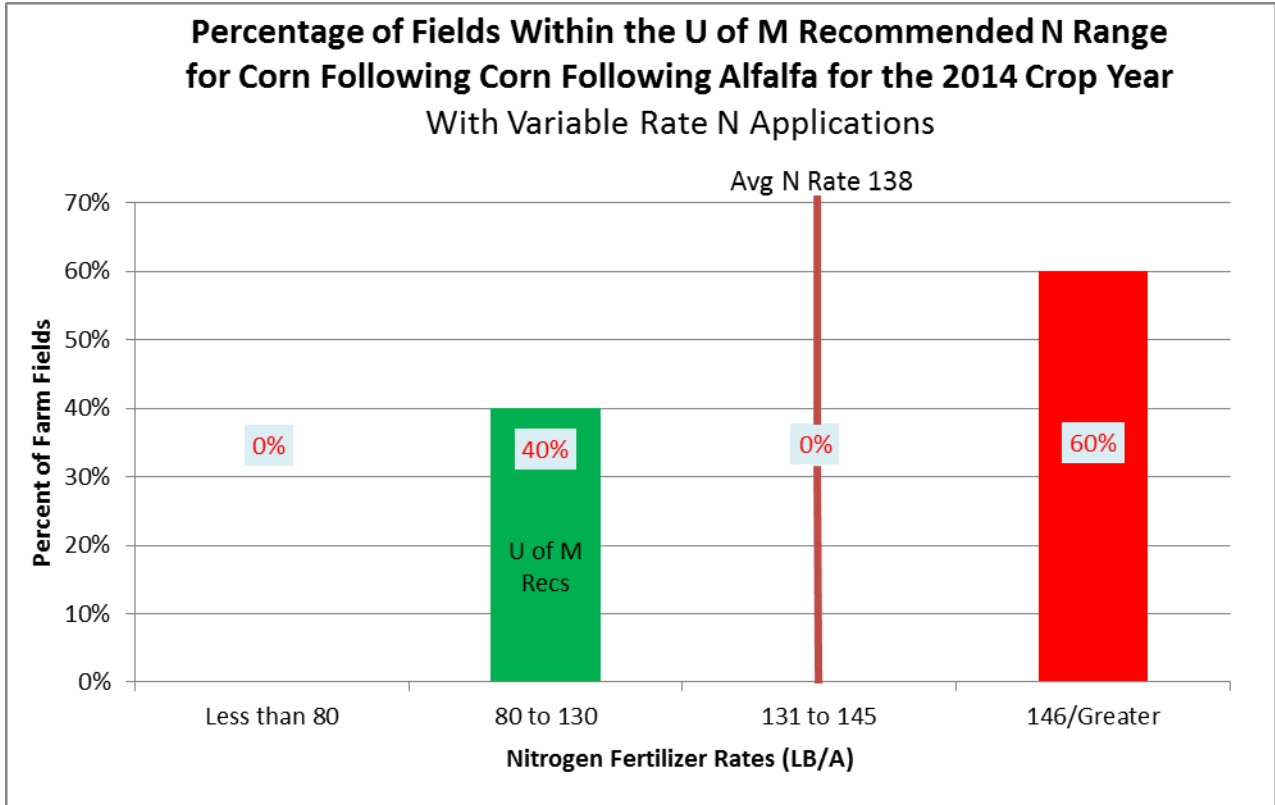


Figure 67. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2014: 5 fields.

Table 56. Nitrogen fertilizer rates and associated yields for corn following corn following alfalfa with variable rate nitrogen applications for the 2014 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	113	No Data	180
Avg N Rate LB/A	No Data	109	No Data	174

Statewide: Corn Following Alfalfa

Statewide, four percent of the fields reported corn following alfalfa (Figure 68). There were 59 fields surveyed in Minnesota.

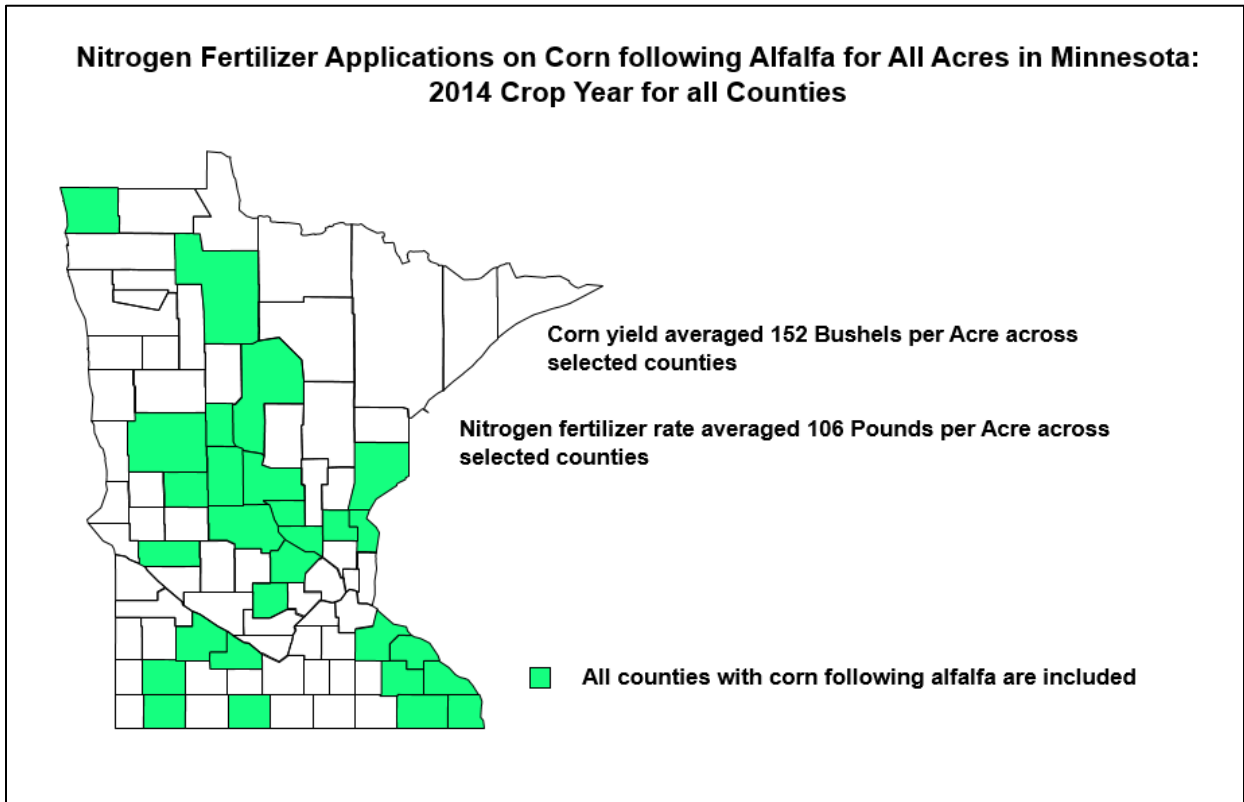


Figure 68. The corn yield averaged 152 bushels per acre and the nitrogen fertilizer rate averaged 106 pounds per acre on fields with corn following alfalfa in Minnesota.

Figure 69 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 57 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 69.

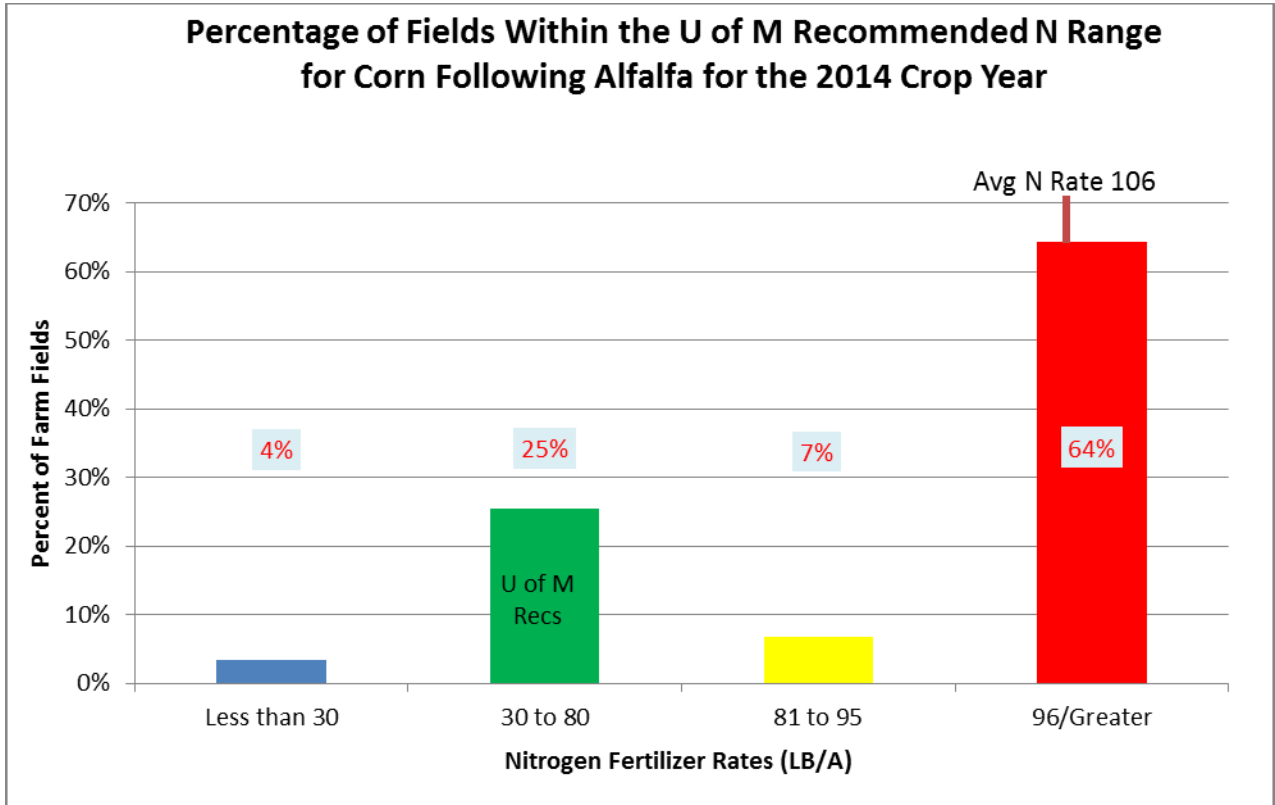


Figure 69. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in Minnesota for 2014: 59 fields.

Table 57. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	125	137	167	159
Avg N Rate LB/A	18	57	93	132

Figure 70 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 58 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 70.

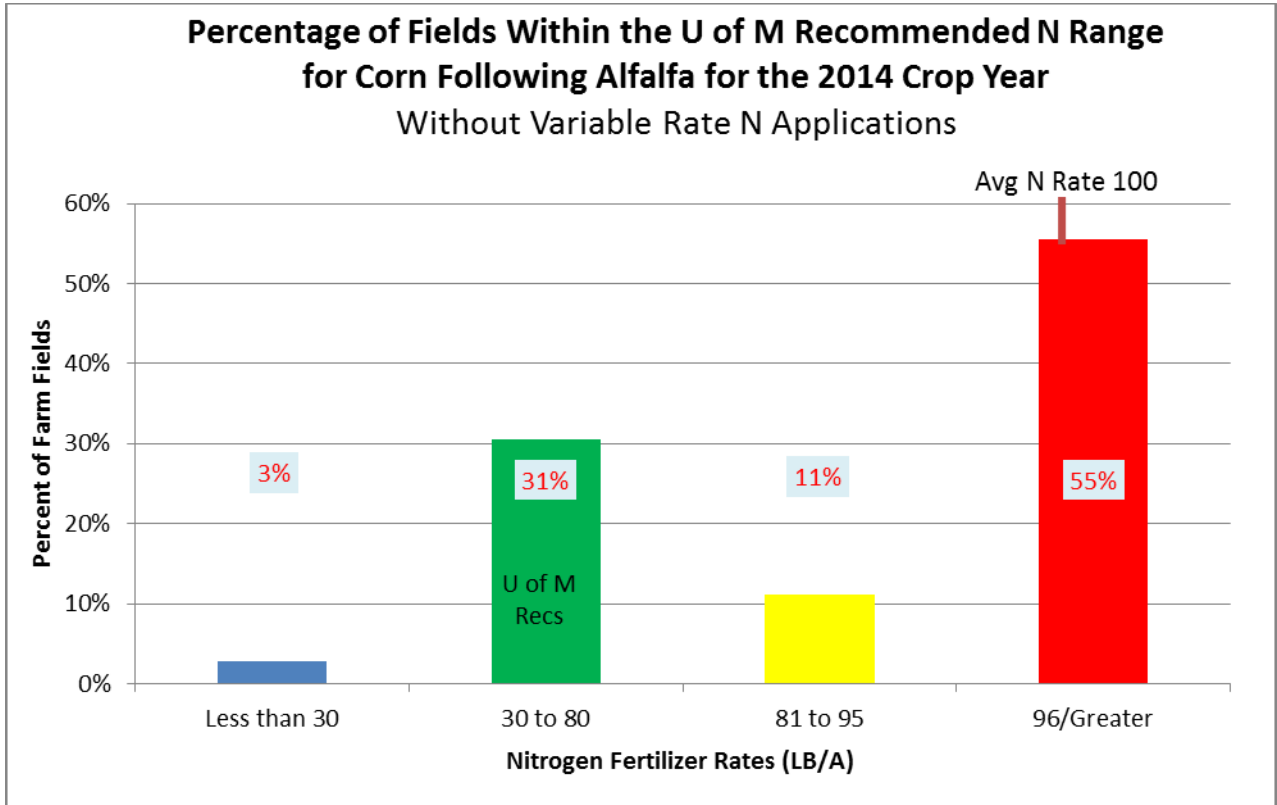


Figure 70. Percentage of fields within U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in Minnesota for 2014: 36 fields.

Table 58. Nitrogen fertilizer rates and associated corn yields for corn following alfalfa without variable rate nitrogen applications for the 2014 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	110	144	167	164
Avg N Rate LB/A	18	57	93	129

Figure 71 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 59 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 71.

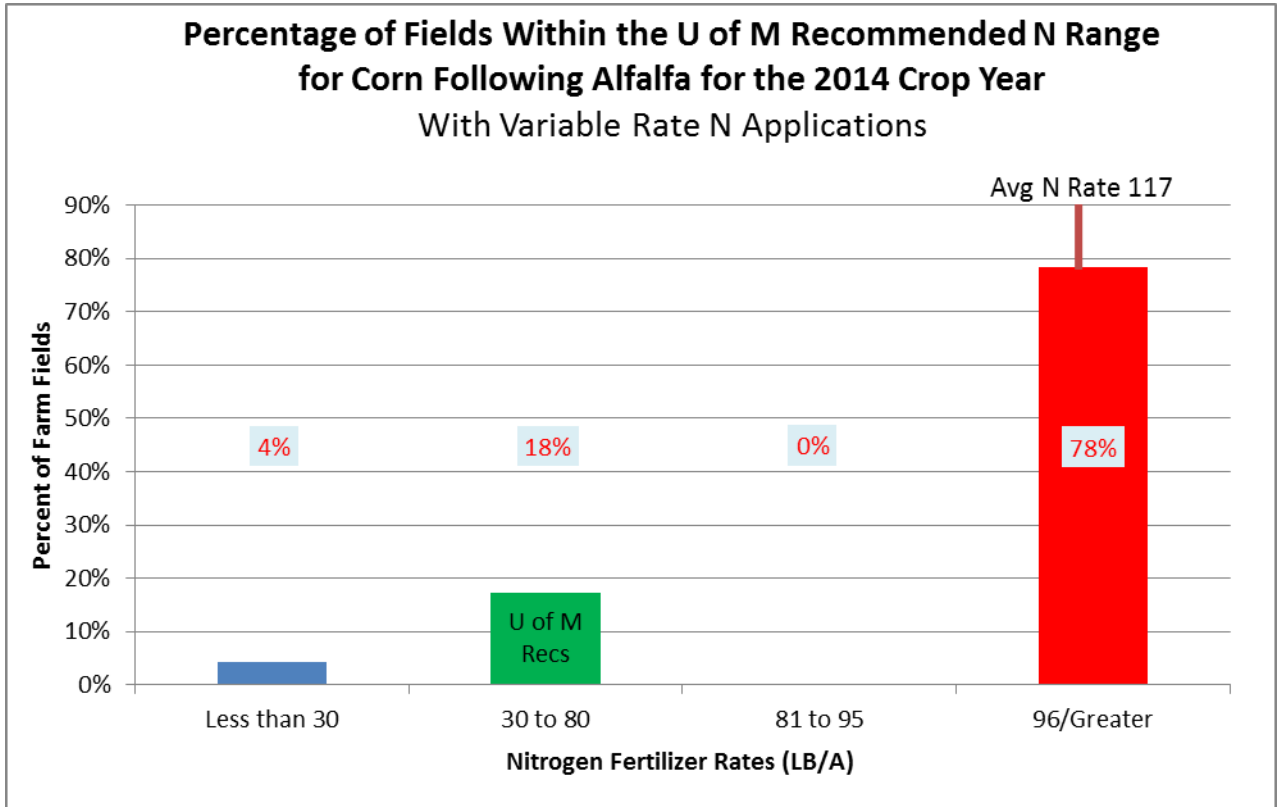


Figure 71. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in Minnesota for 2014: 23 fields.

Table 59. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2014 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	140	116	No Data	153
Avg N Rate LB/A	18	57	No Data	136

Southeastern Region: Corn Following Alfalfa

There were 21 fields that were included in the SE BMP region corn following alfalfa analysis. Figure 72 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the SE BMP region.

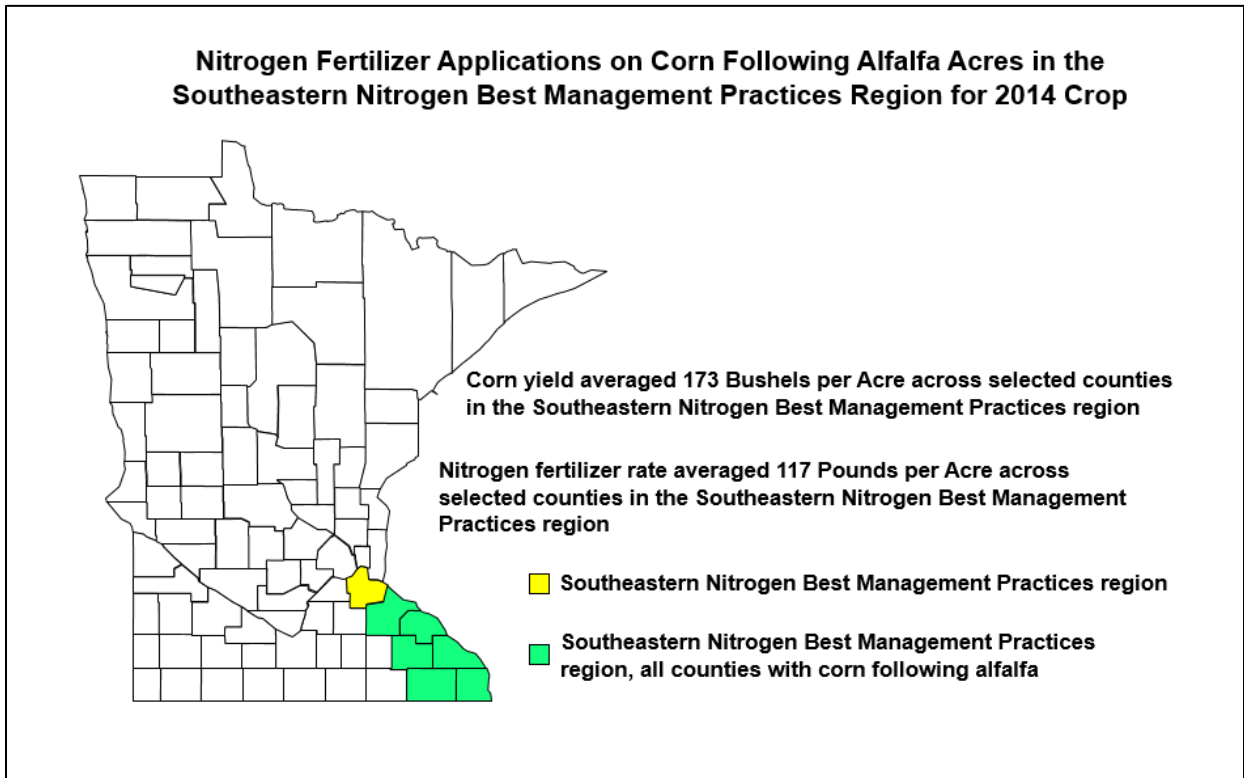


Figure 72. The corn yield averaged 173 bushels per acre and the nitrogen fertilizer rate averaged 117 pounds per acre in the SE BMP region.

Figure 73 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 60 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 73.

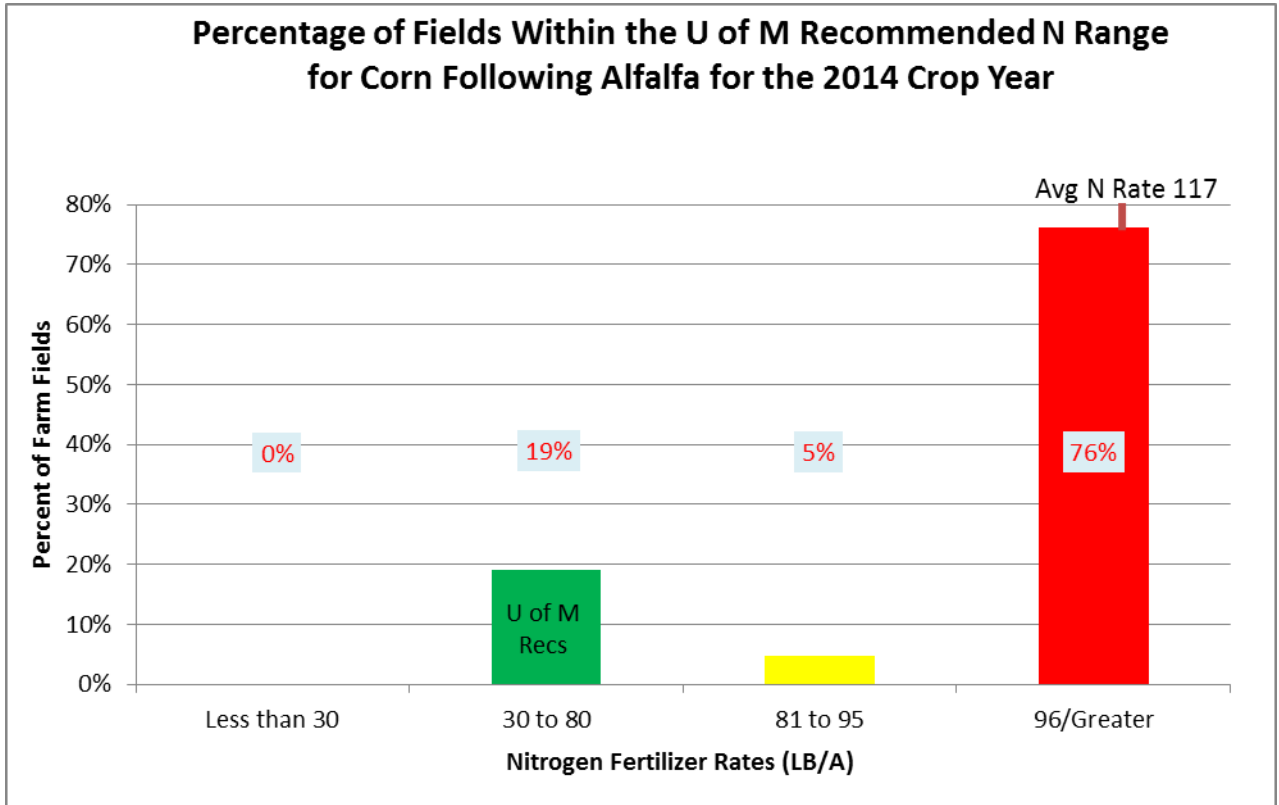


Figure 73. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SE BMP region for 2014: 21 fields.

Table 60. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	178	174	171
Avg N Rate LB/A	No Data	56	95	134

Figure 74 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 61 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 74.

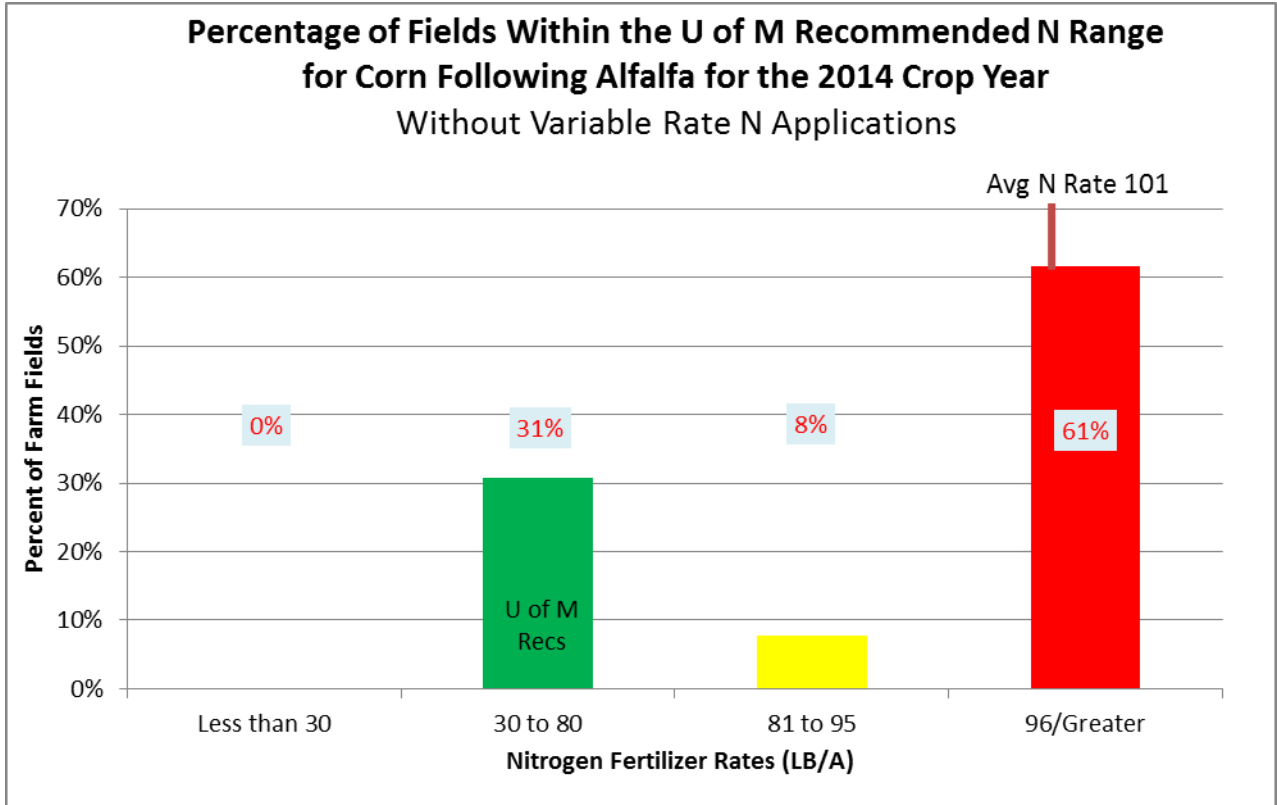


Figure 74. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SE BMP region for 2014: 13 fields.

Table 61. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2014 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	178	174	175
Avg N Rate LB/A	No Data	56	95	124

Figure 75 details the distribution of nitrogen fertilizer rates in the SE BMP region for corn following alfalfa with variable rate 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.

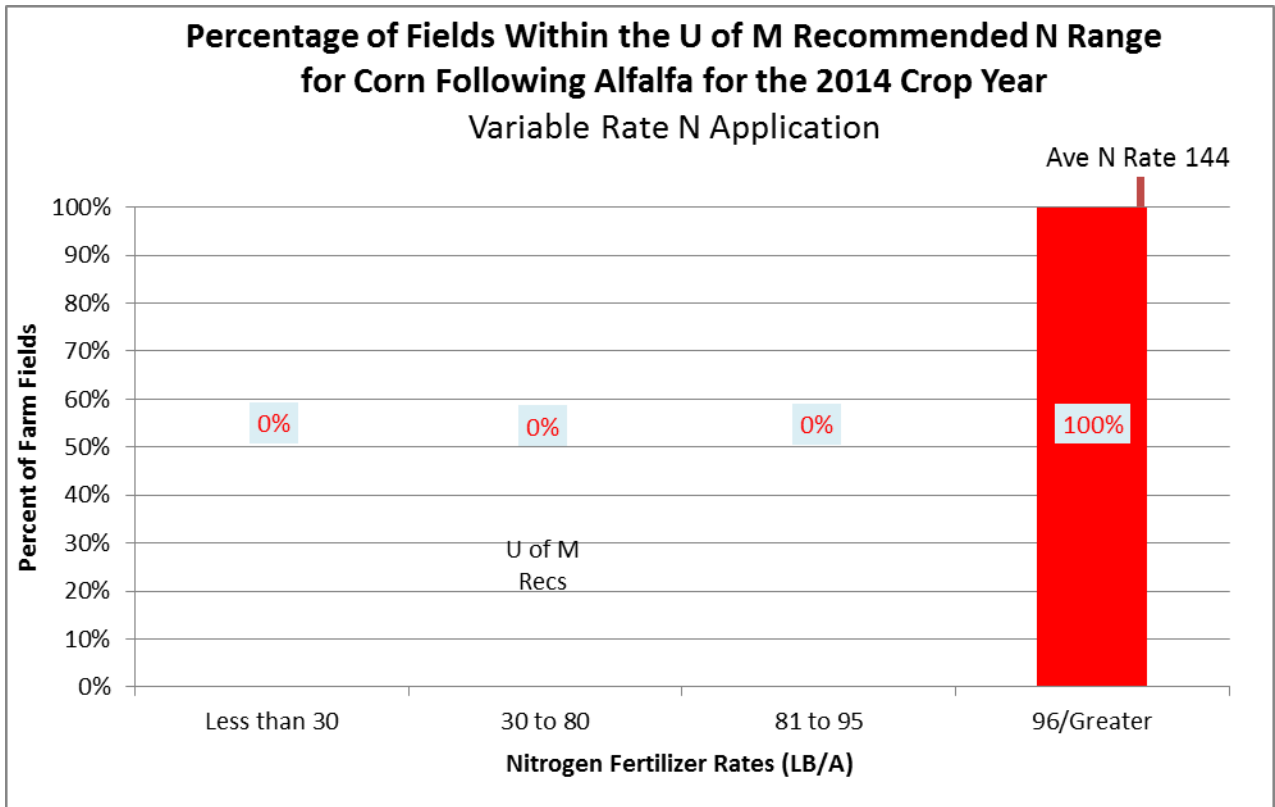


Figure 75. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in the SE BMP region for 2014: 8 fields.

Table 62. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2014 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	No Data	No Data	167
Avg N Rate LB/A	No Data	No Data	No Data	144

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa 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 Alfalfa

There were 11 fields that were included in the SW BMP region corn following alfalfa analysis. Figure 76 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the SW BMP region.

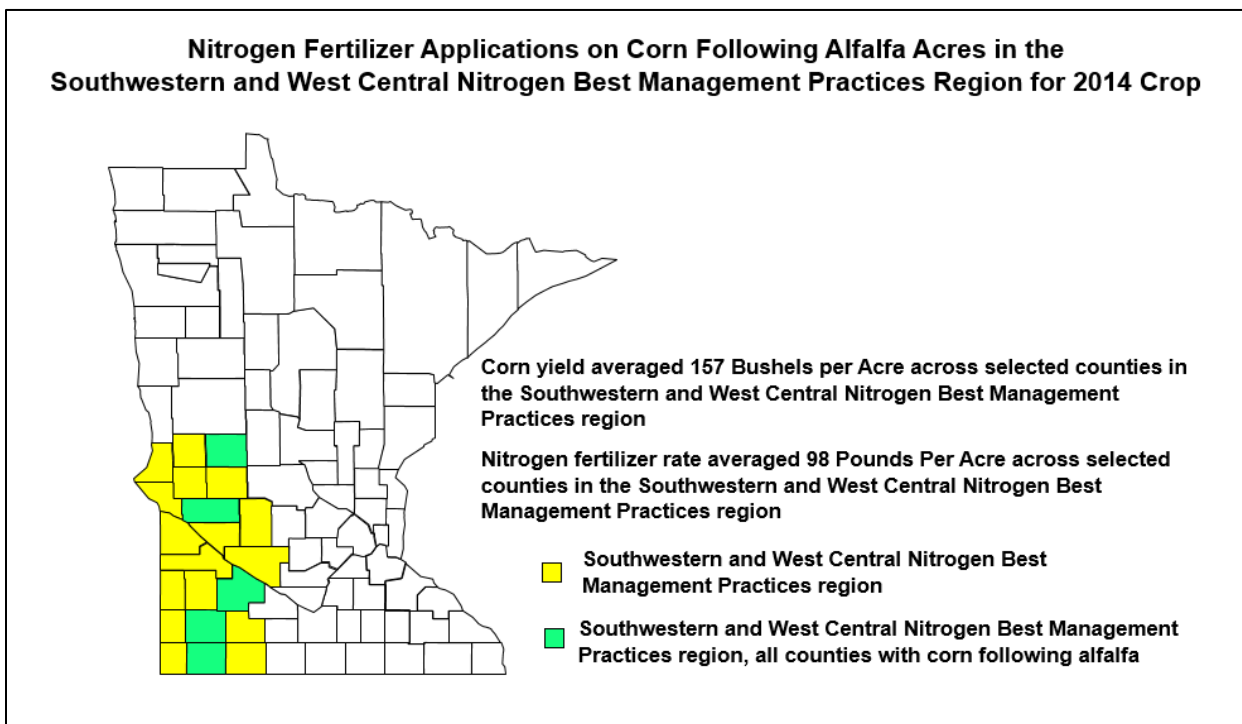


Figure 76. The corn yield averaged 157 bushels per acre and the nitrogen fertilizer rate averaged 98 pounds per acre in the SW BMP region.

Figure 77 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 63 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 77.

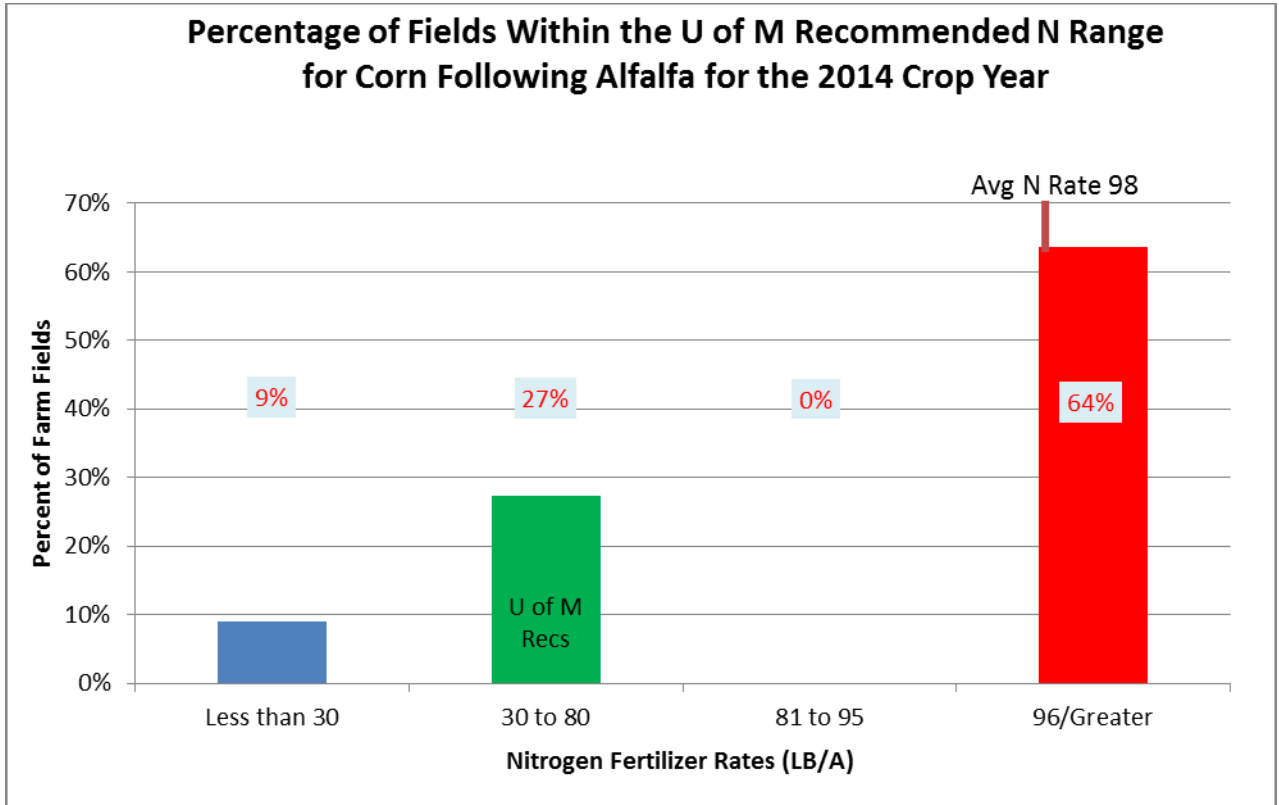


Figure 77. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the SW BMP region for 2014: 11 fields.

Table 63. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	140	142	No Data	166
Avg N Rate LB/A	18	44	No Data	133

Figure 78 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 64 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 78.

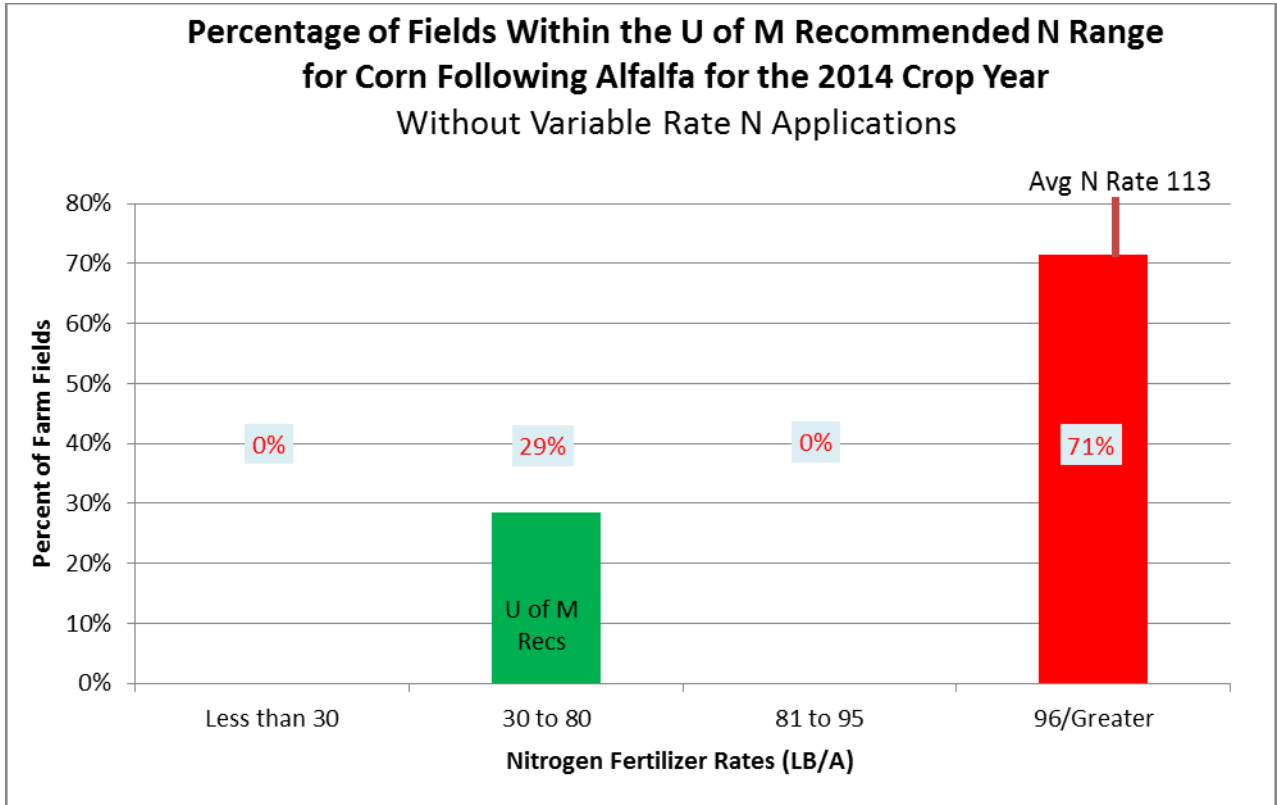


Figure 78. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the SW BMP region for 2014: 7 fields.

Table 64. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2014 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	133	No Data	166
Avg N Rate LB/A	No Data	50	No Data	138

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 79 details the location, average rate of nitrogen fertilizer and average yield for corn following alfalfa in the IRR BMP region.

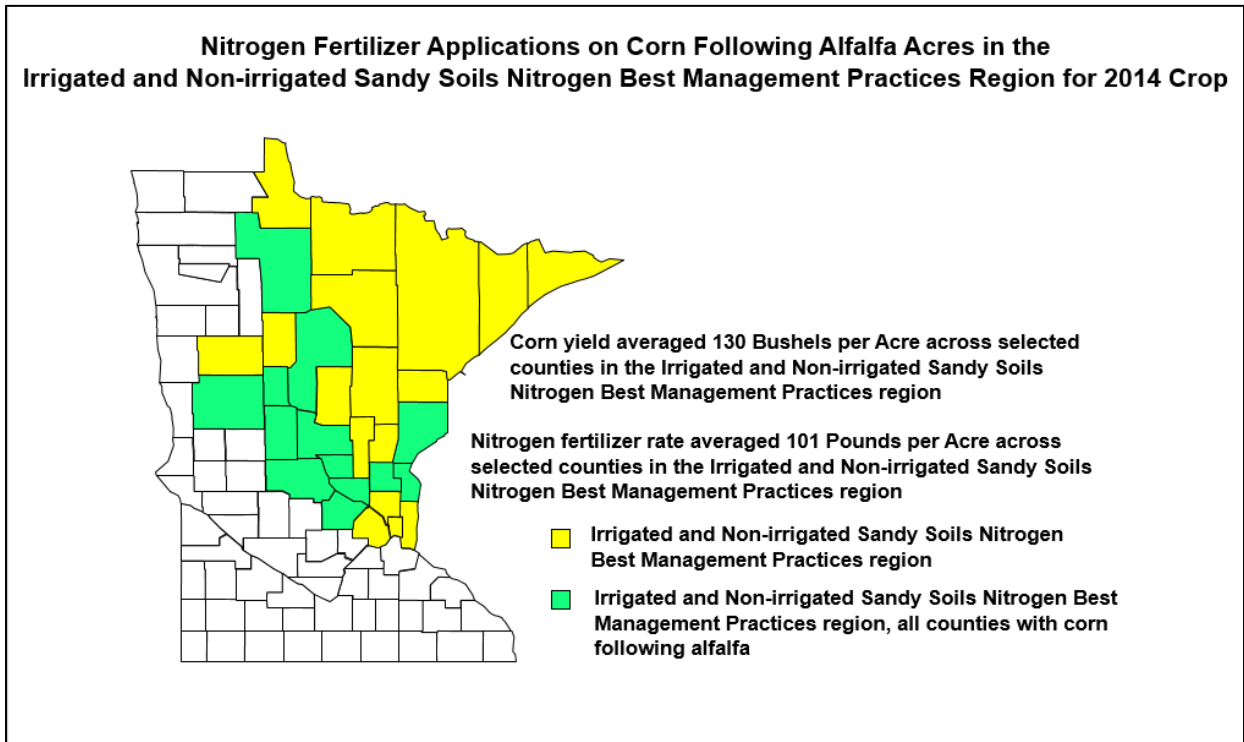


Figure 79. The corn yield averaged 130 bushels per acre and the nitrogen fertilizer rate averaged 101 pounds per acre in the IRR BMP region.

Figure 80 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 65 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 80.

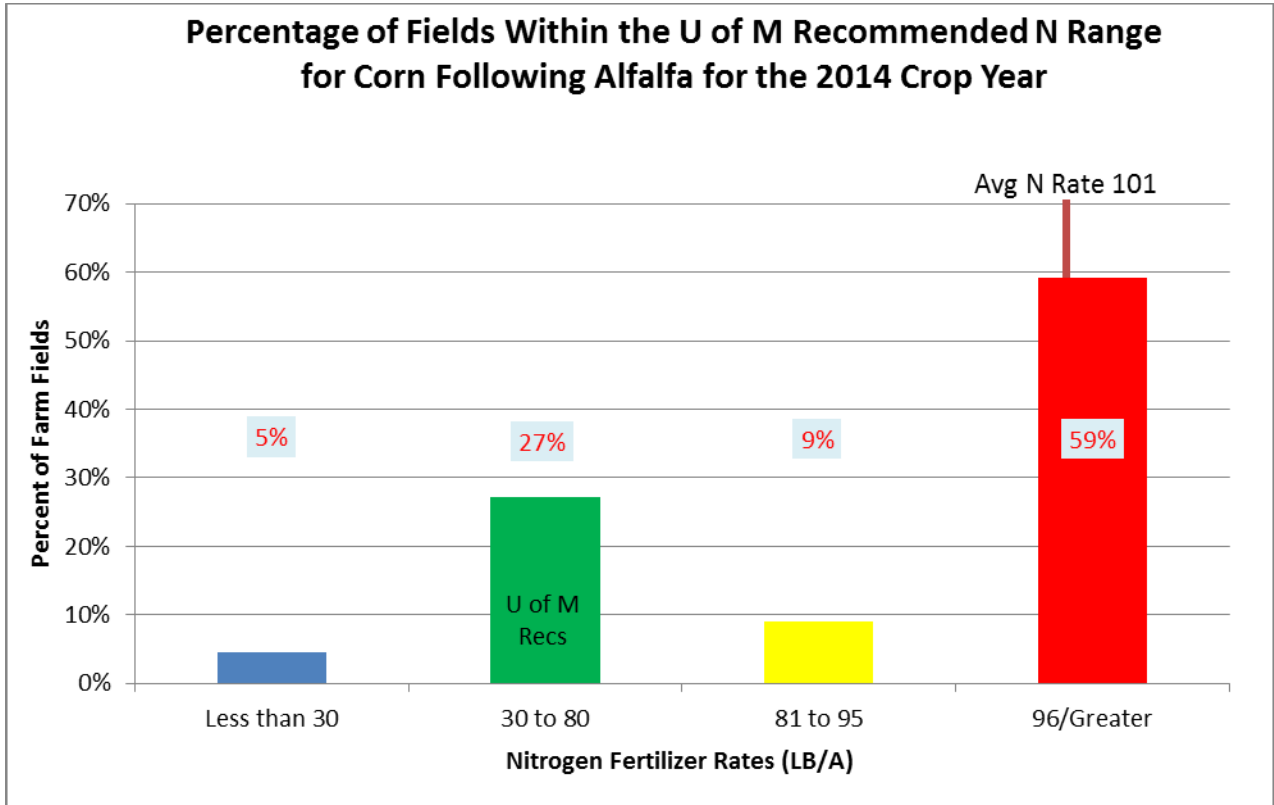


Figure 80. Percentage of fields within the U of M recommended N range for corn following alfalfa with and without variable rate applications of nitrogen in the IRR BMP region for 2014: 22 fields.

Table 65. Nitrogen fertilizer rates and associated yields for corn following alfalfa with and without variable rate nitrogen applications for the 2014 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	110	108	160	137
Avg N Rate LB/A	18	58	90	129

Figure 81 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 66 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 81.

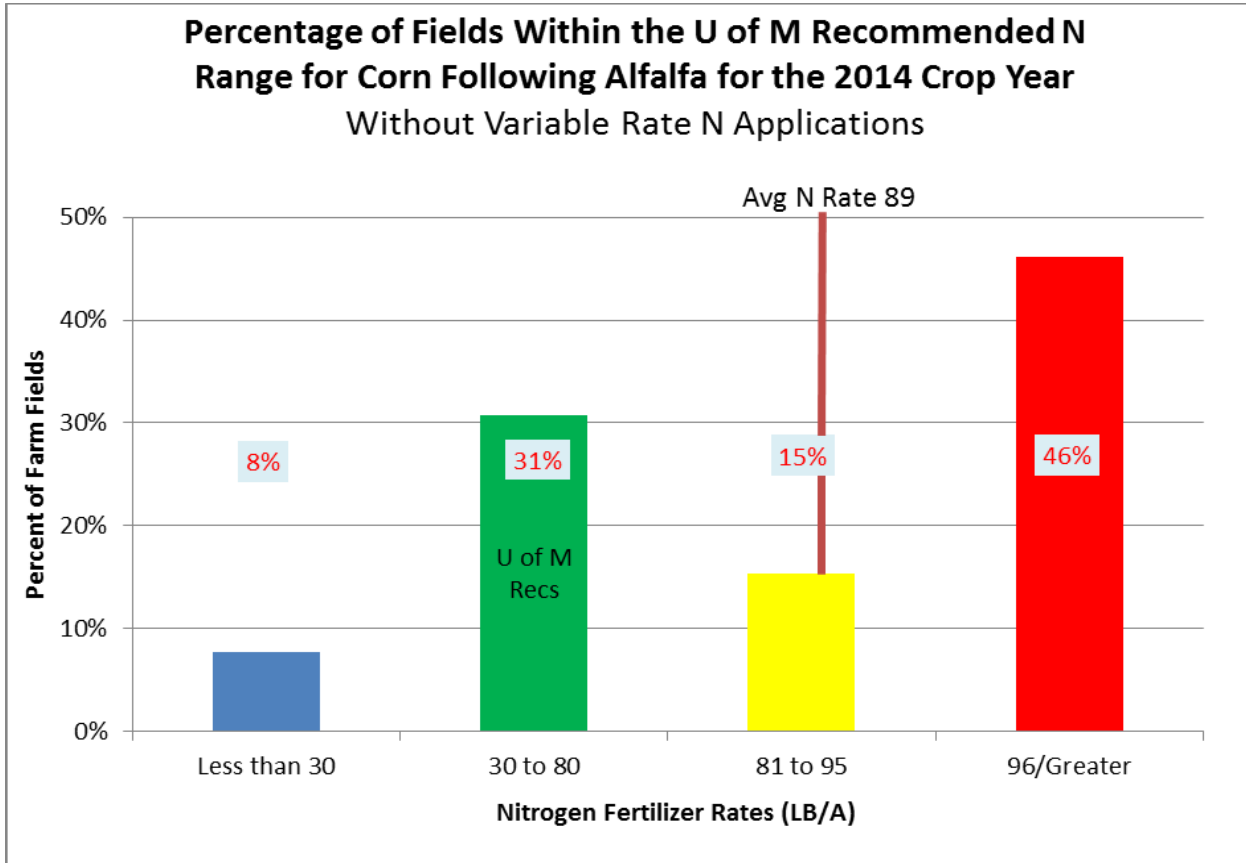


Figure 81. Percentage of fields within the U of M recommended N range for corn following alfalfa without variable rate applications of nitrogen in the IRR BMP region for 2014: 13 fields.

Table 66. Nitrogen fertilizer rates and associated yields for corn following alfalfa without variable rate nitrogen applications for the 2014 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	110	110	160	143
Avg N Rate LB/A	18	56	90	123

Figure 82 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 67 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 82.

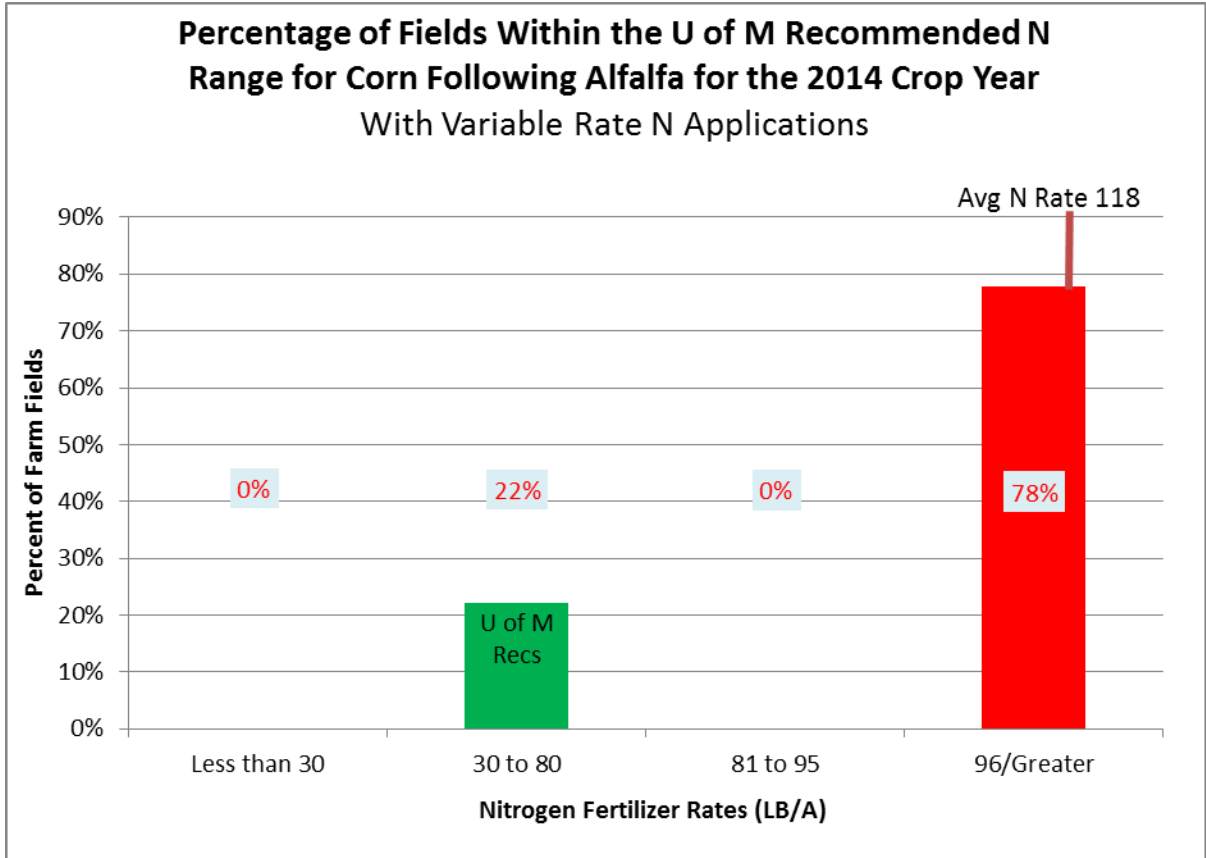


Figure 82. Percentage of fields within the U of M recommended N range for corn following alfalfa with variable rate applications of nitrogen in the IRR BMP region for 2014: 9 fields.

Table 67. Nitrogen fertilizer rates and associated yields for corn following alfalfa with variable rate nitrogen applications for the 2014 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	105	No Data	131
Avg N Rate LB/A	No Data	63	No Data	134

Statewide: Corn Following Small Grains

Statewide, two percent of the fields reported corn following small grains (Figure 83). There were 38 fields surveyed in Minnesota.

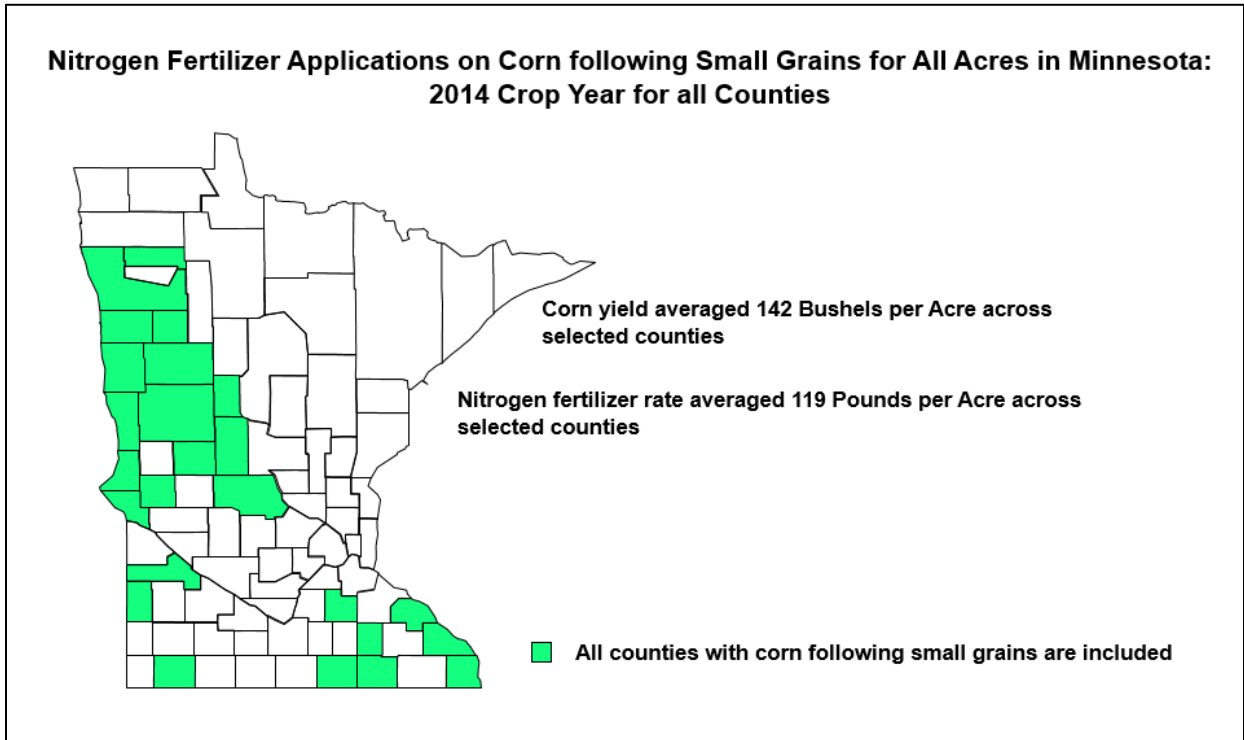


Figure 83. The corn yield averaged 142 bushels per acre and the nitrogen fertilizer rate averaged 119 pounds per acre on fields with corn following small grains in Minnesota.

Figure 84 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 68 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 84.

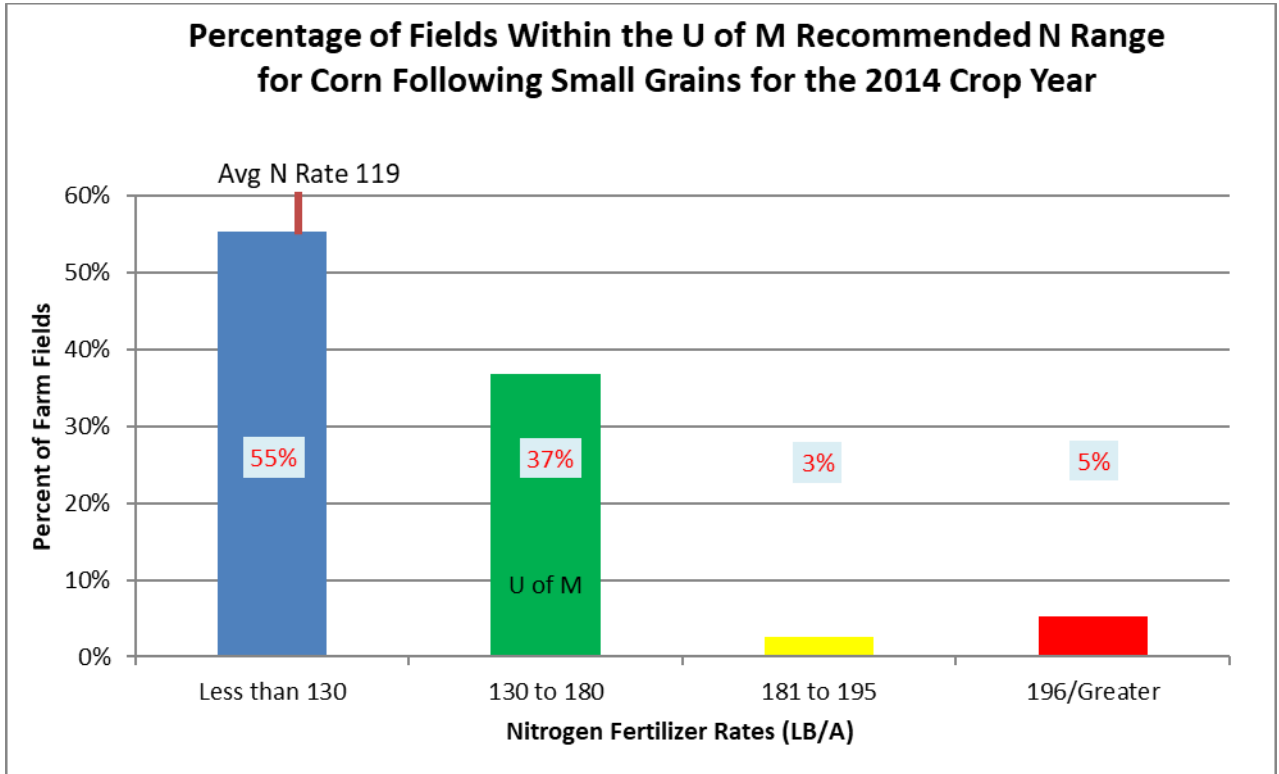


Figure 84. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in Minnesota for 2014: 38 fields.

Table 68. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2014 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	128	152	175	197
Avg N Rate LB/A	84	153	185	213

Figure 85 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 69 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 85.

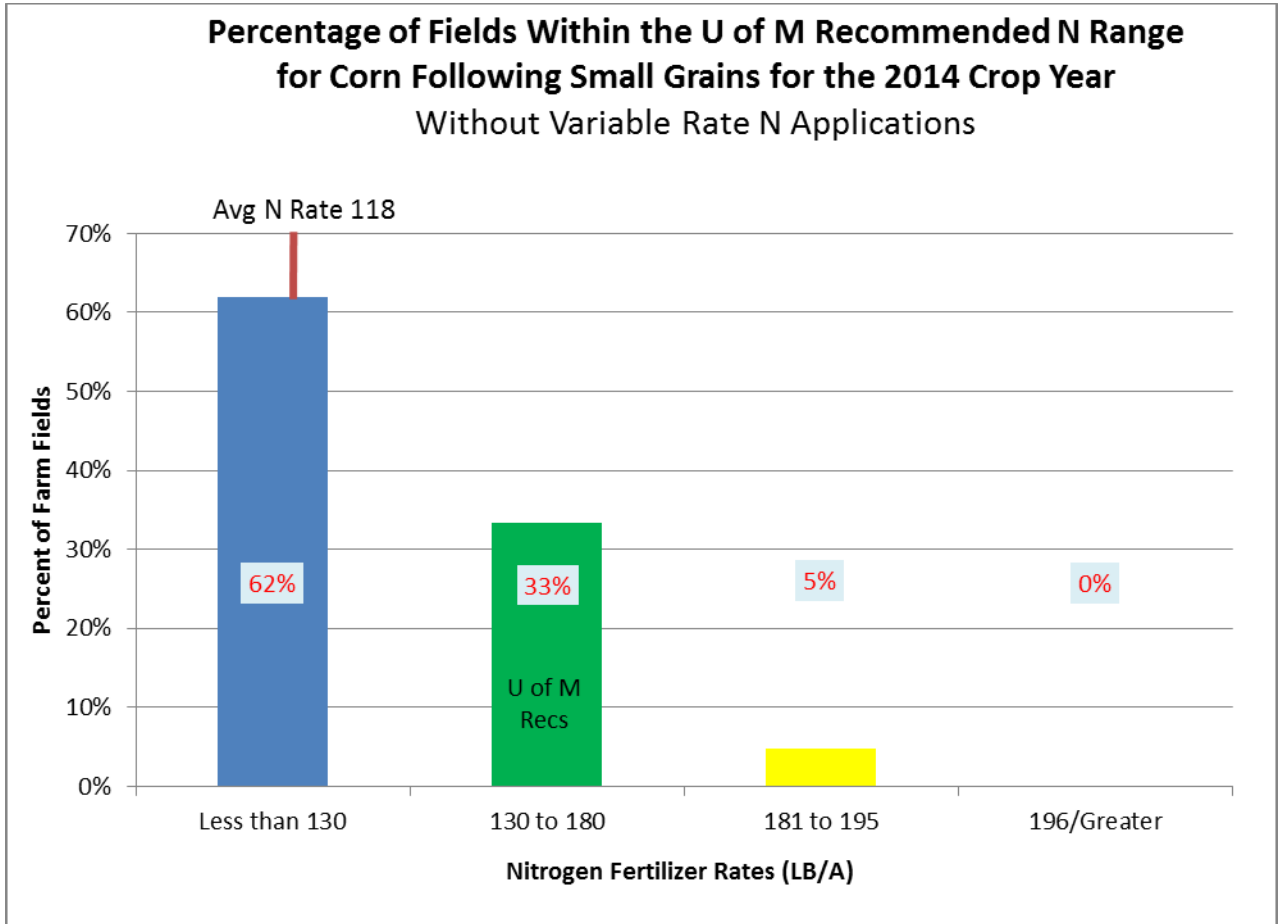


Figure 85. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in Minnesota for 2014: 21 fields.

Table 69. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2014 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	146	175	No Data
Avg N Rate LB/A	93	154	185	No Data

Figure 86 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 70 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 86.

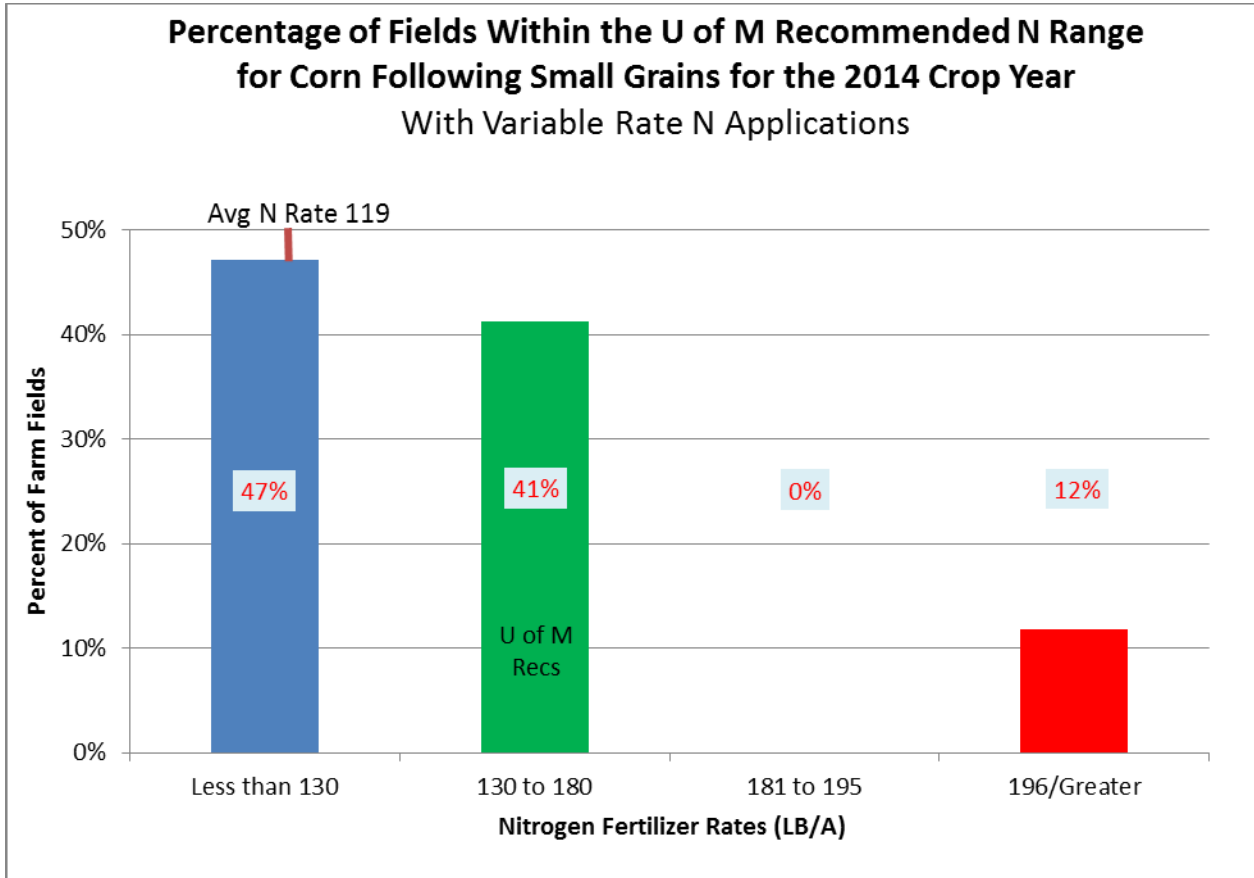


Figure 86. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in Minnesota for 2014: 17 fields.

Table 70. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2014 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	134	158	No Data	197
Avg N Rate LB/A	68	151	No Data	213

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

There were 5 fields that were included in the SC BMP region corn following small grains analysis. Figure 87 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the SC BMP region.

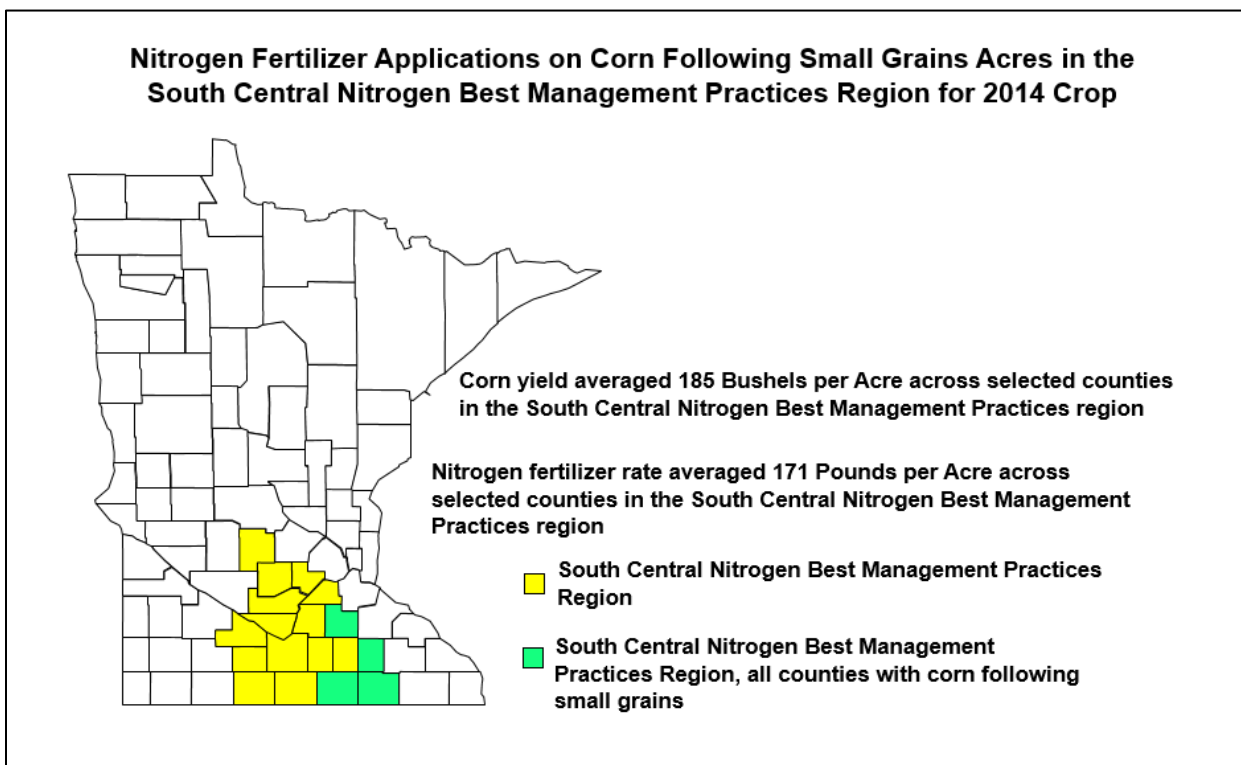


Figure 87. The corn yield averaged 185 bushels per acre and the nitrogen fertilizer rate averaged 171 pounds per acre in the SC BMP region.

Figure 88 details the distribution of nitrogen fertilizer rates in the SC 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 71 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 88.

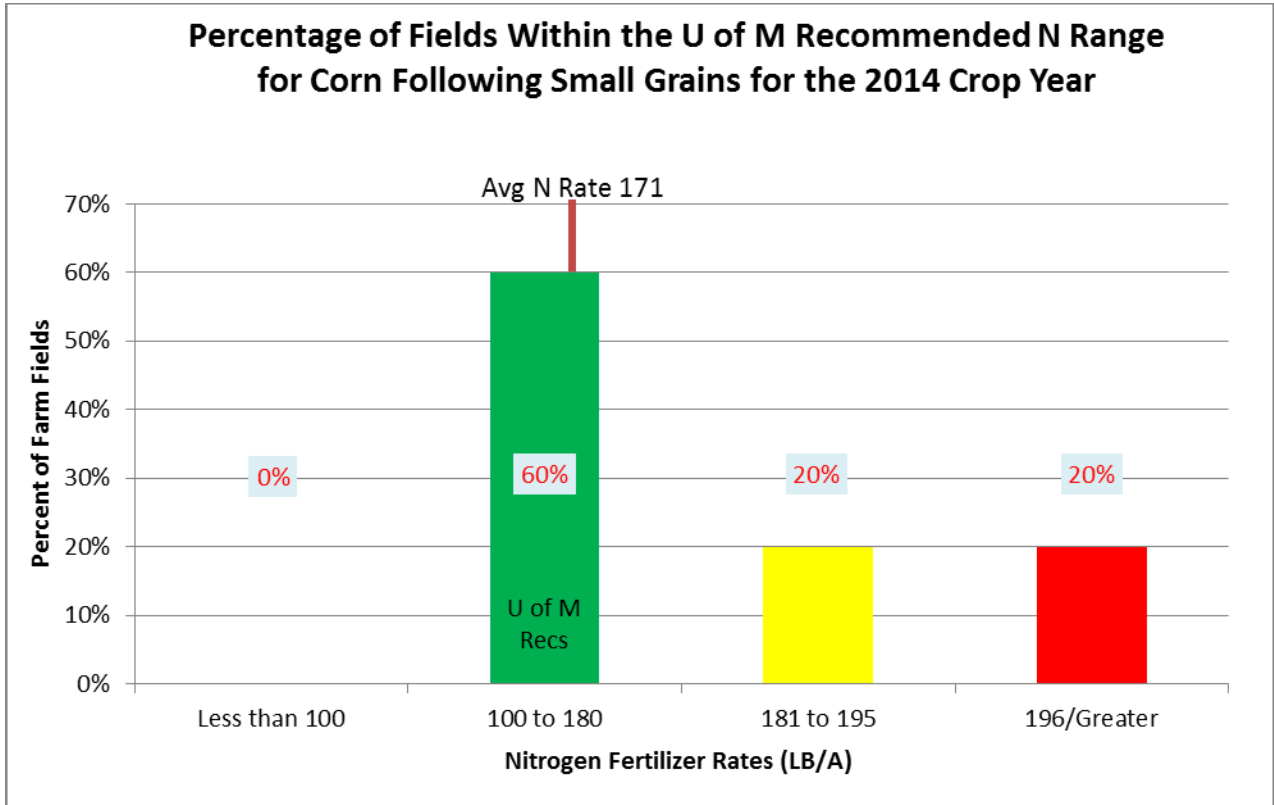


Figure 88. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the SC BMP region for 2014: 5 fields.

Table 71. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2014 crop year in the SC BMP region.

N Fertilizer Ranges	<100 LB/A	100-180 LB/A	181-195 LB/A	196/Greater LB/A
Avg Bu./Acre	No Data	182	175	203
Avg N Rate LB/A	No Data	148	185	225

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

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

Southwestern and West Central Region: Corn Following Small Grains

There were 8 fields that were included in the SW BMP region corn following small grains analysis. Figure 89 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the SW BMP region.

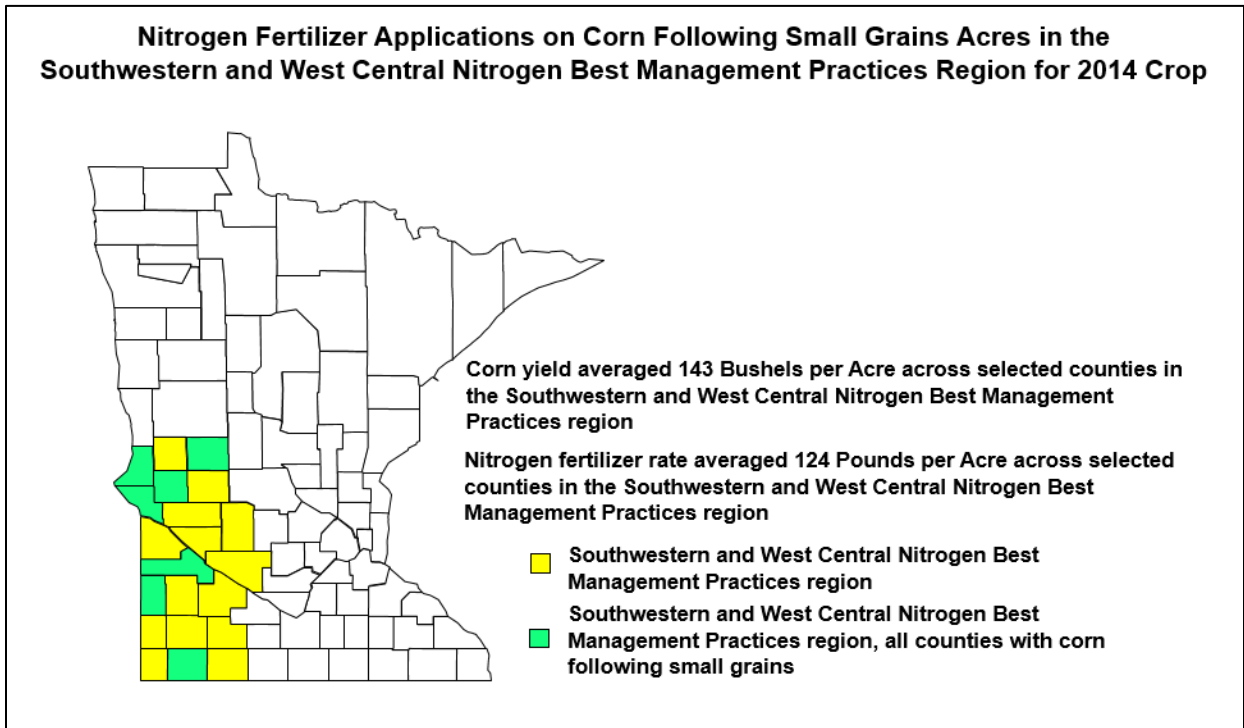


Figure 89. The corn yield averaged 143 bushels per acre and the nitrogen fertilizer rate averaged 124 pounds per acre in the SW BMP region.

Figure 90 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 72 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 90.

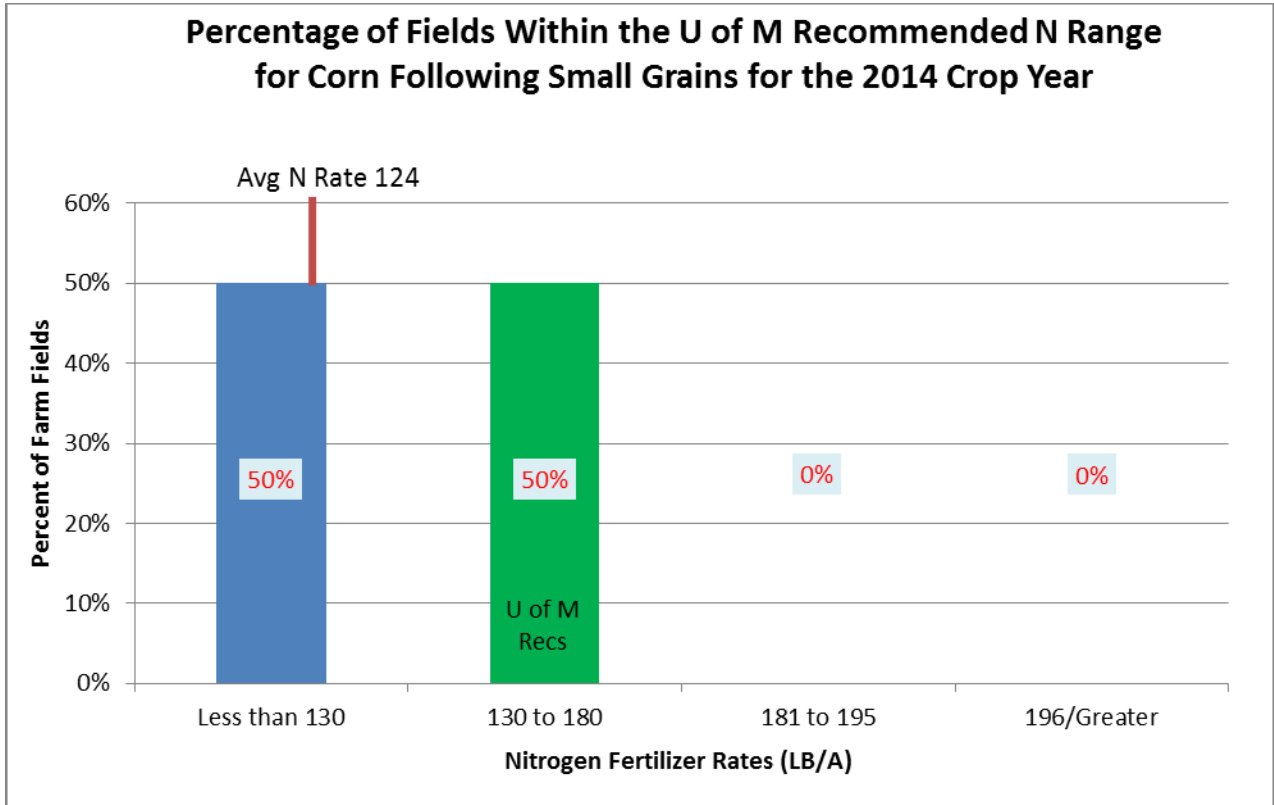


Figure 90. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the SW BMP region for 2014: 8 fields.

Table 72. Nitrogen fertilizer rates and associated corn yields for corn following small grains with and without variable rate nitrogen applications for the 2014 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	119	166	No Data	No Data
Avg N Rate LB/A	95	154	No Data	No Data

Figure 91 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following small grains without 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 91.

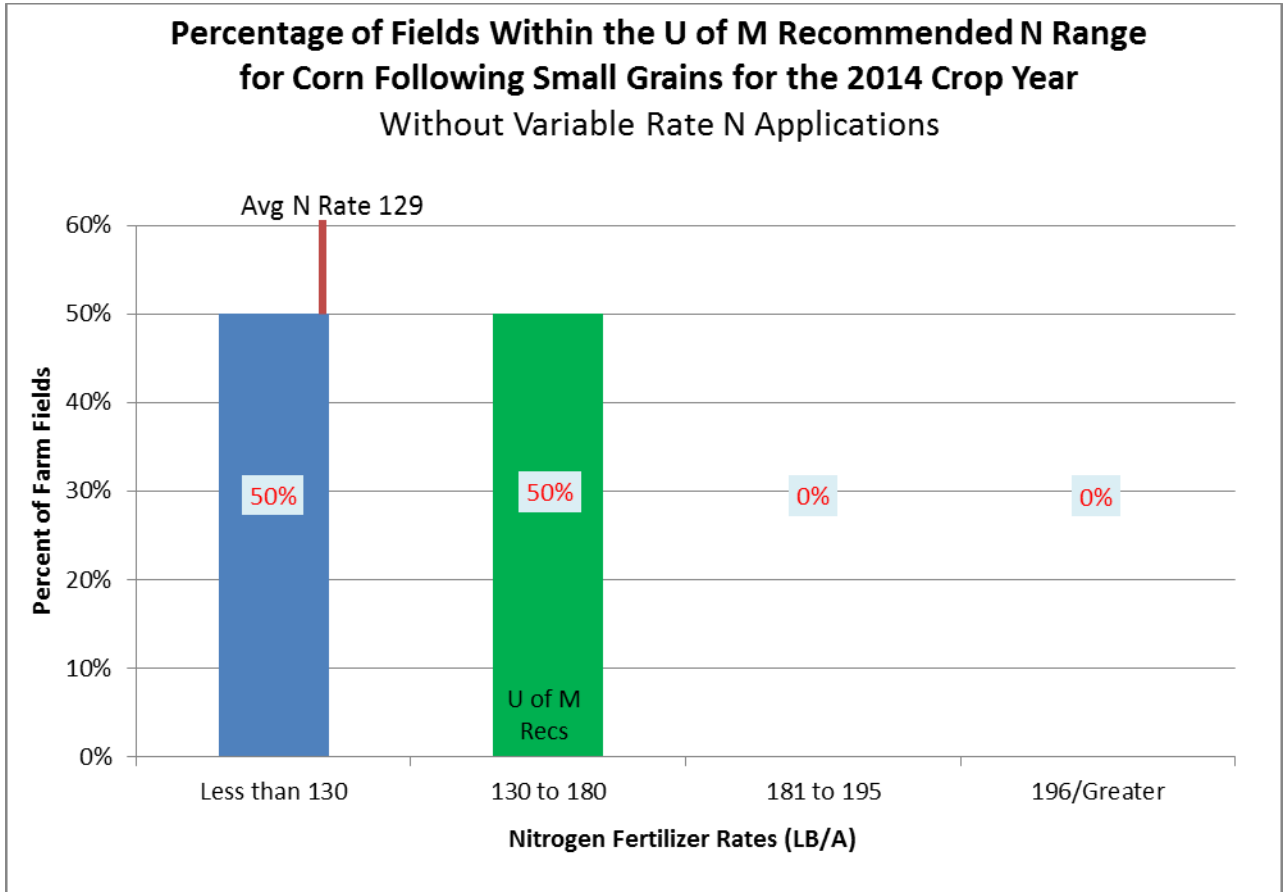


Figure 91. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the SW BMP region for 2014: 6 fields.

Table 73. Nitrogen fertilizer rates and associated corn yields for corn following small grains without variable rate nitrogen applications for the 2014 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	120	162	No Data	No Data
Avg N Rate LB/A	100	158	No Data	No Data

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

Northwestern Region: Corn Following Small Grains

There were 11 fields that were included in the NW BMP region corn following small grains analysis. Figure 92 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the NW BMP region.

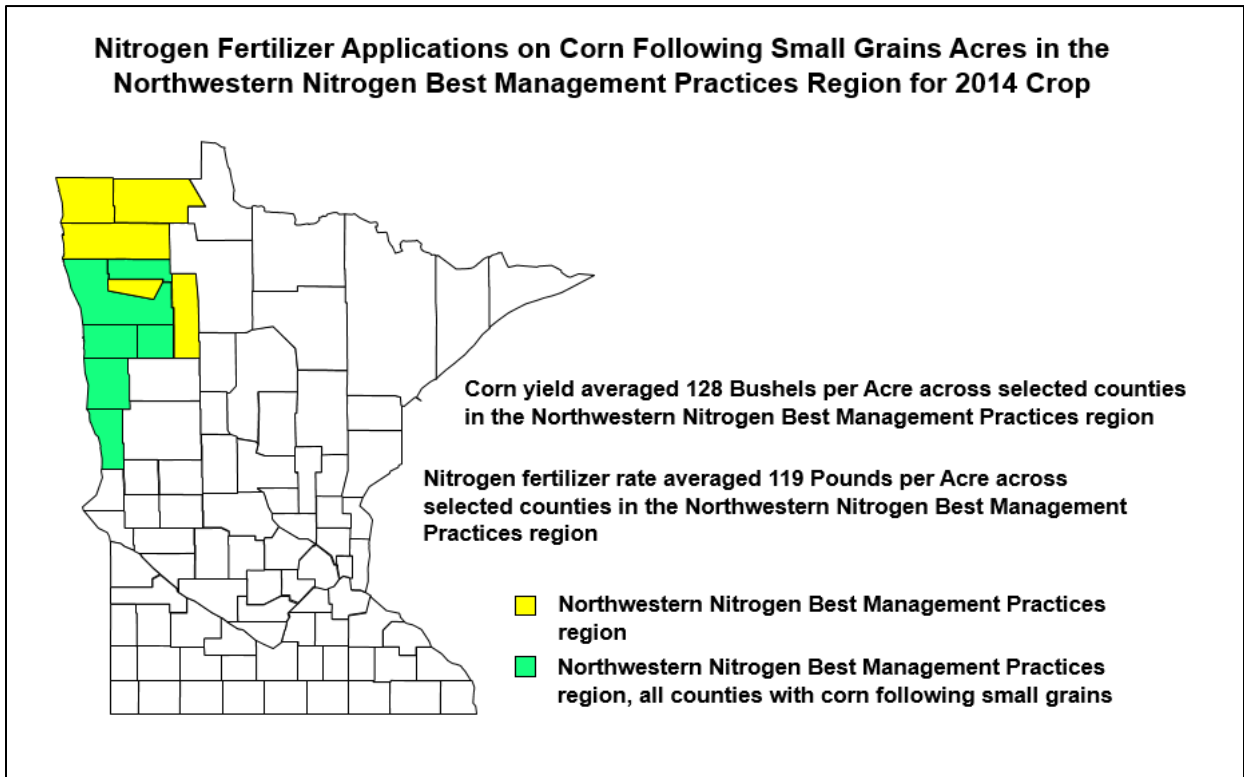


Figure 92. The corn yield averaged 128 bushels per acre and the nitrogen fertilizer rate averaged 119 pounds per acre in the NW BMP region.

Figure 93 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 74 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 93.

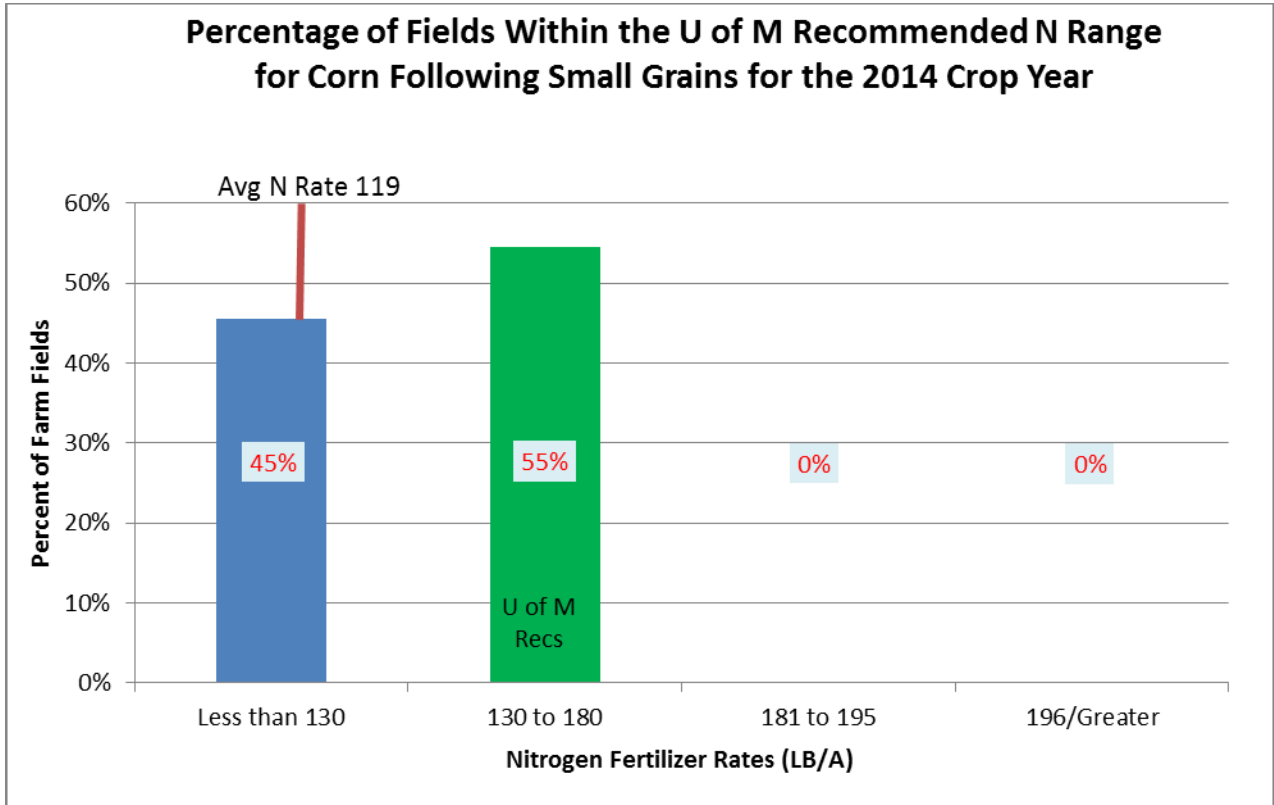


Figure 93. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the NW BMP region for 2014: 11 fields.

Table 74. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2014 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	126	131	No Data	No Data
Avg N Rate LB/A	75	155	No Data	No Data

Less than five farmers reported planting corn following small grains in the NW BMP region for fields without variable rate applications of nitrogen.

Figure 94 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 75 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 94.

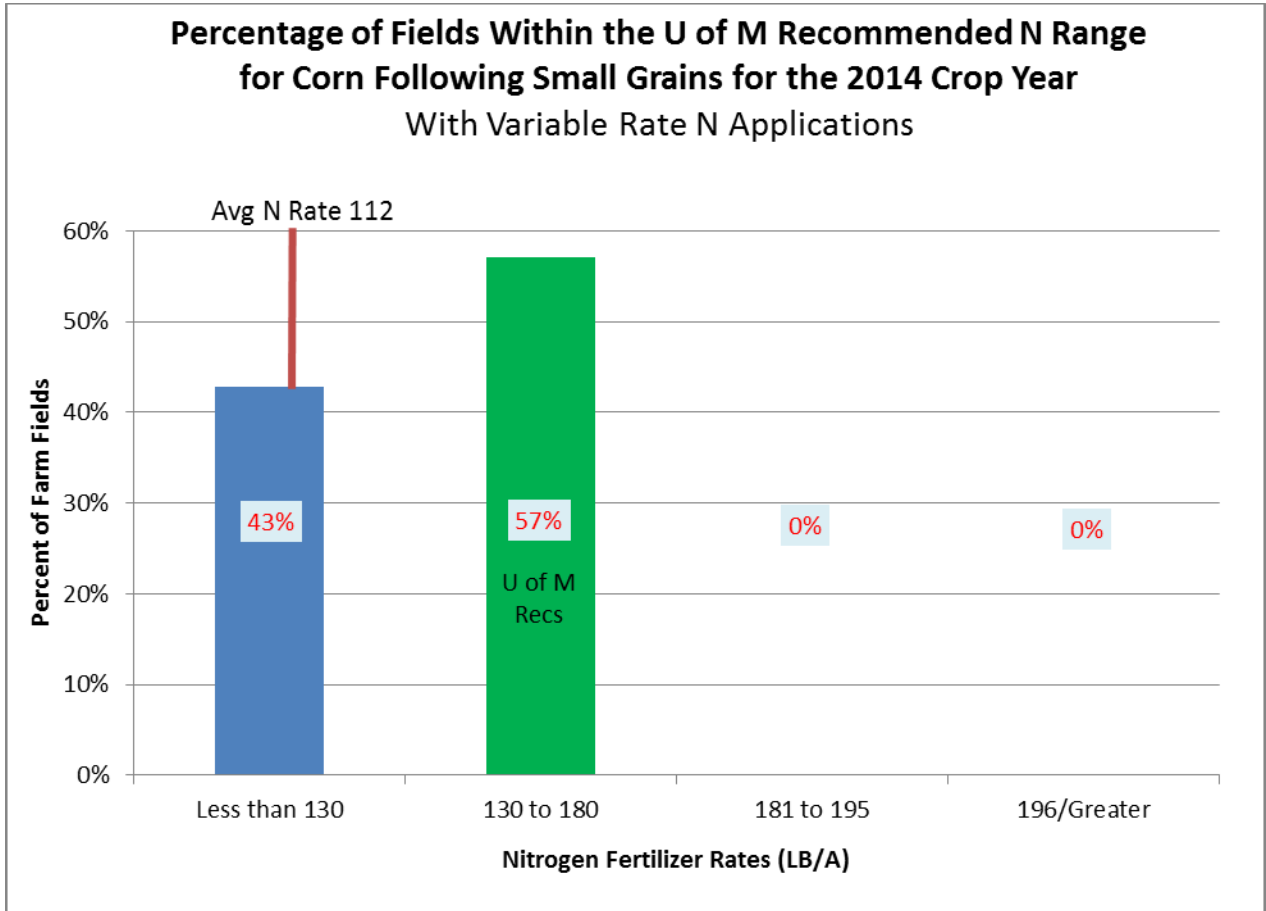


Figure 94. Percentage of fields within the U of M recommended N range for corn following small grains with variable rate applications of nitrogen in the NW BMP region for 2014: 7 fields.

Table 75. Nitrogen fertilizer rates and associated yields for corn following small grains with variable rate nitrogen applications for the 2014 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	138	141	No Data	No Data
Avg N Rate LB/A	53	156	No Data	No Data

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

There were 11 fields that were included in the IRR BMP region corn following small grains analysis. Figure 95 details the location, average rate of nitrogen fertilizer and average yield for corn following small grains in the IRR BMP region.

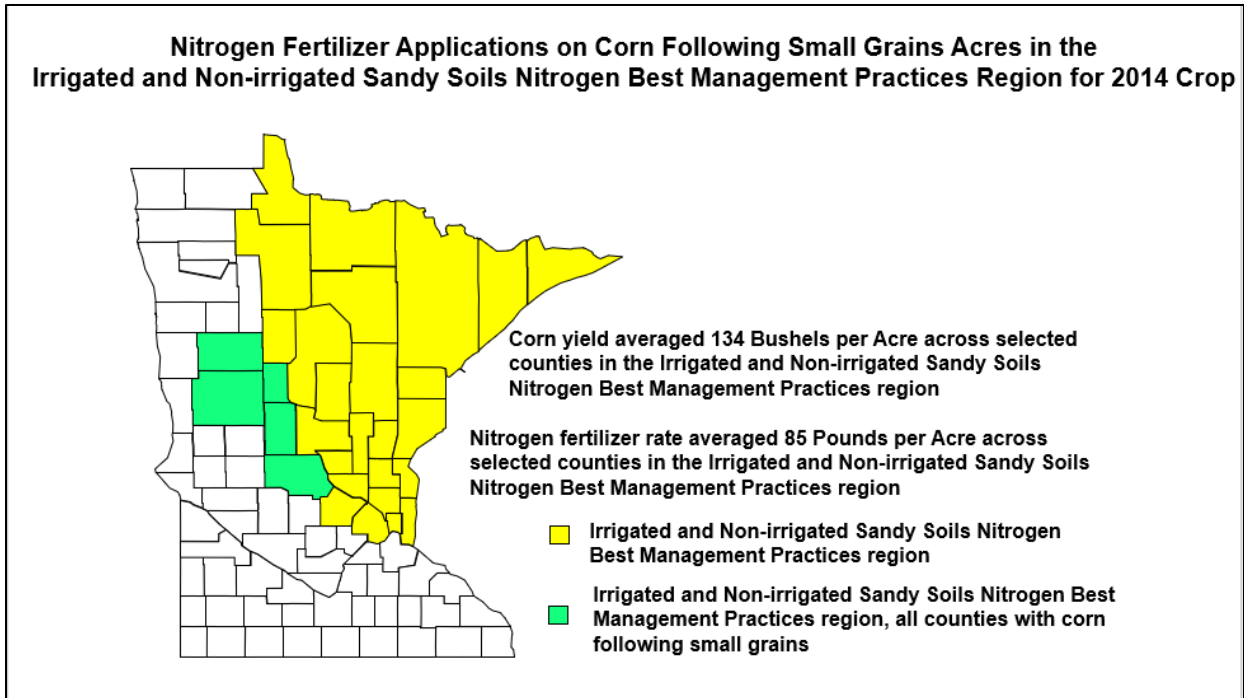


Figure 95. The corn yield averaged 121 bushels per acre and the nitrogen fertilizer rate averaged 85 pounds per acre in the IRR BMP region.

Figure 96 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 76 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 98.

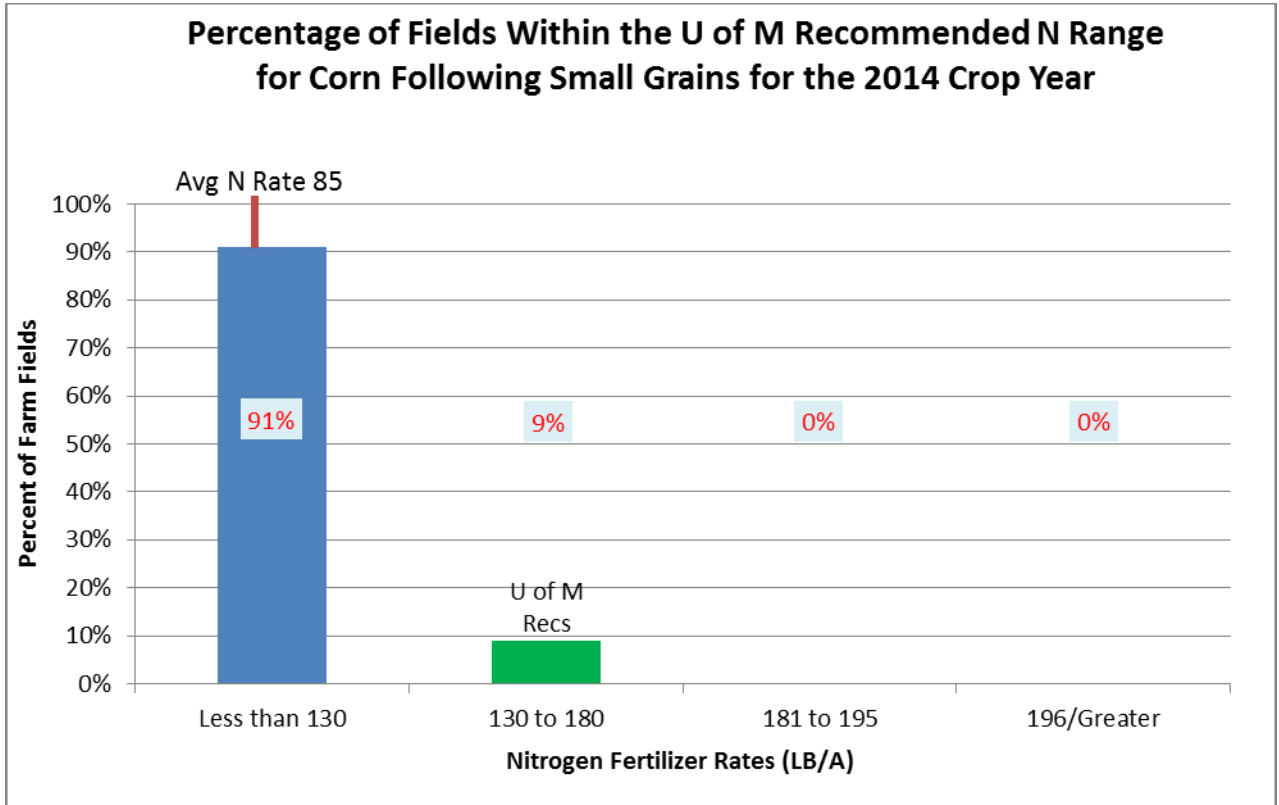


Figure 96. Percentage of fields within the U of M recommended N range for corn following small grains with and without variable rate applications of nitrogen in the IRR BMP region for 2014: 11 fields.

Table 76. Nitrogen fertilizer rates and associated yields for corn following small grains with and without variable rate nitrogen applications for the 2014 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	134	135	No Data	No Data
Avg N Rate LB/A	78	150	No Data	No Data

Figure 97 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 77 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 97.

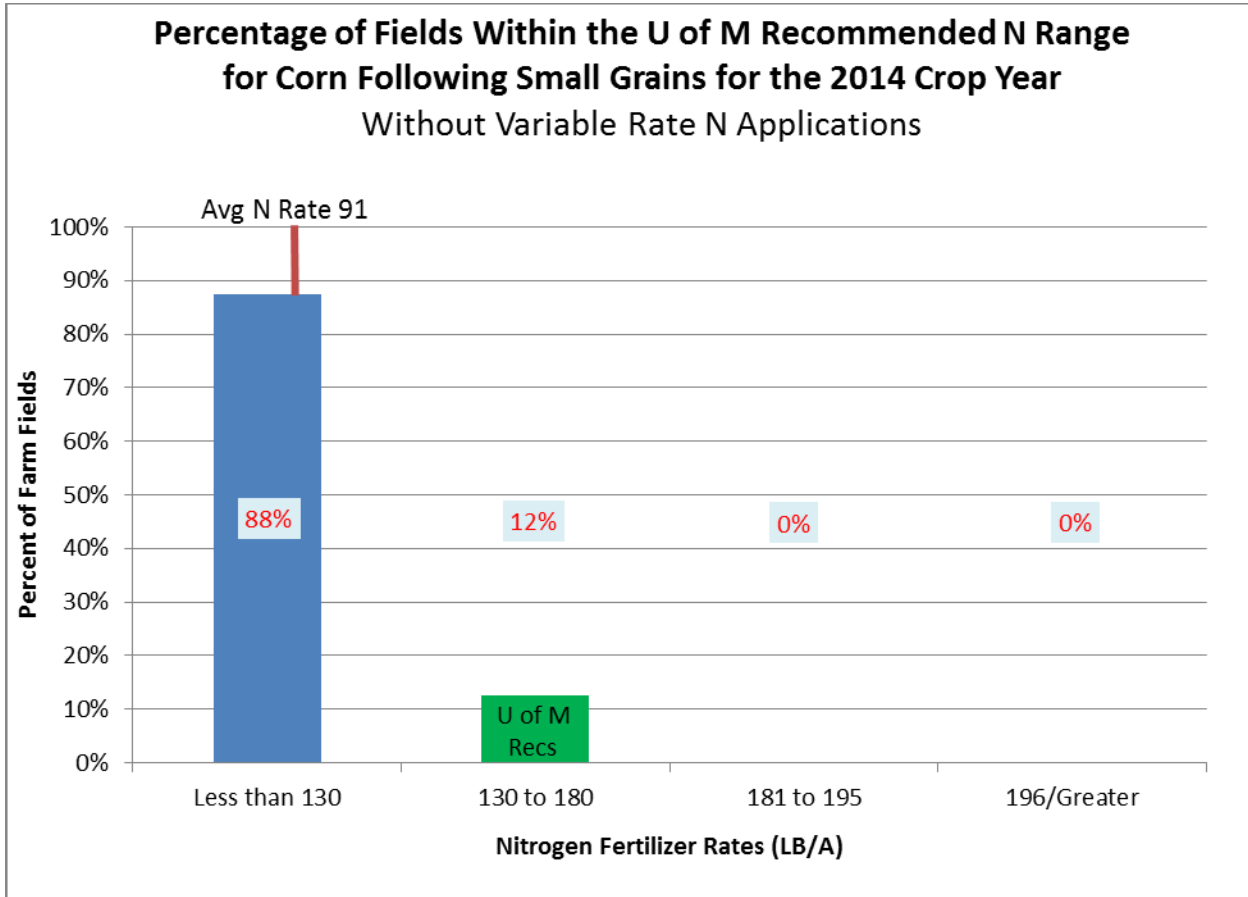


Figure 97. Percentage of fields within the U of M recommended N range for corn following small grains without variable rate applications of nitrogen in the IRR BMP region for 2014: 8 fields.

Table 77. Nitrogen fertilizer rates and associated yields for corn following small grains without variable rate nitrogen applications for the 2014 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	130	135	No Data	No Data
Avg N Rate LB/A	82	150	No Data	No Data

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

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 2014 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 98 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 78 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 98.

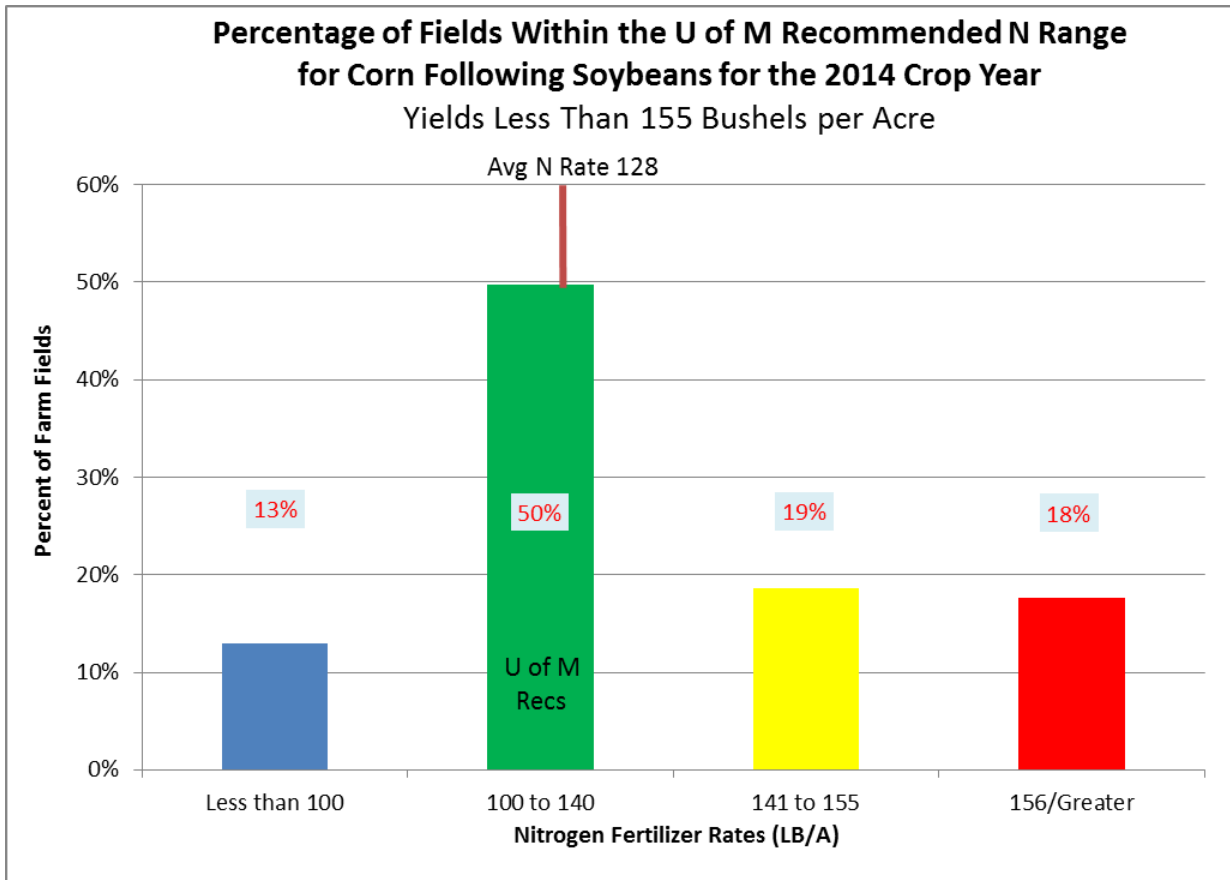


Figure 98. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in Minnesota for 2014: 318 fields.

Table 78. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2014 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	133	138	141
Avg N Rate LB/A	76	121	149	168

Figure 99 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 79 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 99.

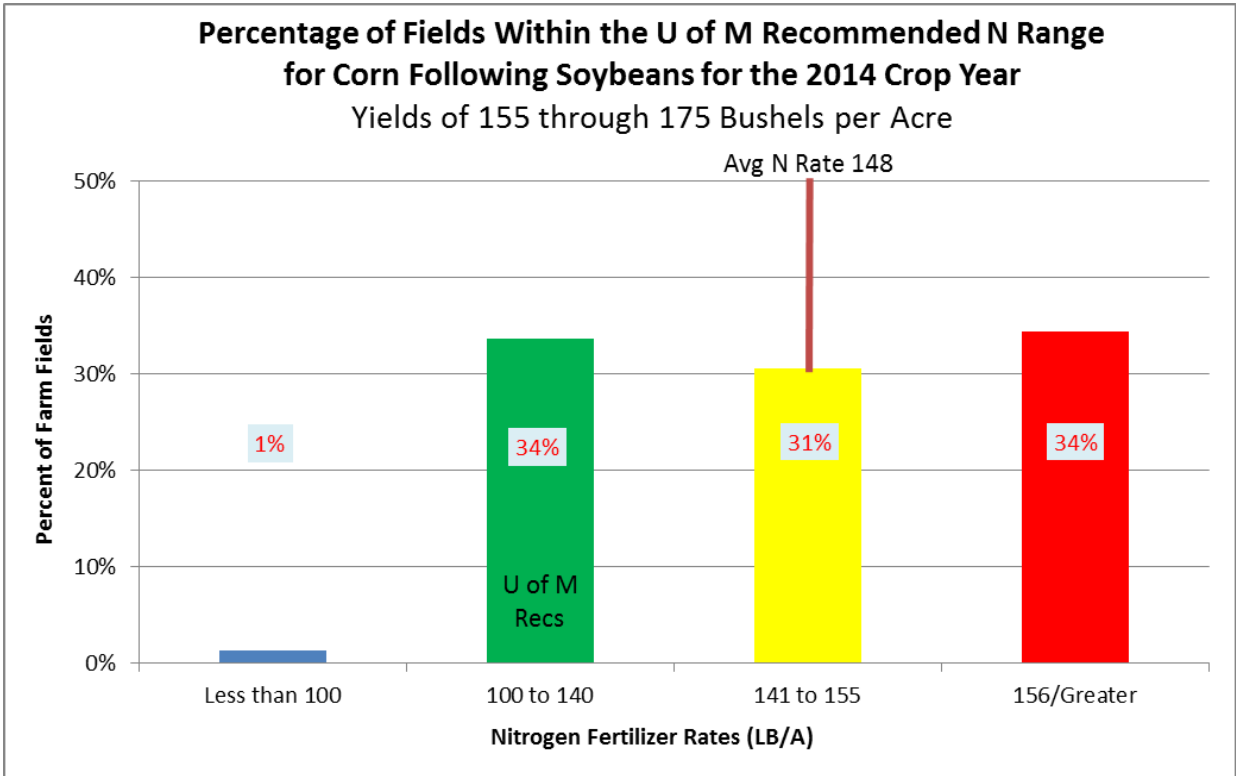


Figure 99. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in Minnesota for 2014: 386 fields.

Table 79. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2014 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	166	166	167	168
Avg N Rate LB/A	80	130	149	168

Figure 100 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 80 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 100.

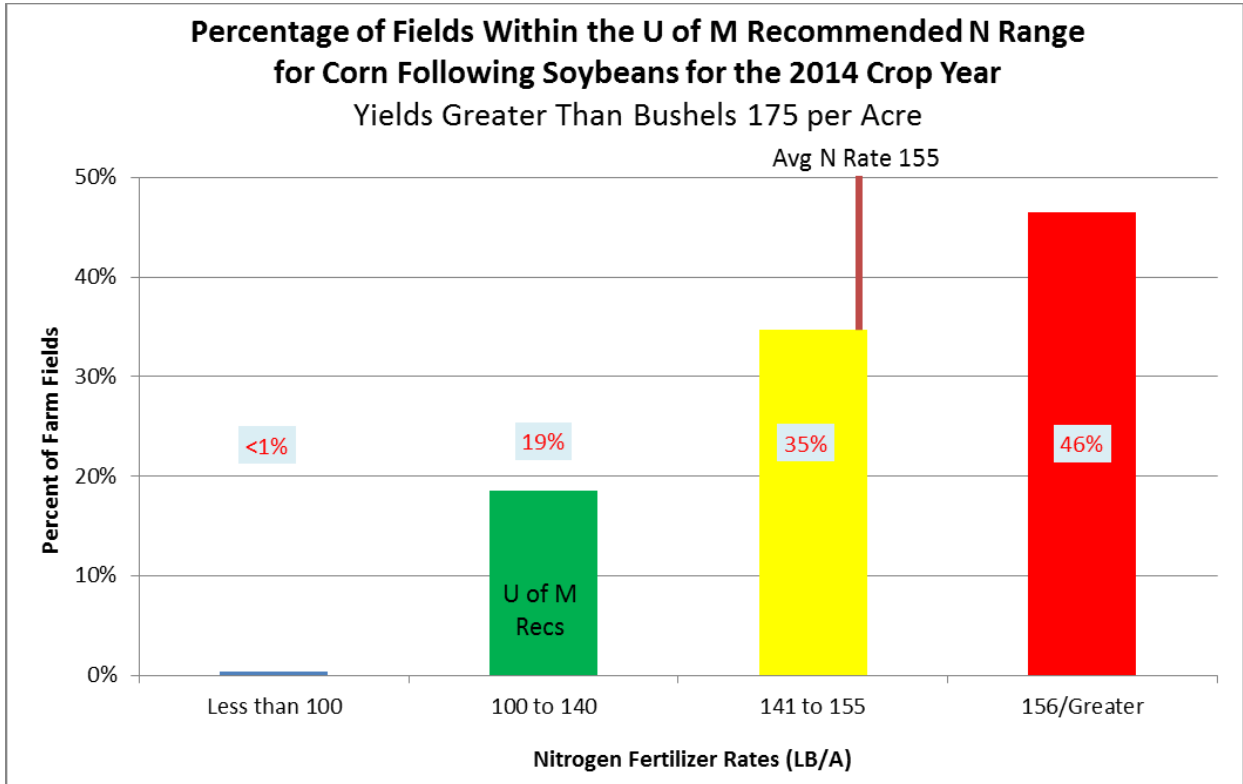


Figure 100. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in Minnesota for 2014: 297 fields.

Table 80. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields greater than 175 bushels per acre for the 2014 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	190	185	187	188
Avg N Rate LB/A	95	131	150	170

Southeastern Region: Corn Following Soybeans

Figure 101 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 81 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 101.

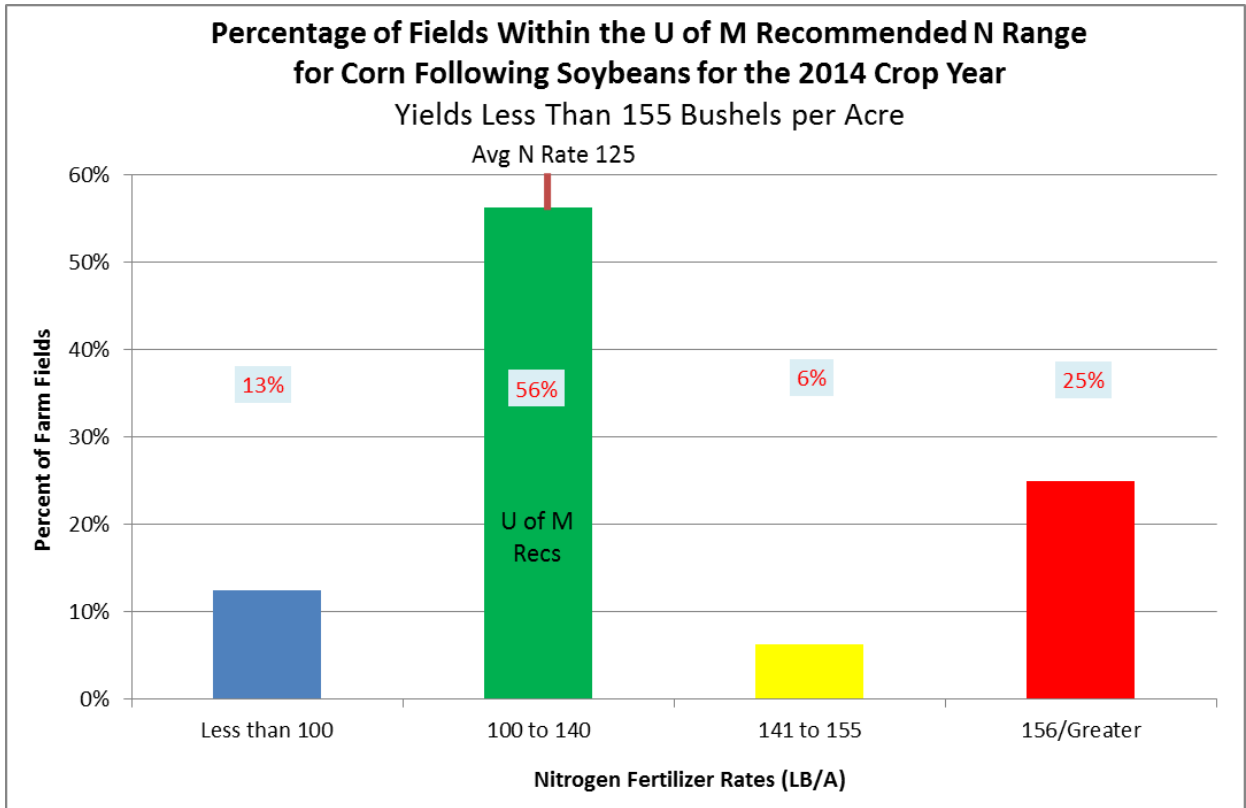


Figure 101. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SE BMP region for 2014: 16 fields.

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 2014 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	139	144	150	131
Avg N Rate LB/A	82	114	150	163

Figure 102 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 82 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 102.

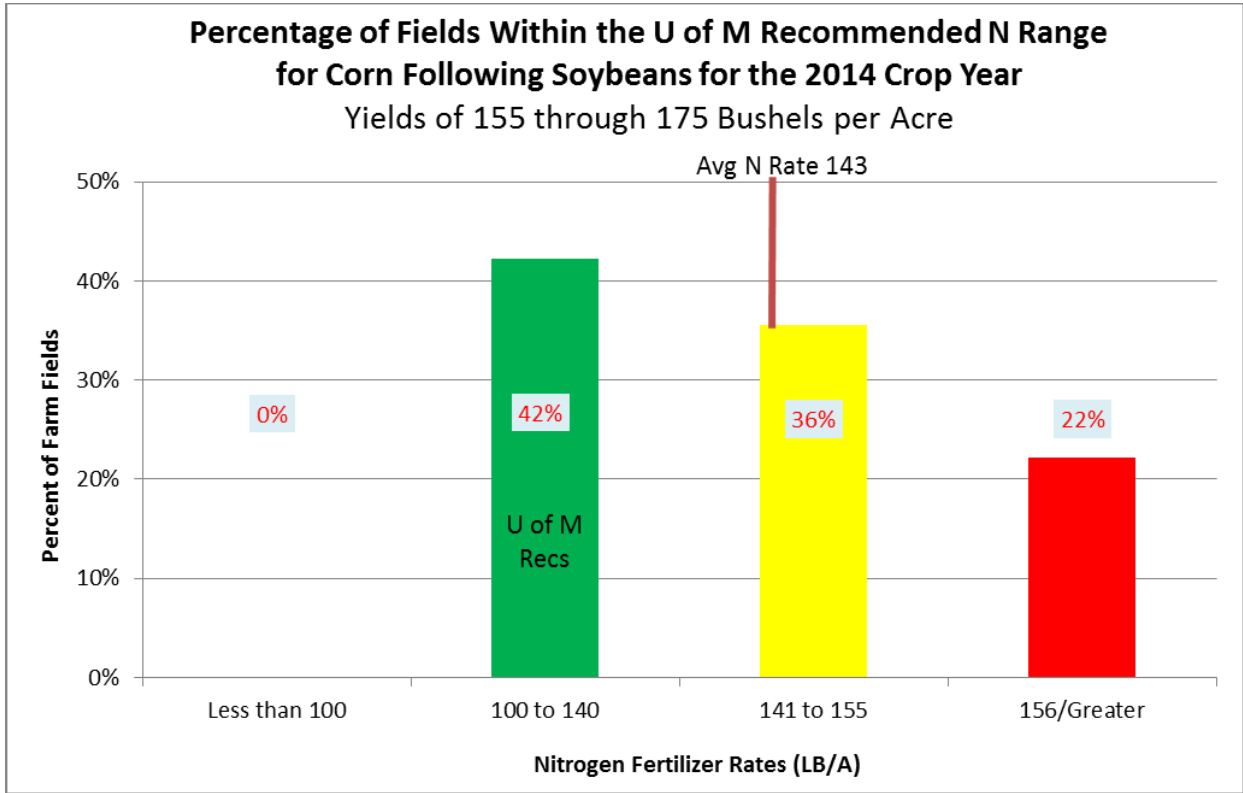


Figure 102. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SE BMP region for 2014: 45 fields.

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 2014 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	163	170	169
Avg N Rate LB/A	No Data	123	150	169

Figure 103 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 83 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 103.

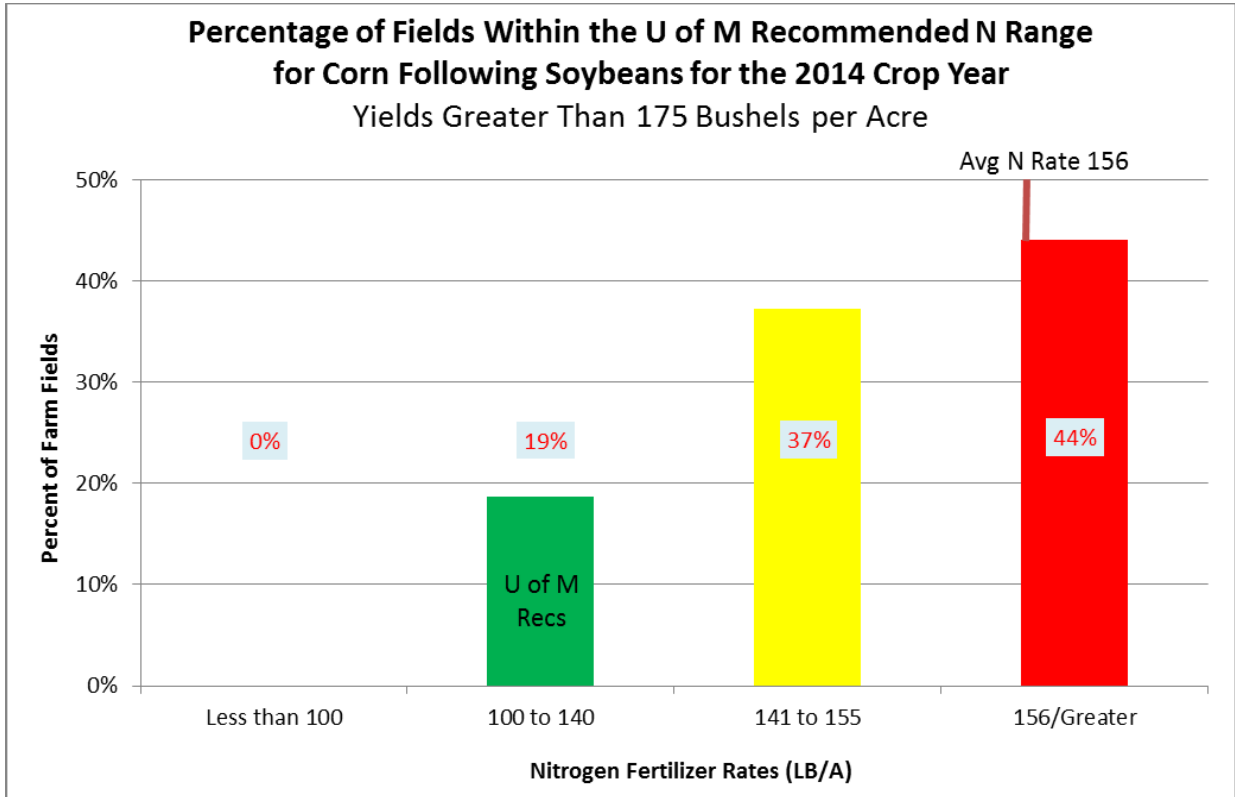


Figure 103. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SE BMP region for 2014: 59 fields.

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 2014 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	189	188	192
Avg N Rate LB/A	No Data	129	150	172

South Central Region: Corn Following Soybeans

Figure 104 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 84 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 104.

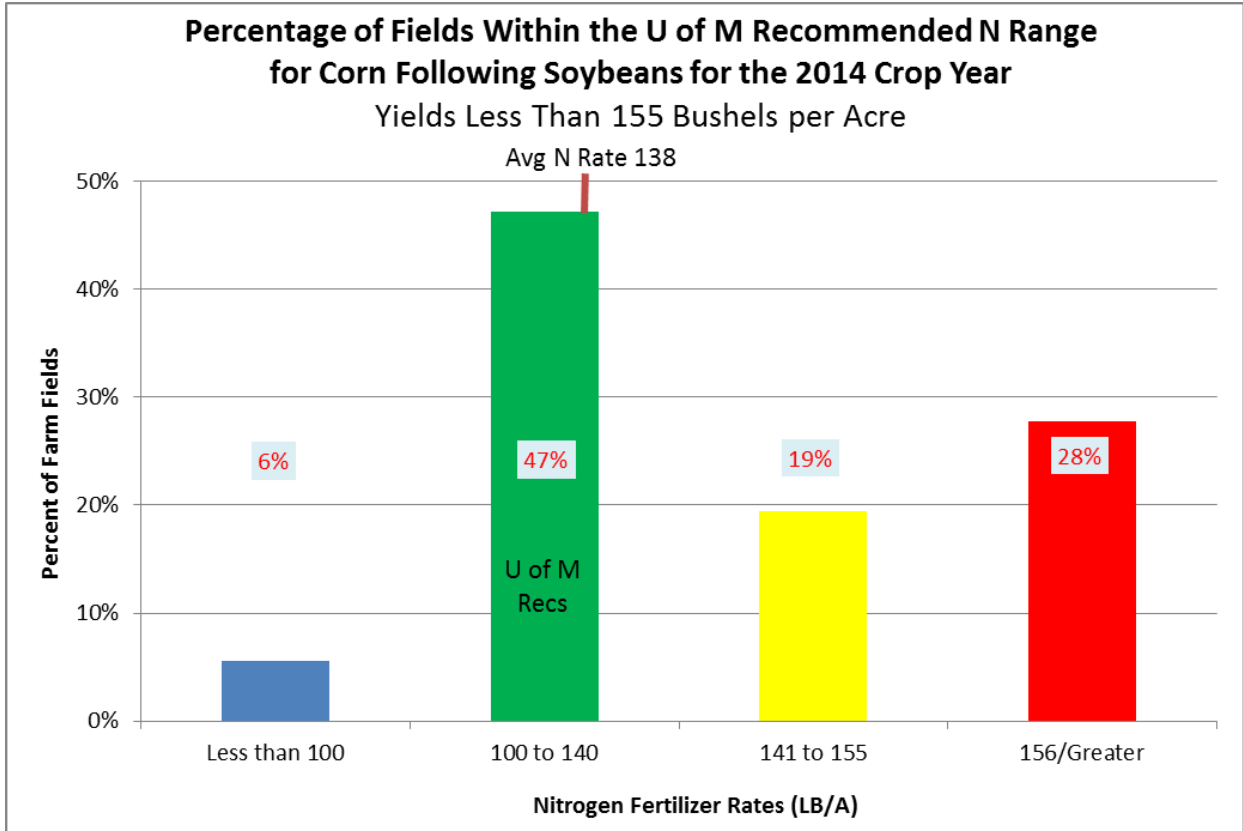


Figure 104. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SC BMP region for 2014: 72 fields.

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 2014 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	130	137	135	143
Avg N Rate LB/A	83	124	149	166

Figure 105 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 85 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 105.

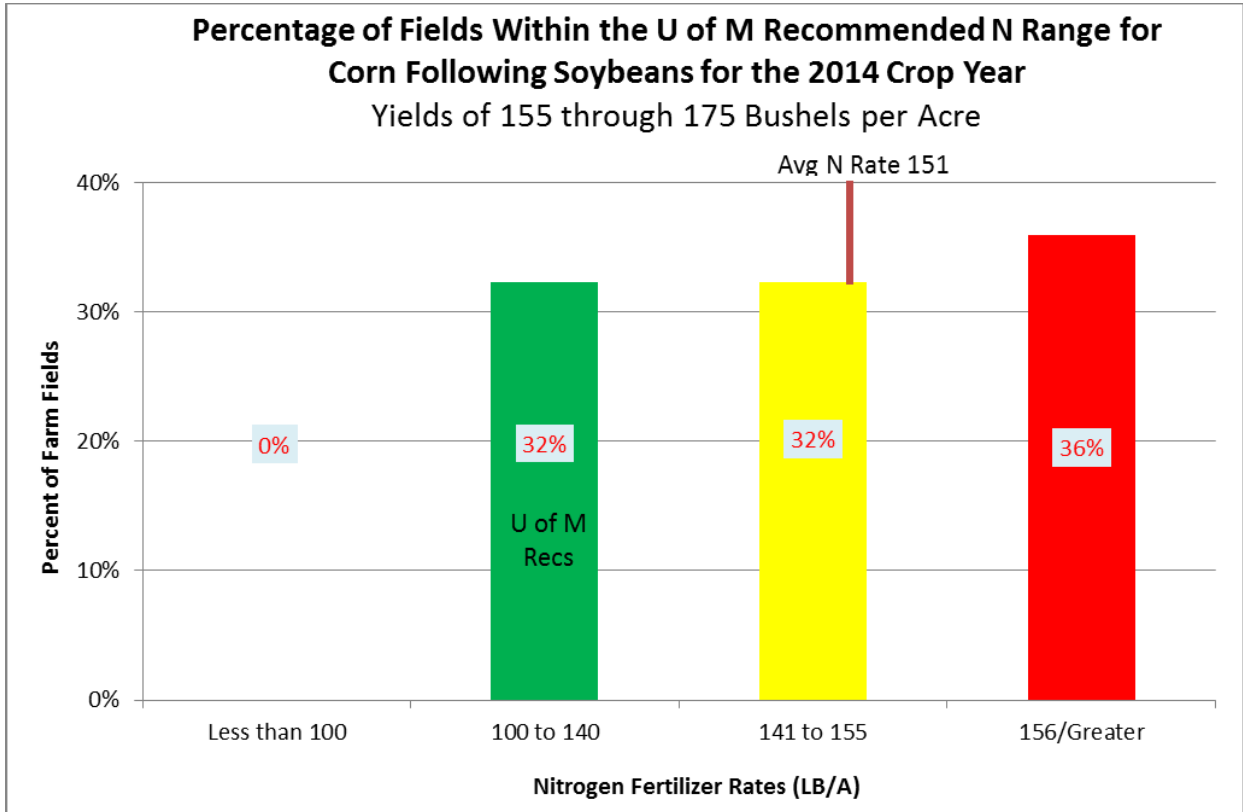


Figure 105. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SC BMP region for 2014: 127 fields.

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 2014 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	166	169	168
Avg N Rate LB/A	No Data	131	149	170

Figure 106 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 86 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 106.

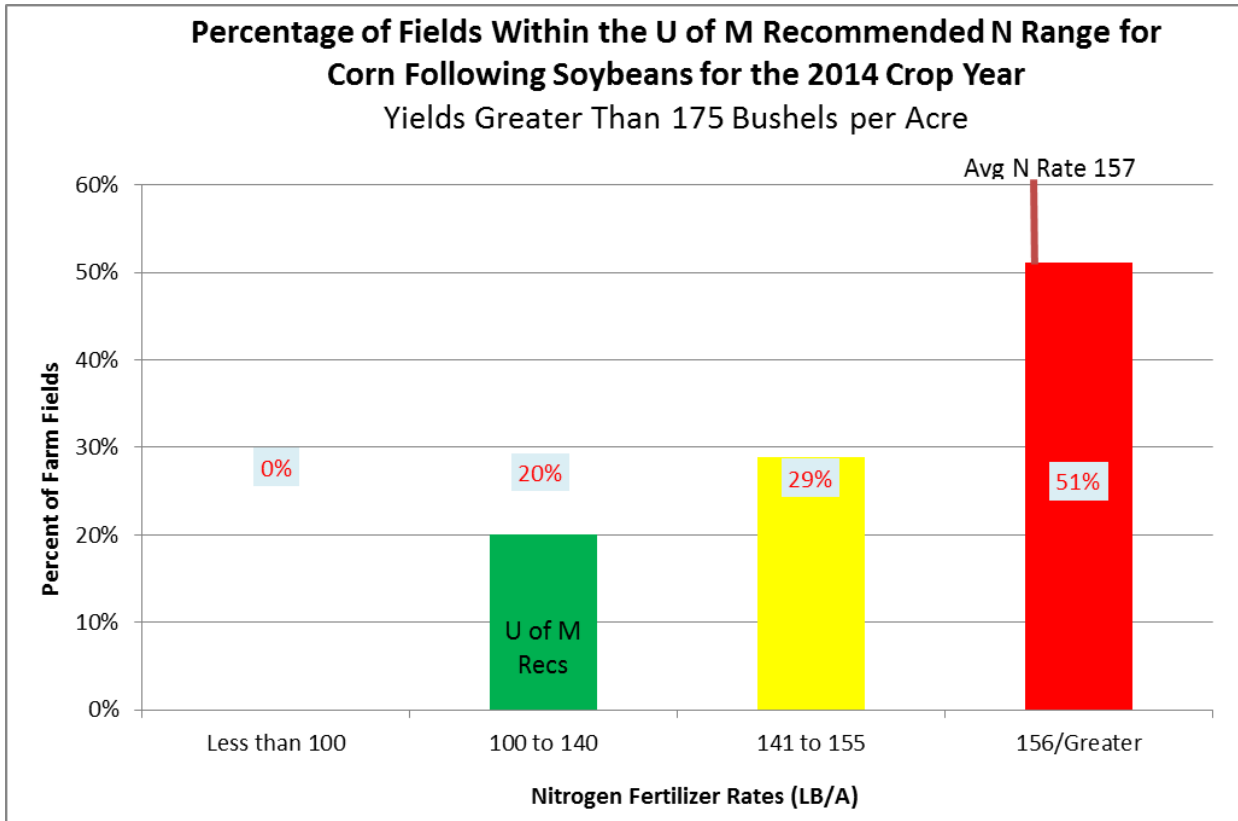


Figure 106. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SC BMP region for 2014: 135 fields.

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 2014 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	184	187	187
Avg N Rate LB/A	No Data	132	150	170

Southwestern and West Central Region: Corn Following Soybeans

Figure 107 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 87 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 107.

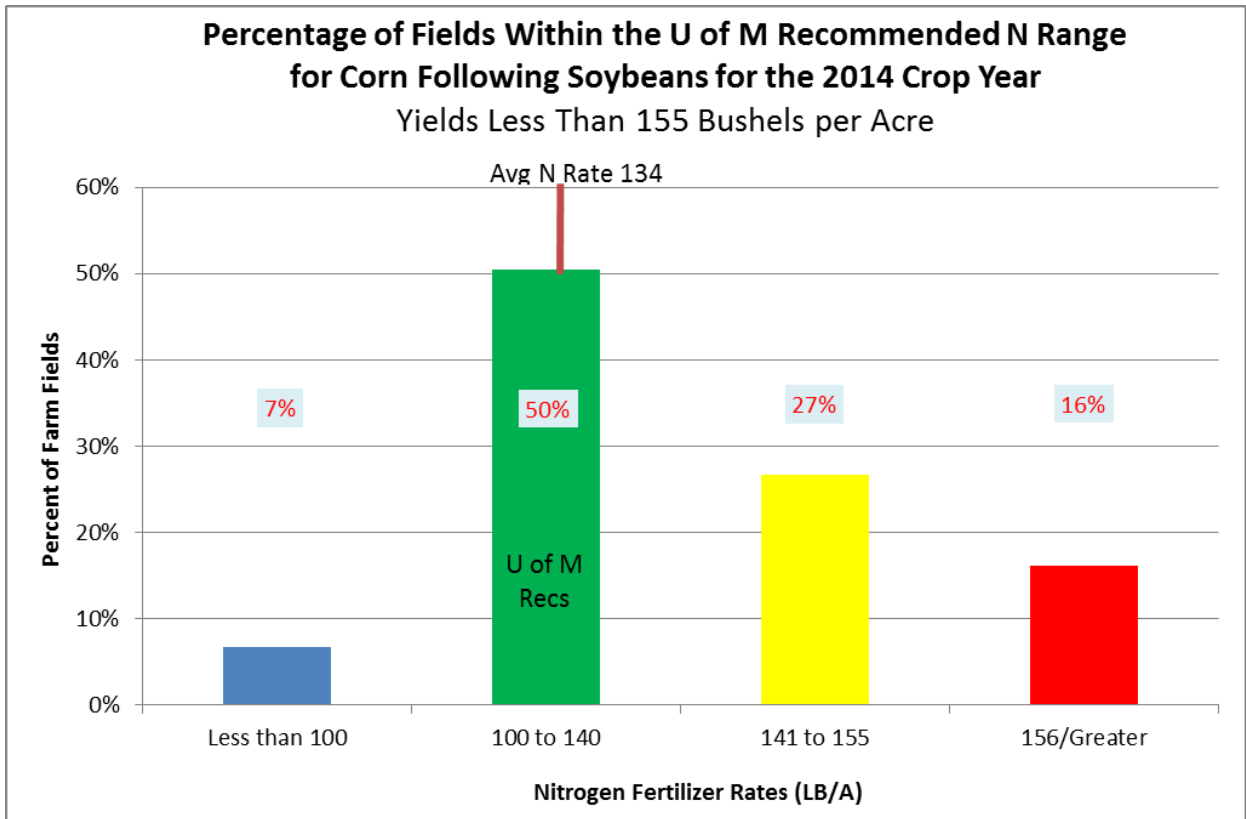


Figure 107. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the SW BMP region for 2014: 105 fields.

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 2014 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	119	140	144	144
Avg N Rate LB/A	77	123	149	167

Figure 108 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 88 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 108.

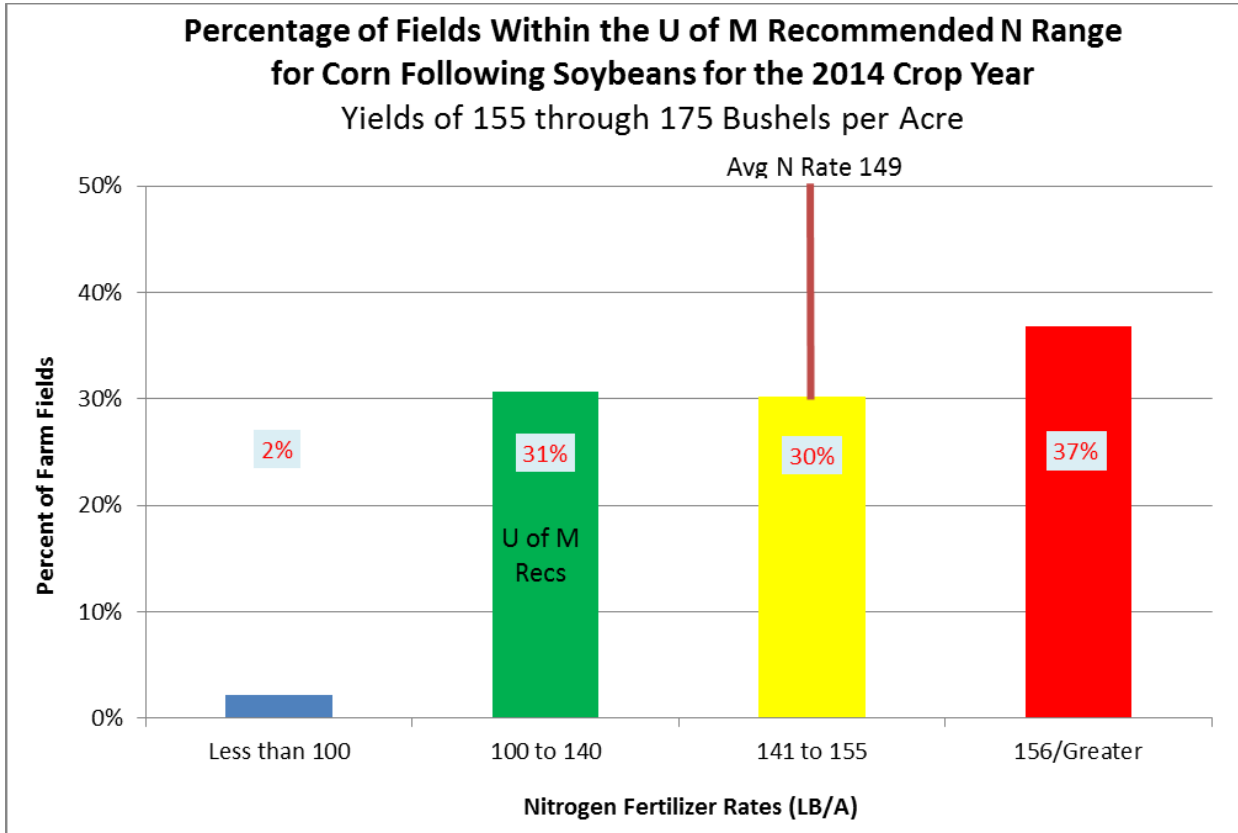


Figure 108. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the SW BMP region for 2014: 179 fields.

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 2014 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	168	166	167	168
Avg N Rate LB/A	80	133	150	167

Figure 109 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 89 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 109.

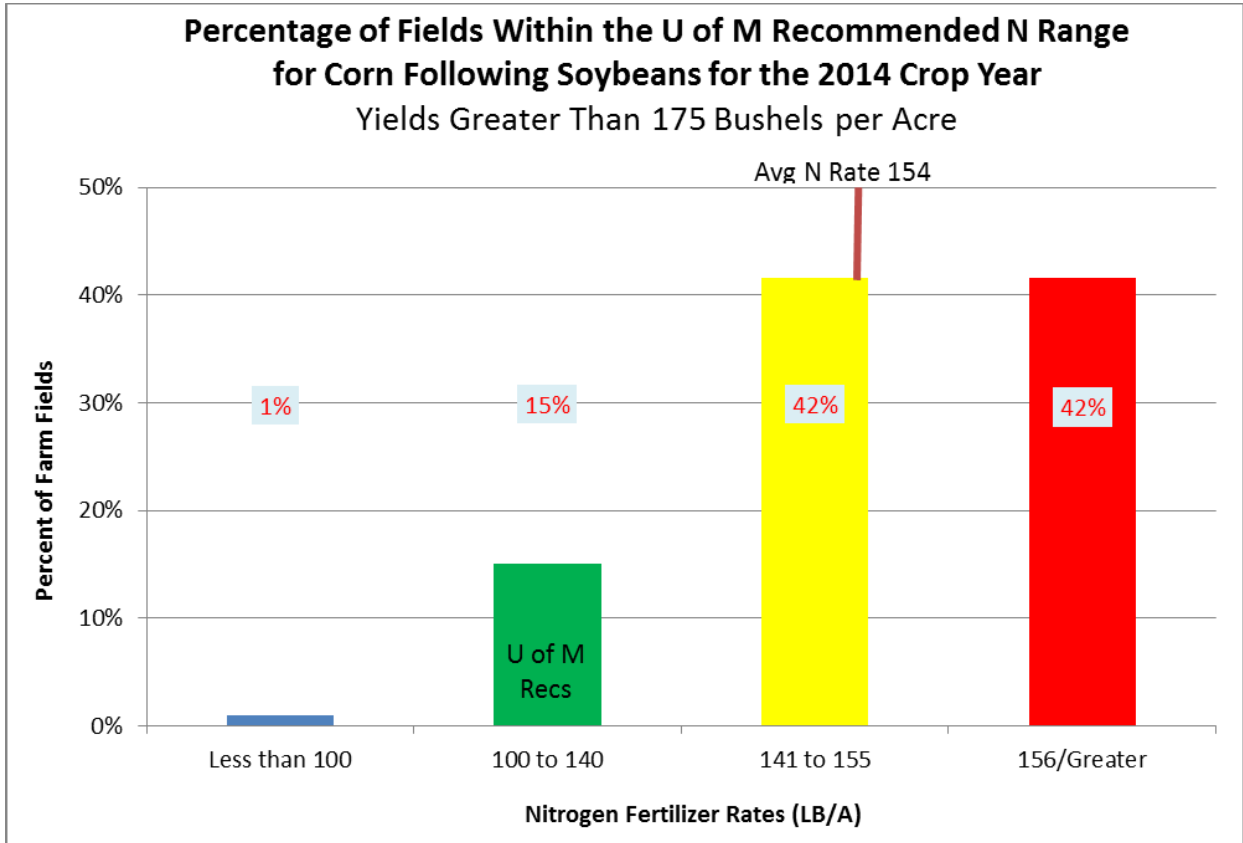


Figure 109. Percentage of fields within the U of M recommended N range for corn following soybeans with yields greater than 175 bushels per acre in the SW BMP region for 2014: 101 fields.

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 2014 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	190	184	185	187
Avg N Rate LB/A	95	131	149	168

Northwestern Region: Corn Following Soybeans

Figure 110 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 90 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 110.

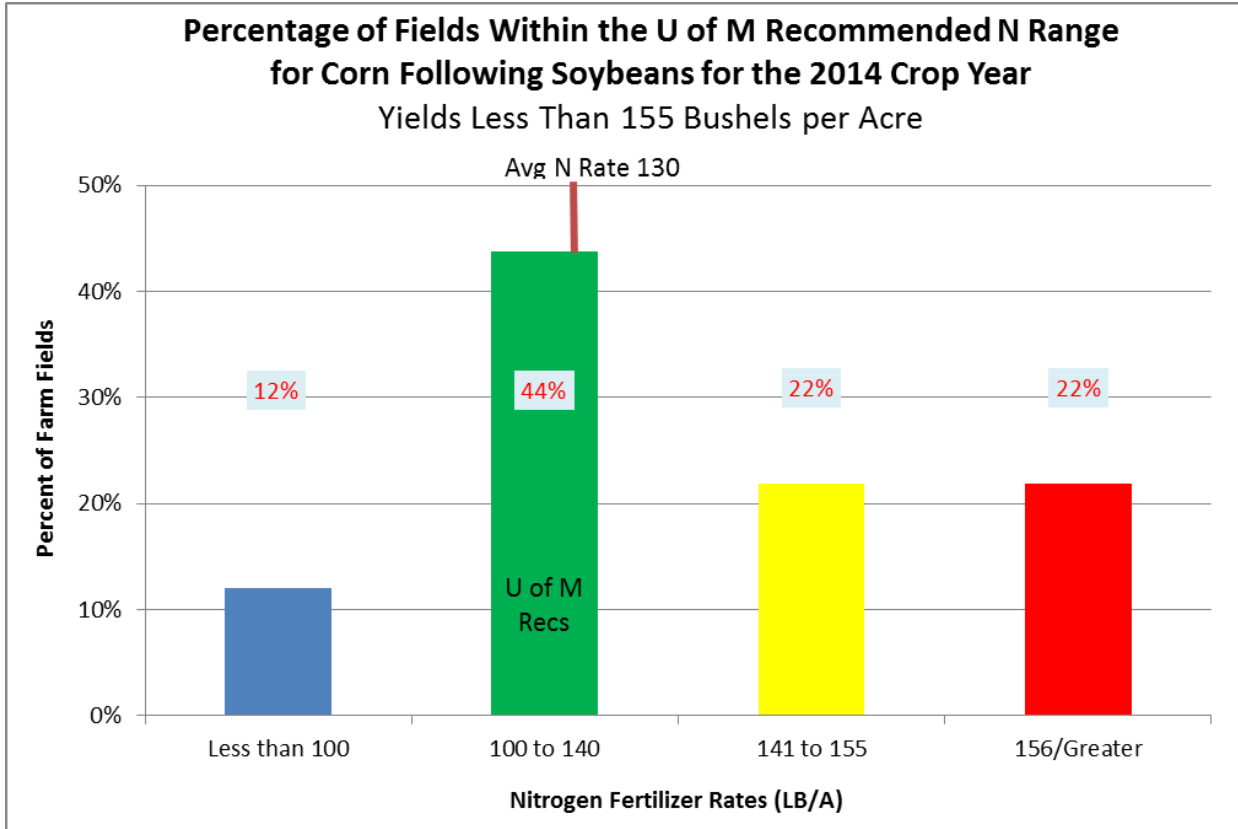


Figure 110. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the NW BMP for 2014: 32 fields.

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 2014 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 111 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 91 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 111.

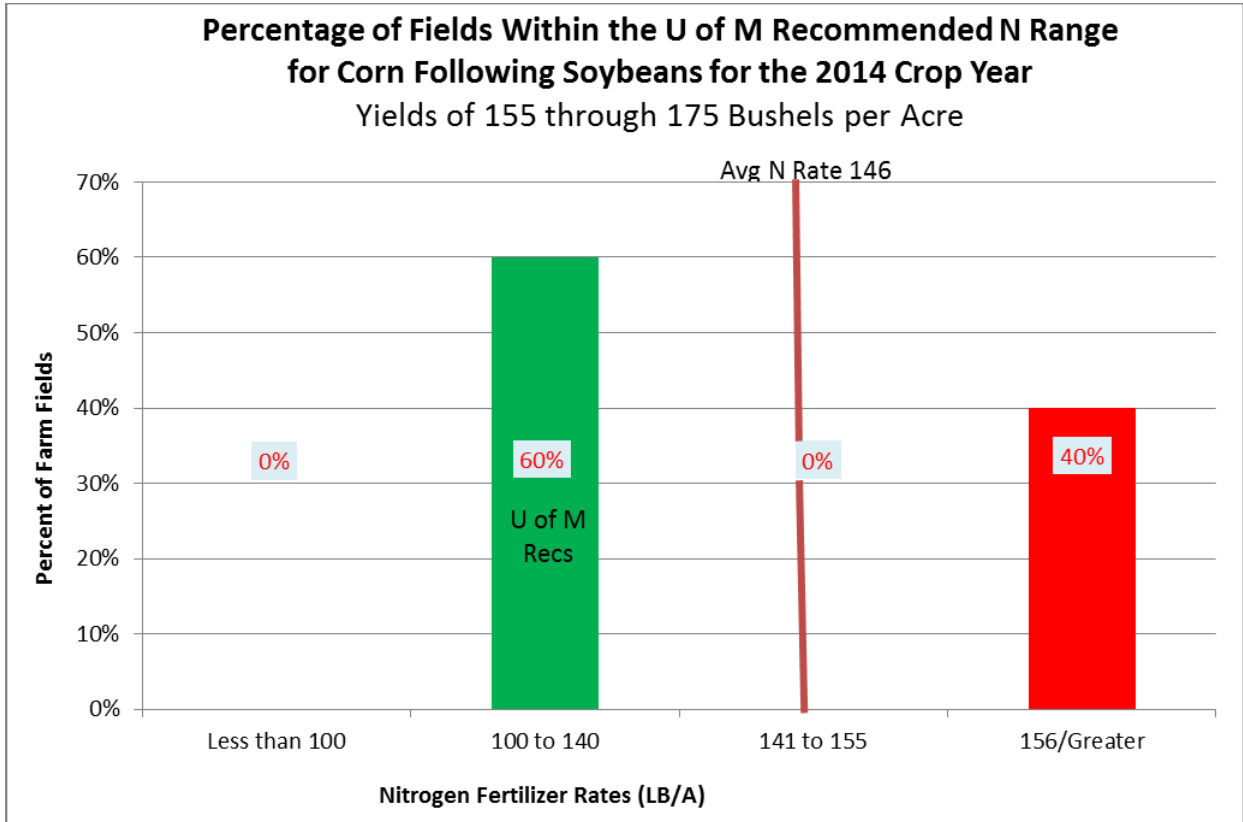


Figure 111. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the NW BMP region for 2014: 5 fields.

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 2014 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	160	No Data	173
Avg N Rate LB/A	No Data	127	No Data	174

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 112 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 92 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 112.

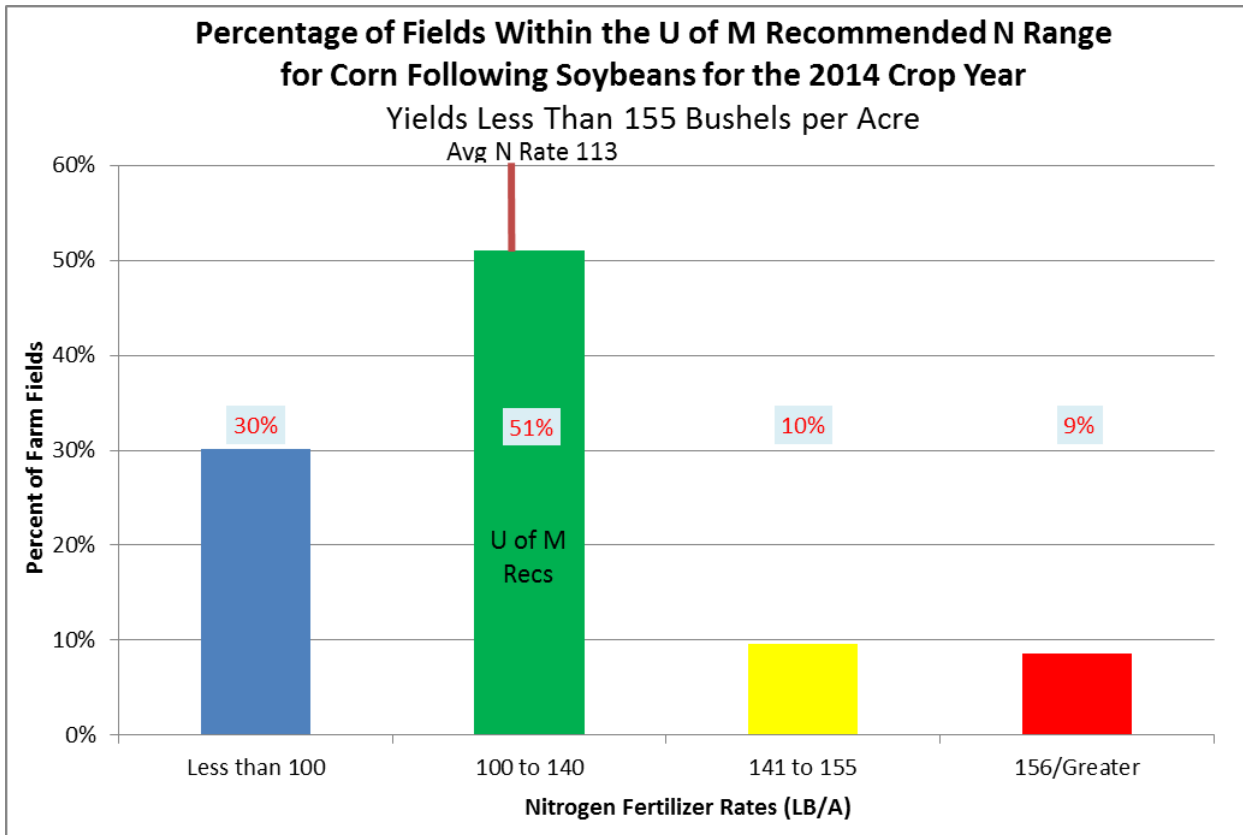


Figure 112. Percentage of fields within the U of M recommended N range for corn following soybeans with yields less than 155 bushels per acre in the IRR BMP region for 2014: 93 fields.

Table 92. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields less than 155 bushels per acre for the 2014 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	107	121	129	135
Avg N Rate LB/A	74	118	150	178

Figure 113 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 93 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 113.

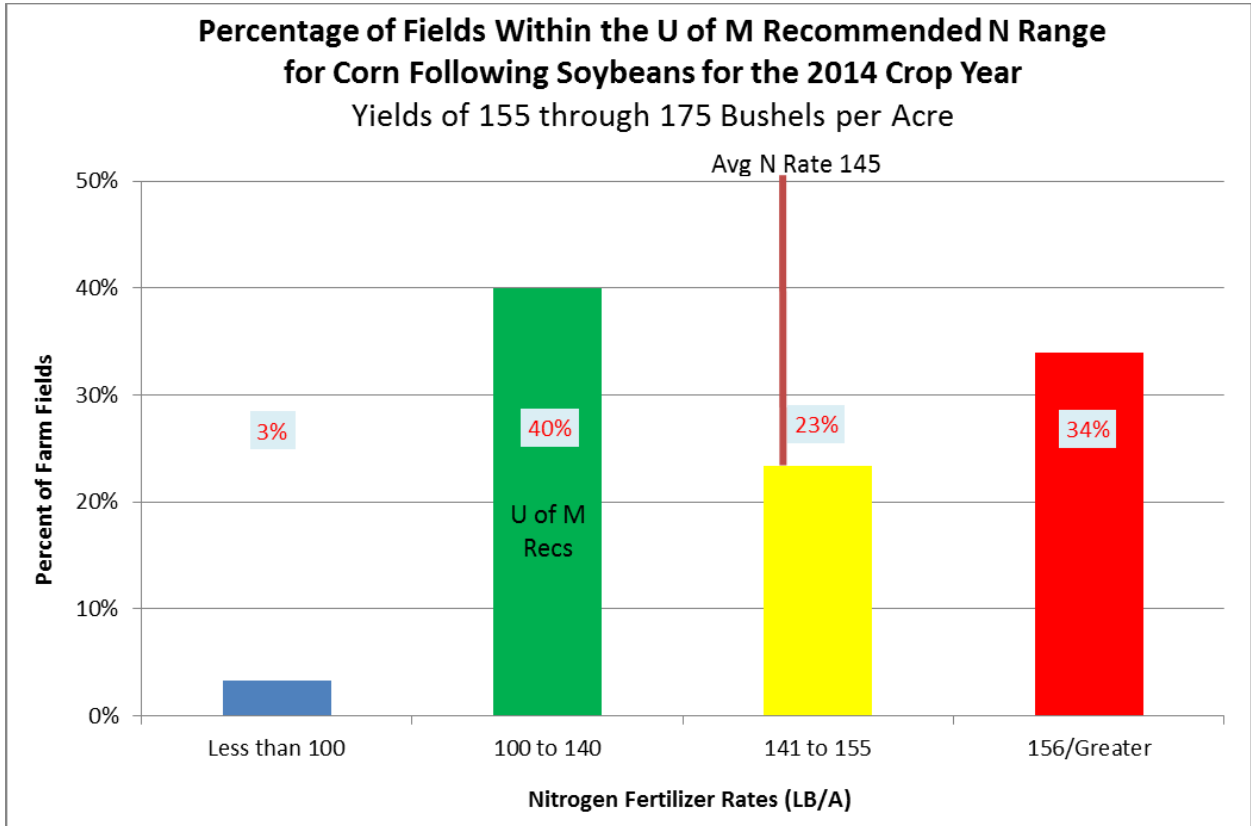


Figure 113. Percentage of fields within the U of M recommended N range for corn following soybeans with yields of 155 through 175 bushels per acre in the IRR BMP region for 2014: 30 fields.

Table 93. Nitrogen fertilizer rates and associated yields for corn following soybeans on all fields with yields of 155 through 175 bushels per acre for the 2014 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	160	164	161	166
Avg N Rate LB/A	80	128	149	168

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

Statewide: Corn Following Corn

Figure 114 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 94 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 114.

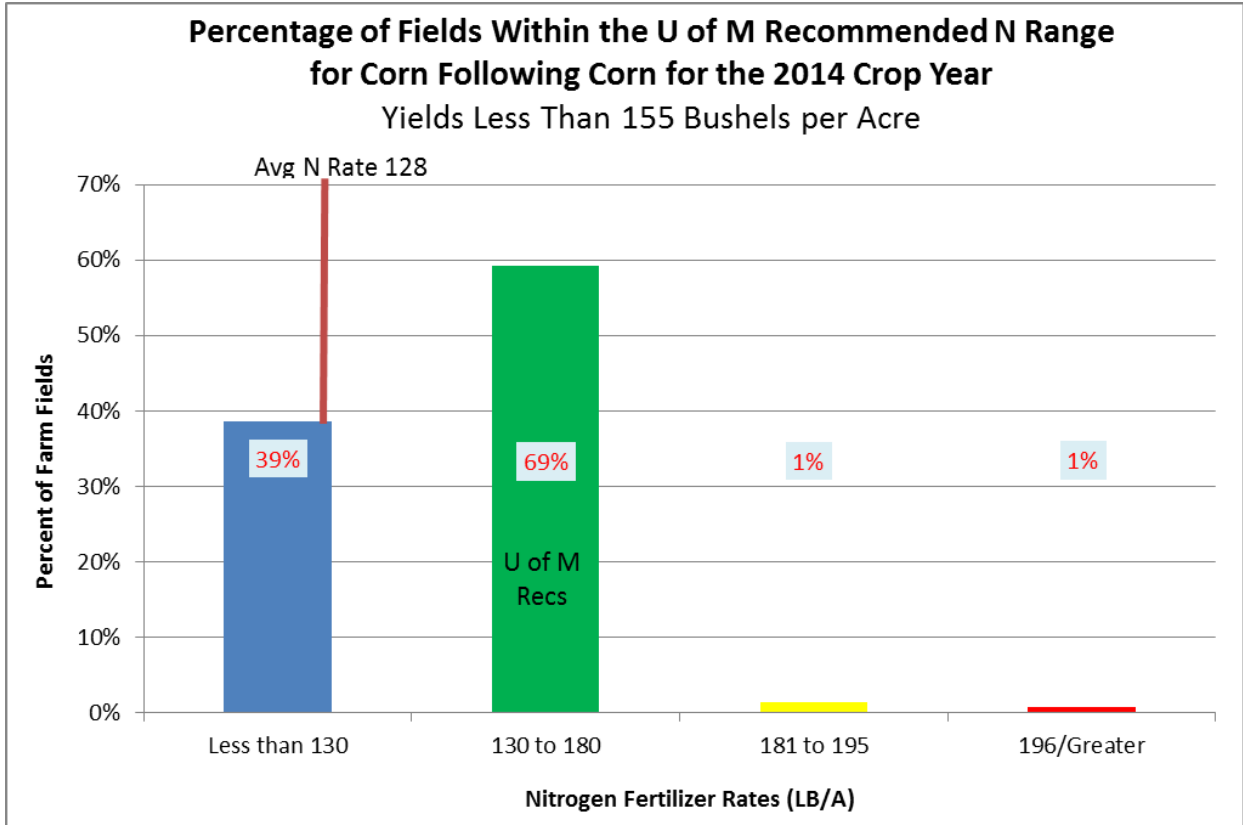


Figure 114. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in Minnesota for 2014: 140 fields.

Table 94. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2014 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	106	136	149	80
Avg N Rate LB/A	87	152	192	200

Figure 115 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 95 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 115.

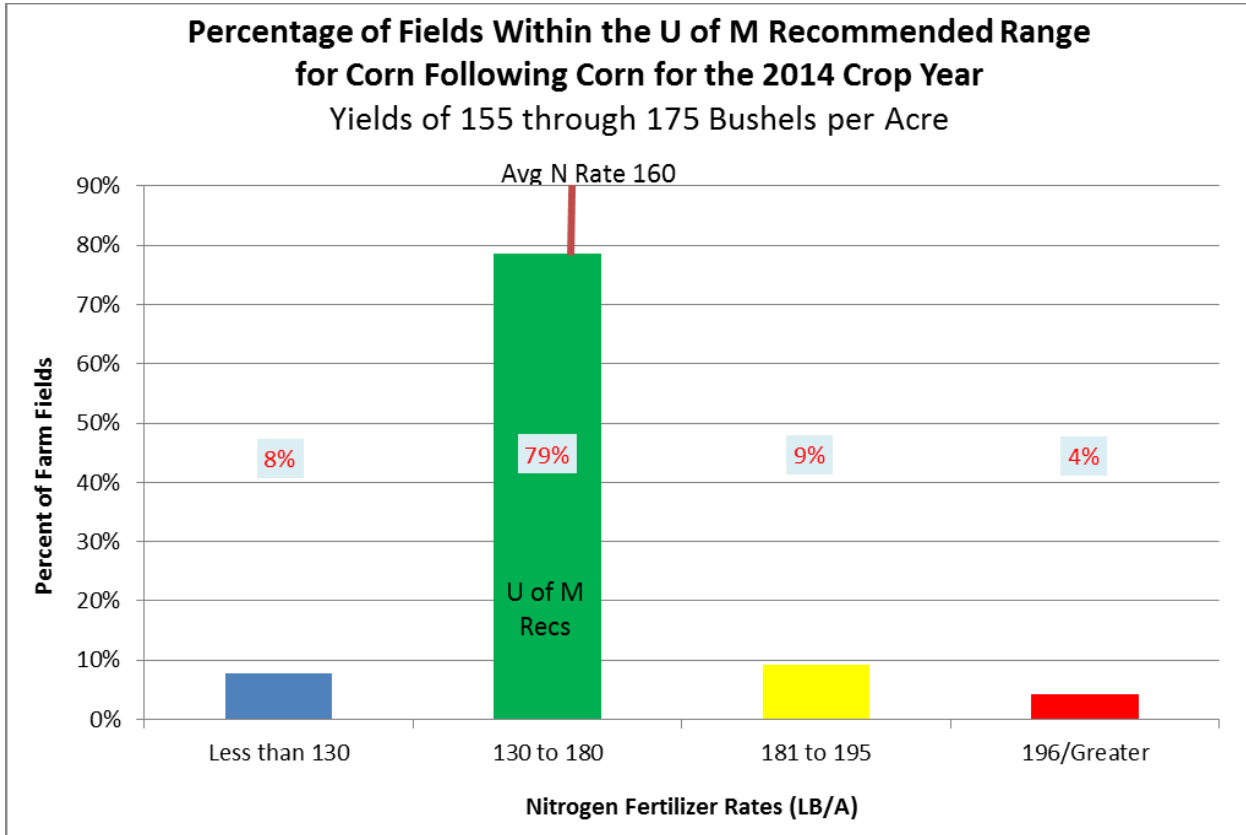


Figure 115. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in Minnesota for 2014: 140 fields.

Table 95. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2014 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	163	167	168	173
Avg N Rate LB/A	111	159	187	203

Figure 116 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 96 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 116.

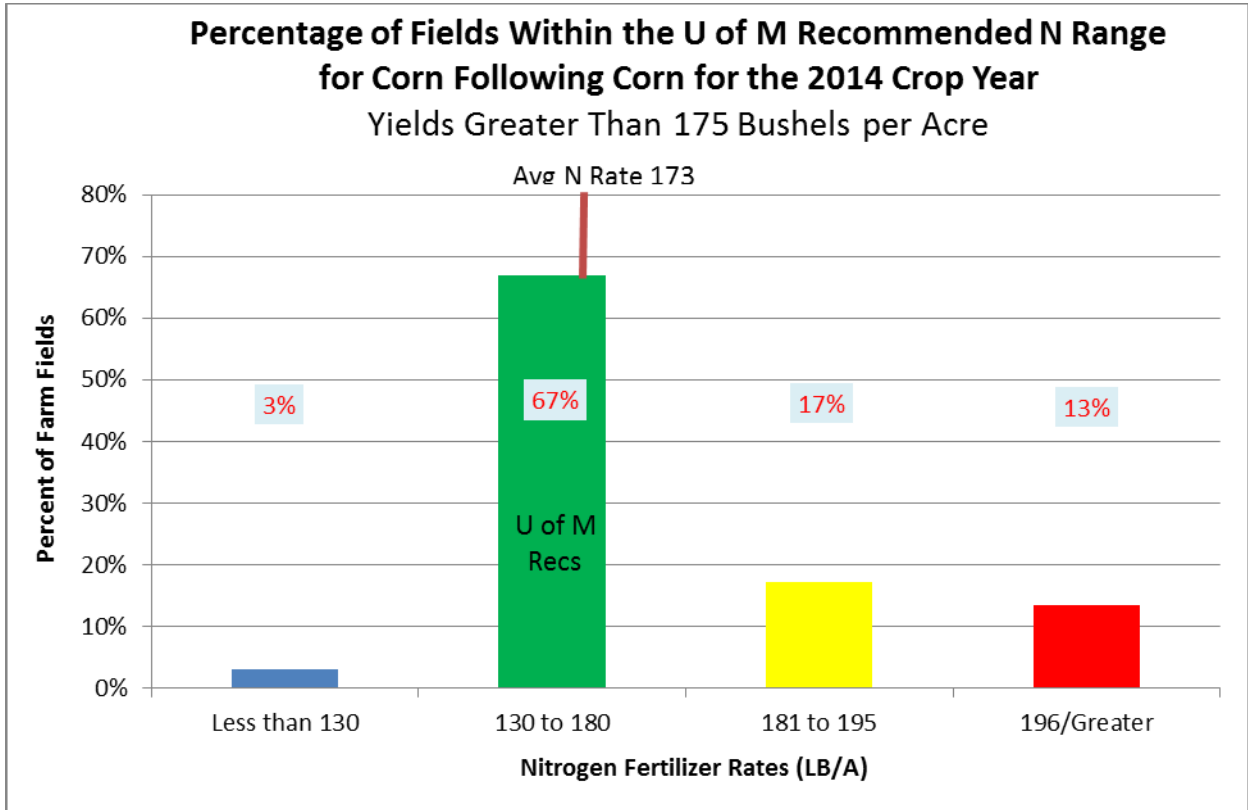


Figure 116. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in Minnesota for 2014: 195 fields.

Table 96. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2014 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	181	187	185	192
Avg N Rate LB/A	125	163	188	210

Southeastern Region: Corn Following Corn

Figure 117 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 97 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 117.

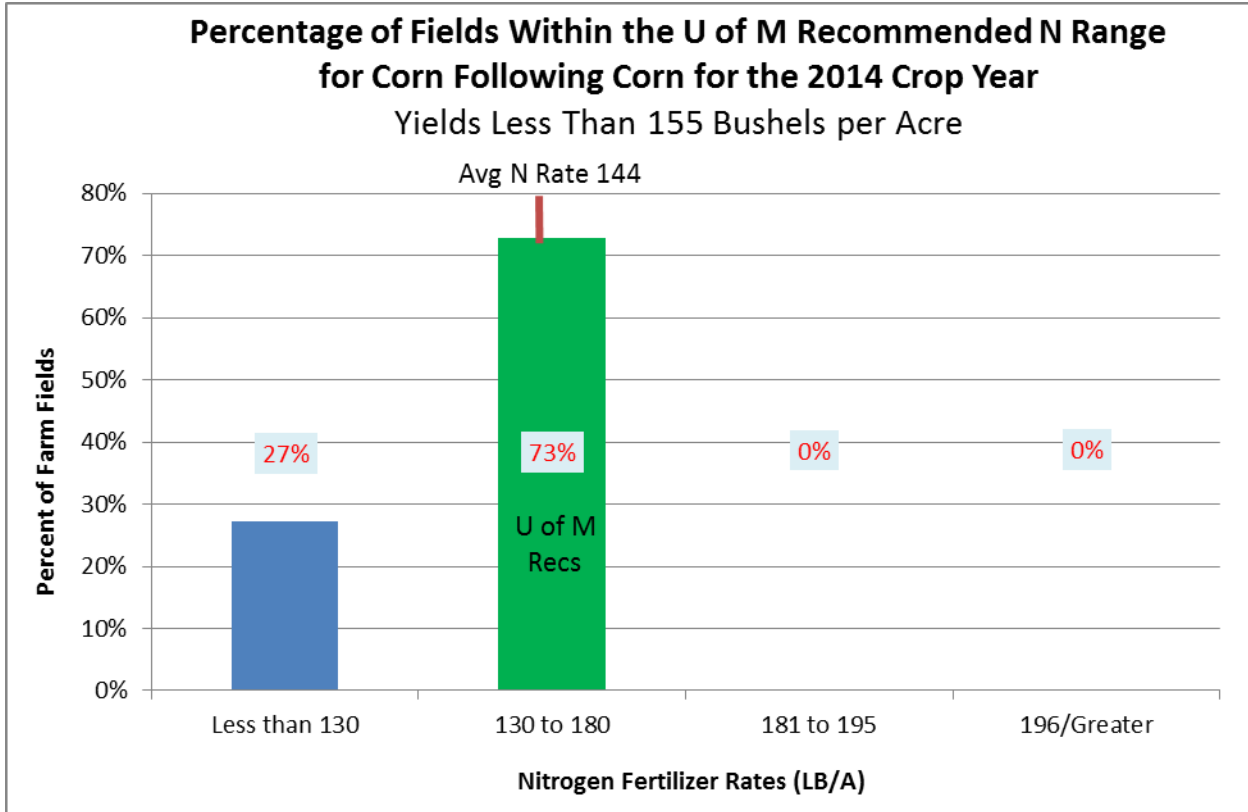


Figure 117. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SE BMP region for 2014: 11 fields.

Table 97. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2014 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	117	144	No Data	No Data
Avg N Rate LB/A	117	154	No Data	No Data

Figure 118 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 98 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 118.

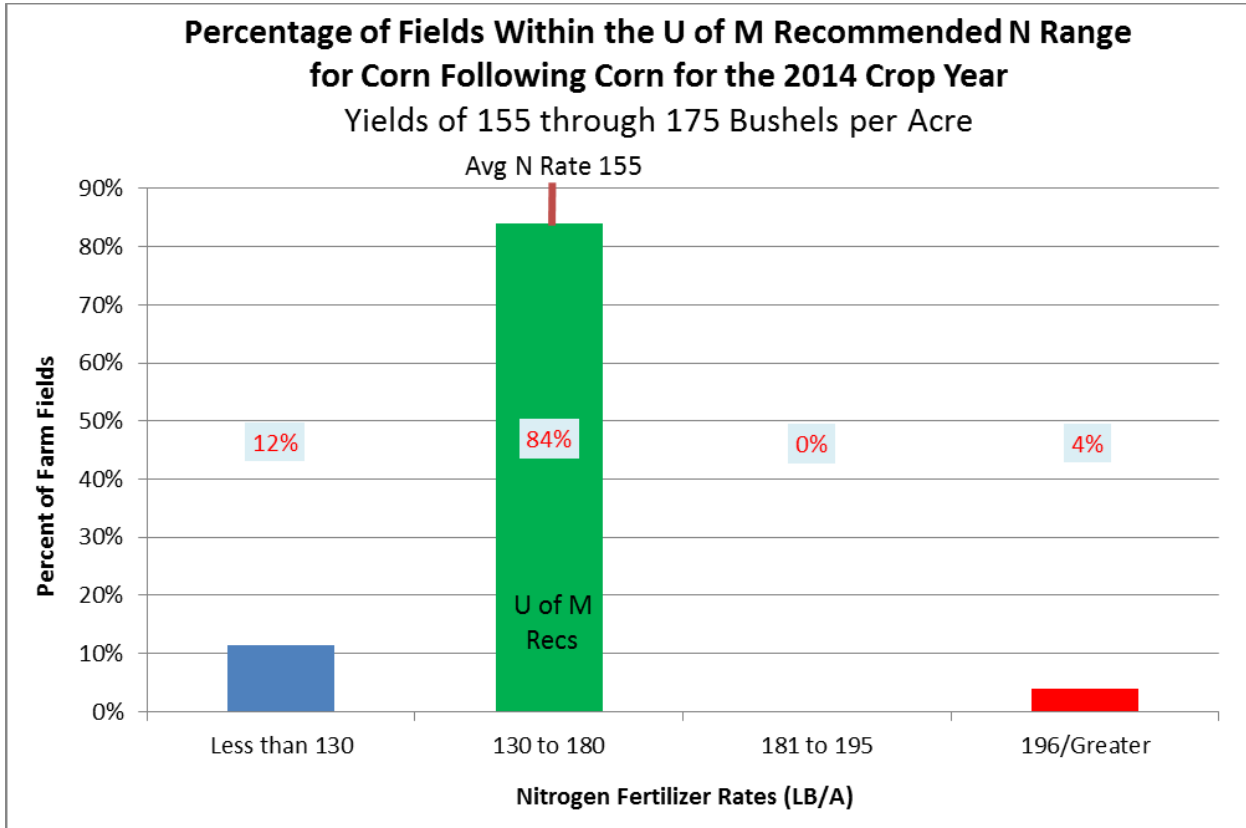


Figure 118. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SE BMP region for 2014: 26 fields.

Table 98. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2014 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	167	168	No Data	175
Avg N Rate LB/A	109	159	No Data	196

Figure 119 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 99 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 119.

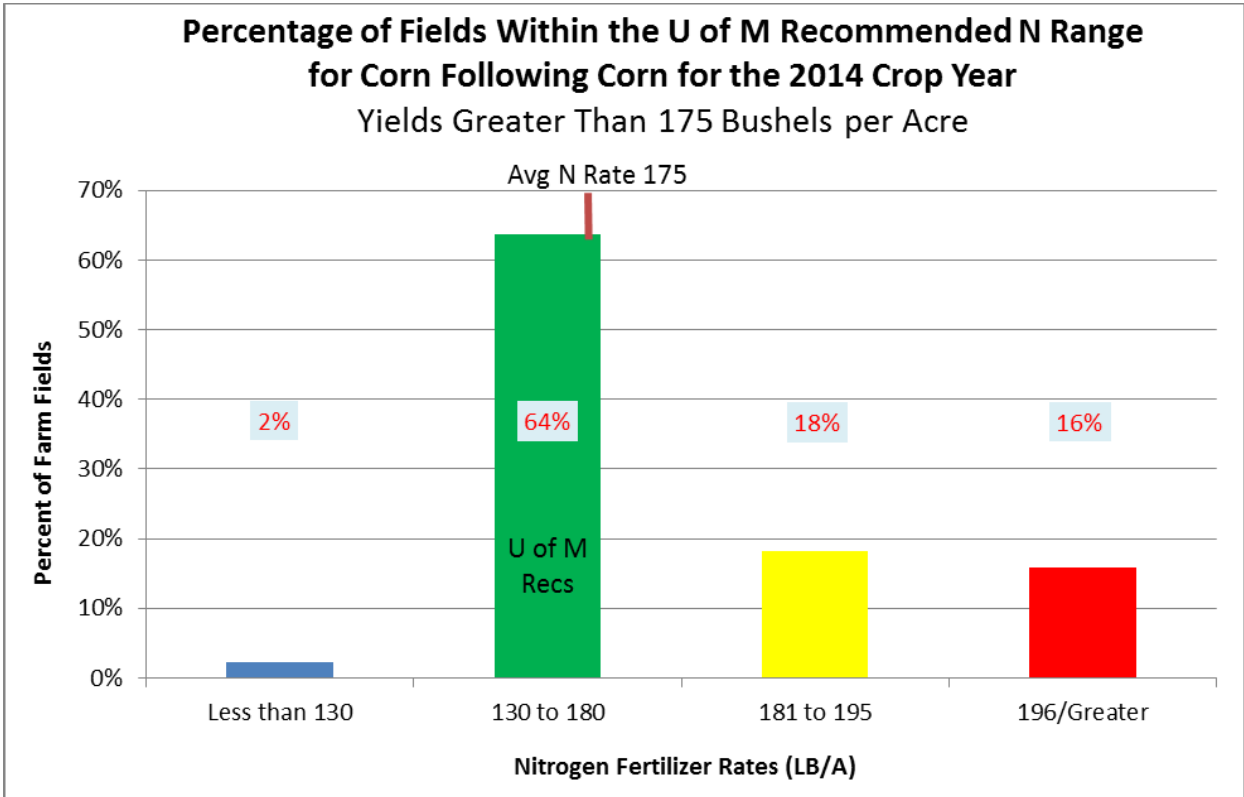


Figure 119. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SE BMP region for 2014: 44 fields.

Table 99. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2014 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	185	188	185	201
Avg N Rate LB/A	129	164	188	208

South Central Region: Corn Following Corn

Figure 120 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 100 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 120.

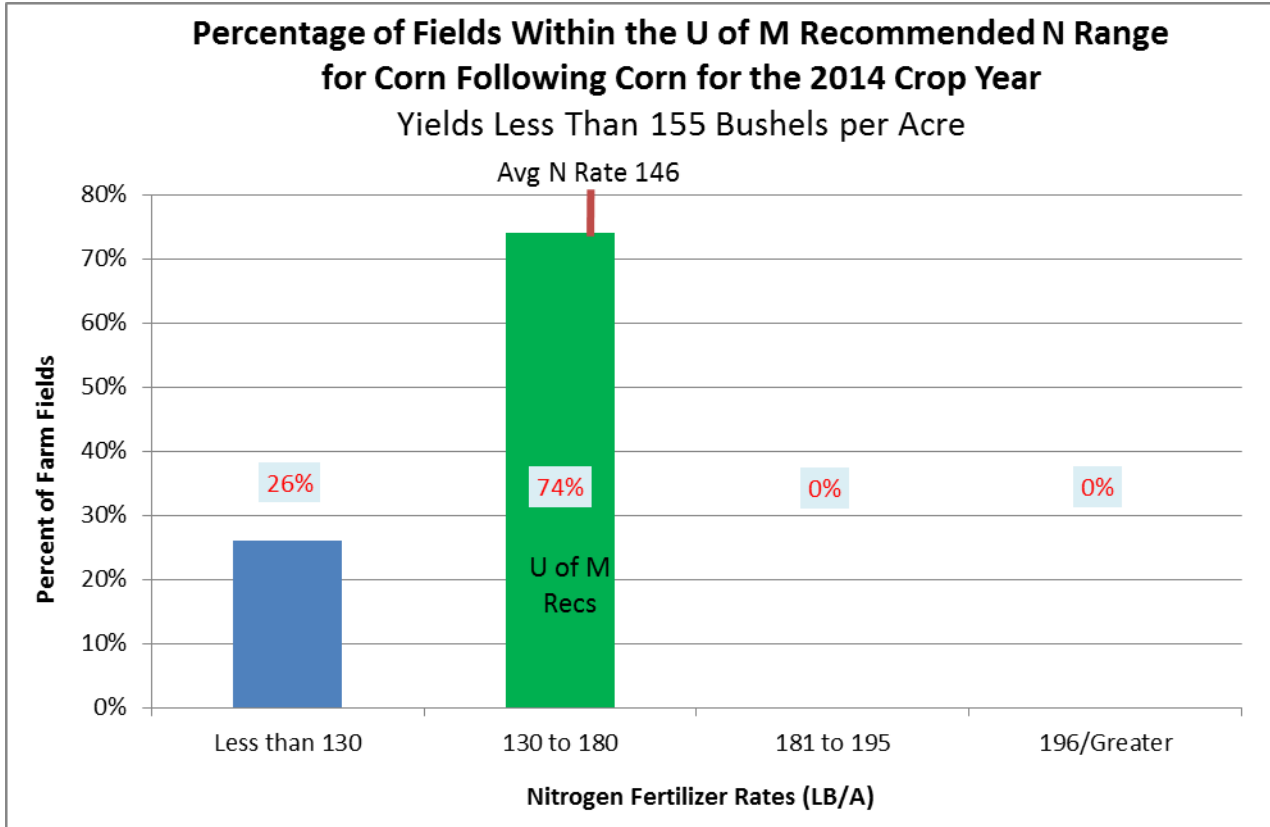


Figure 120. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SC BMP region for 2014: 23 fields.

Table 100. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2014 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	128	144	No Data	No Data
Avg N Rate LB/A	111	158	No Data	No Data

Figure 121 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 101 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 121.

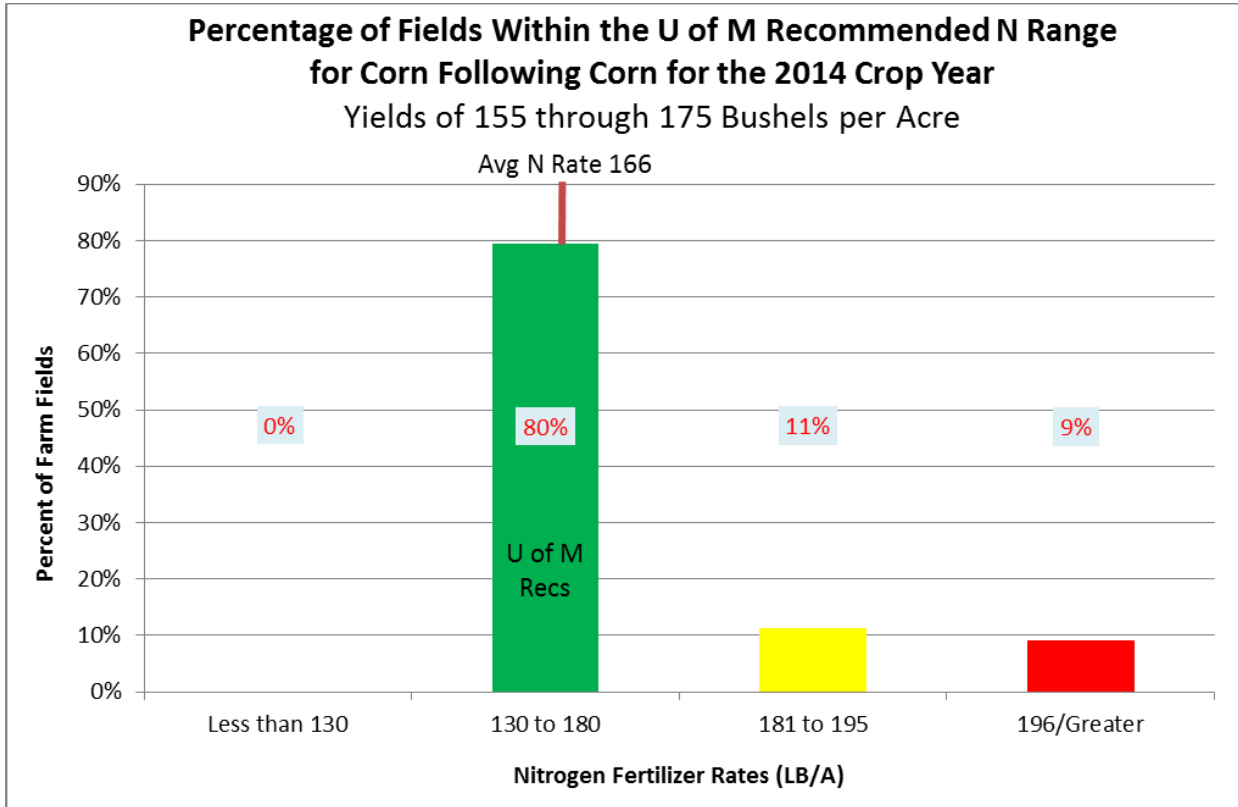


Figure 121. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SC BMP region for 2014: 44 fields.

Table 101. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2014 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	169	169	171
Avg N Rate LB/A	No Data	158	186	206

Figure 122 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 102 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 122.

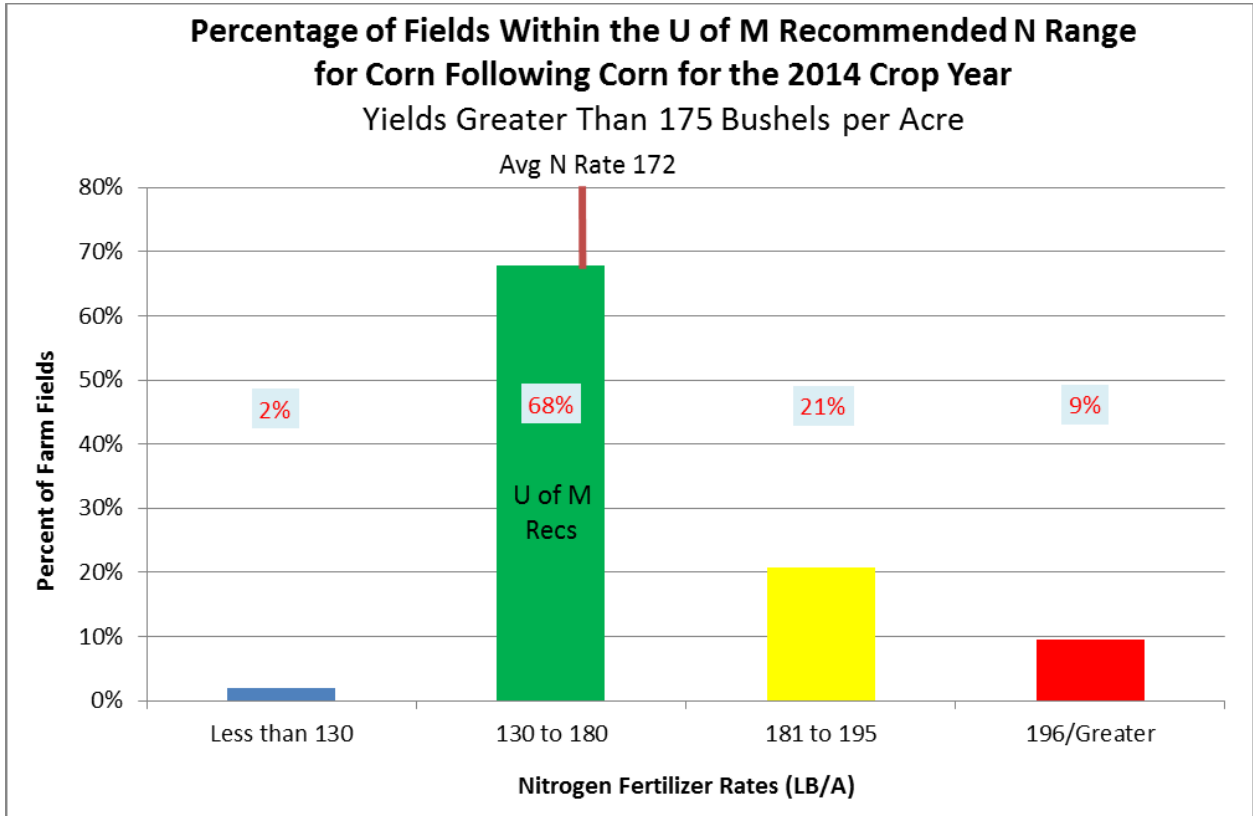


Figure 122. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SC BMP region for 2014: 53 fields.

Table 102. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2014 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	178	187	186	186
Avg N Rate LB/A	124	164	189	208

Southwestern and West Central Region: Corn Following Corn

Figure 123 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 103 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 123.

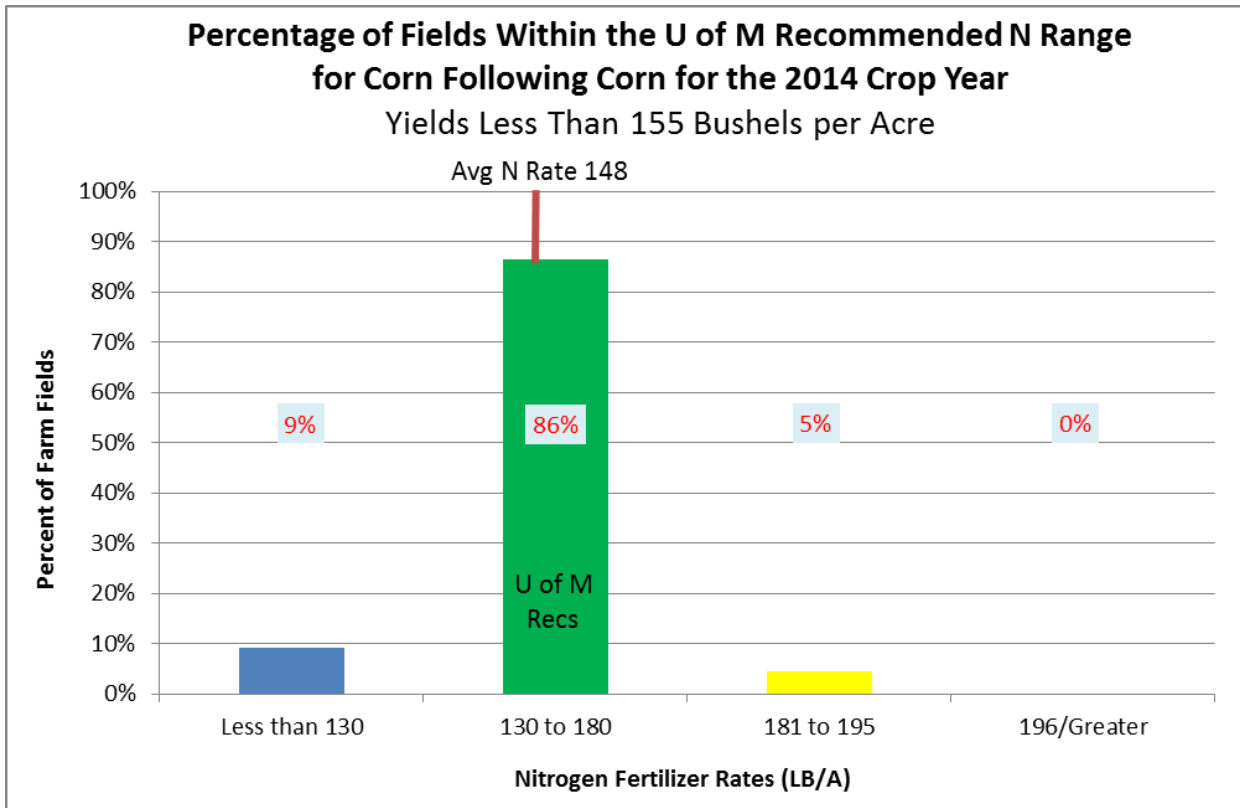


Figure 123. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the SW BMP region for 2014: 22 fields.

Table 103. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2014 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	128	143	148	No Data
Avg N Rate LB/A	95	151	190	No Data

Figure 124 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 104 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 124.

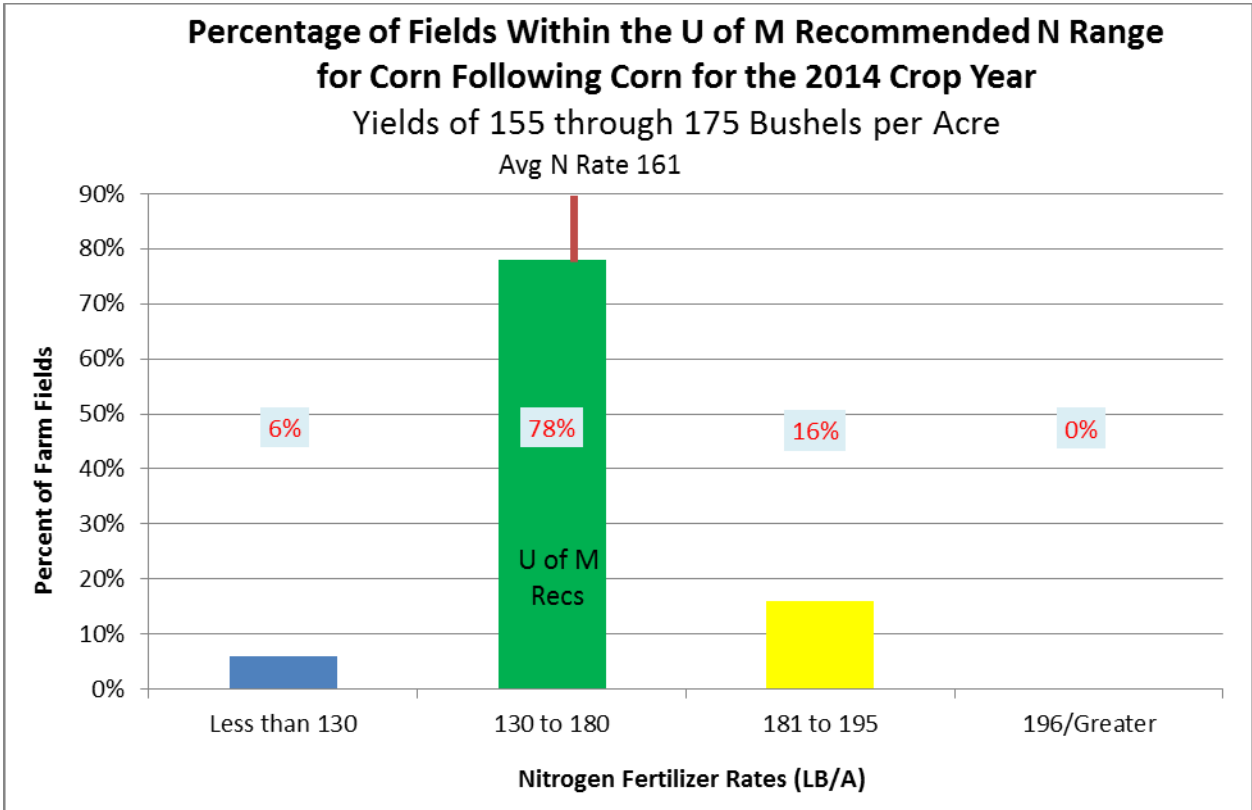


Figure 124. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the SW BMP region for 2014: 50 fields.

Table 104. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields of 155 through 175 bushels per acre for the 2014 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	160	167	167	No Data
Avg N Rate LB/A	111	160	188	No Data

Figure 125 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 105 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 125.

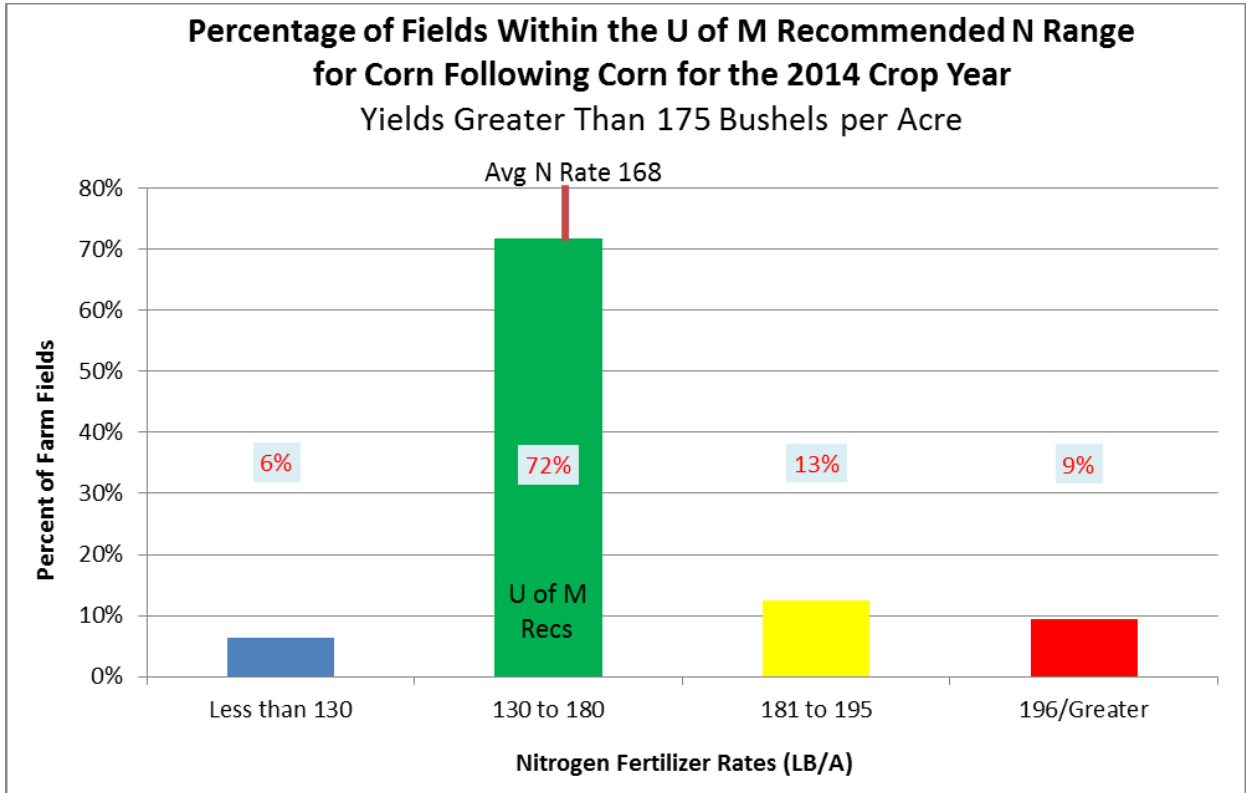


Figure 125. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the SW BMP region for 2014: 32 fields.

Table 105. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields greater than 175 bushels per acre for the 2014 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	180	186	184	185
Avg N Rate LB/A	123	162	187	216

Northwestern Region: Corn Following Corn

Figure 126 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 106 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 126.

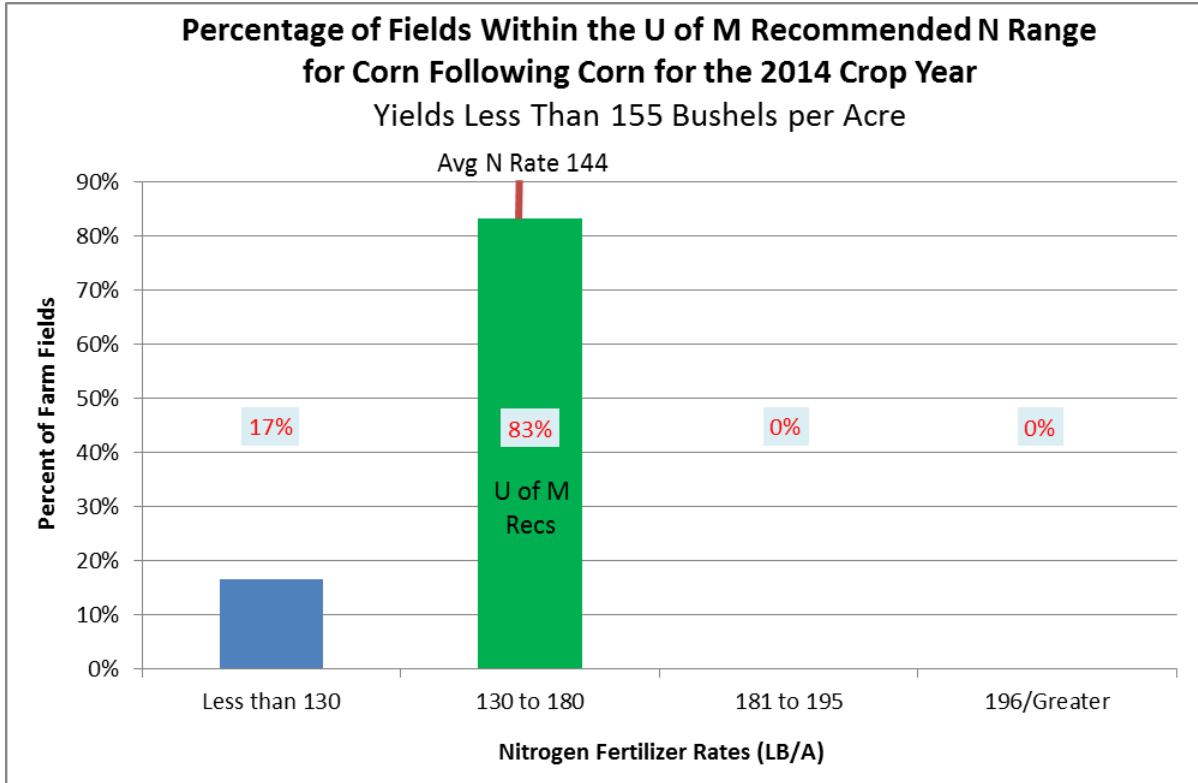


Figure 126. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the NW BMP region for 2014: 6 fields.

Table 106. Nitrogen fertilizer rates and associated yields for corn following corn on all fields with yields less than 155 bushels per acre for the 2014 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	130	105	No Data	No Data
Avg N Rate LB/A	108	151	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 127 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 107 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 127.

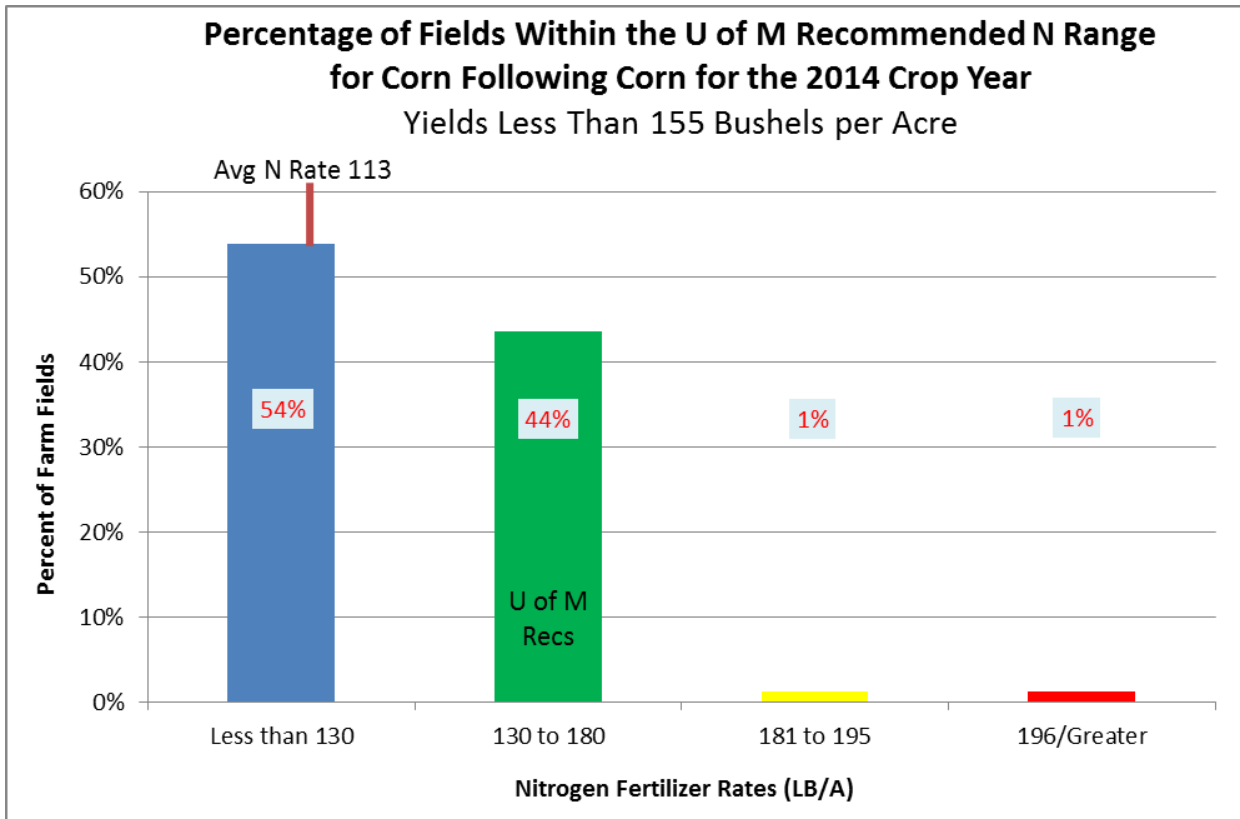


Figure 127. Percentage of fields within the U of M recommended N range for corn following corn with yields less than 155 bushels per acre in the IRR BMP region for 2014: 78 fields.

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 2014 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	150	80
Avg N Rate LB/A	80	149	193	200

Figure 128 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 108 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 128.

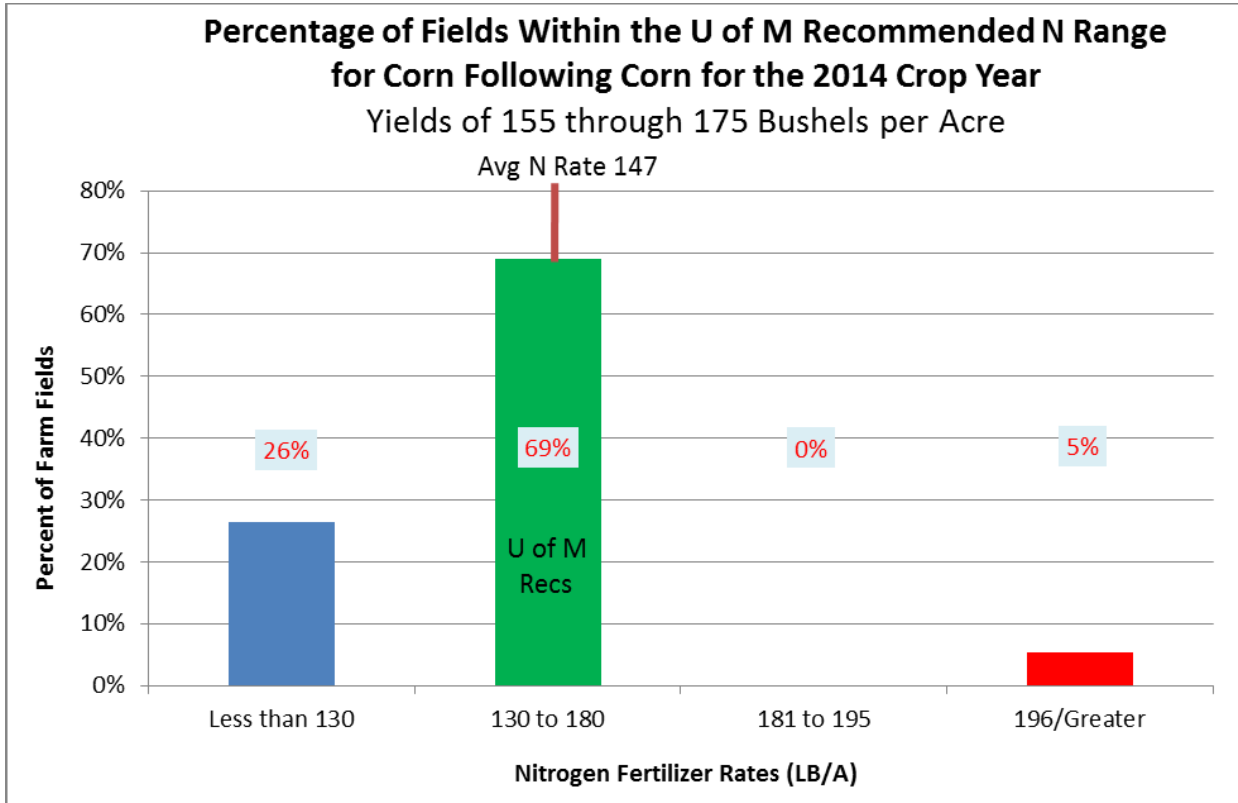


Figure 128. Percentage of fields within the U of M recommended N range for corn following corn with yields of 155 through 175 bushels per acre in the IRR BMP region for 2014: 19 fields.

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 2014 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	163	164	No Data	175
Avg N Rate LB/A	113	157	No Data	200

Figure 129 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 109 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 129.

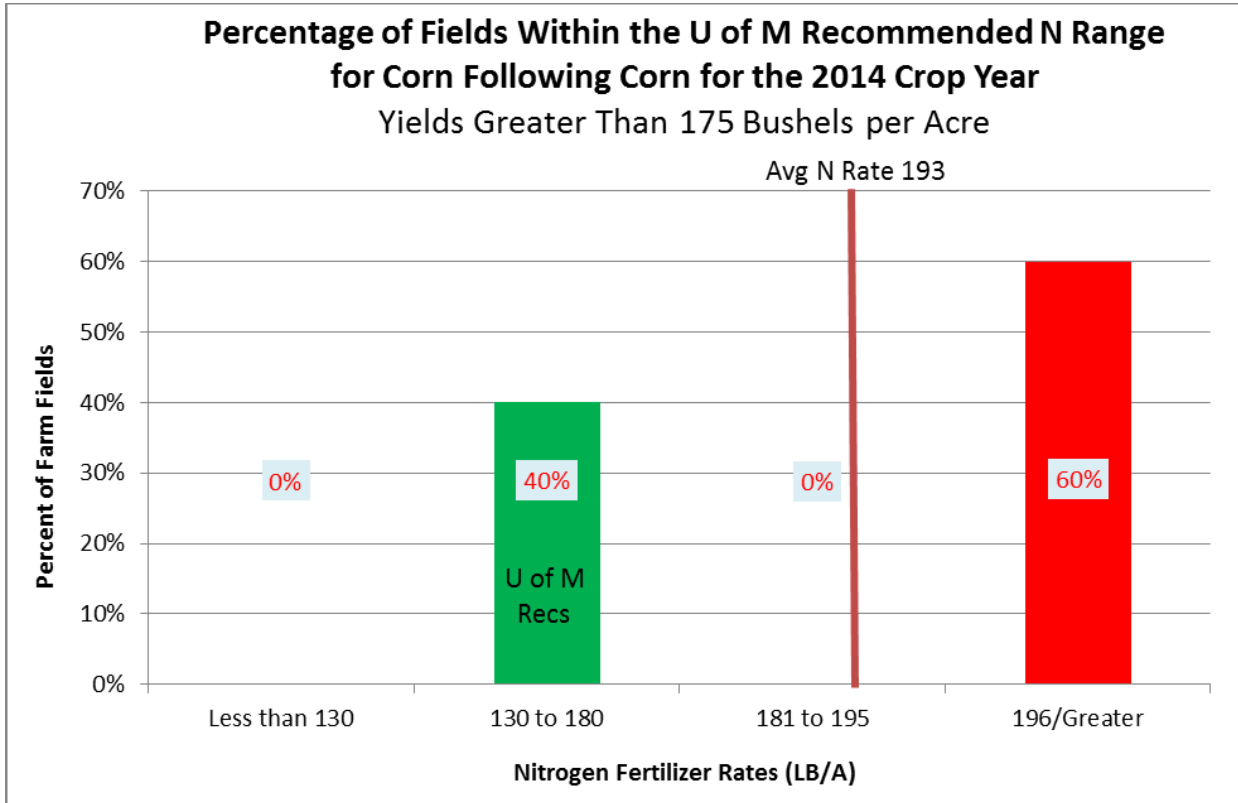


Figure 129. Percentage of fields within the U of M recommended N range for corn following corn with yields greater than 175 bushels per acre in the IRR BMP region for 2014: 5 fields.

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 2014 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	180	No Data	183
Avg N Rate LB/A	No Data	165	No Data	212

Statewide: Corn Following Corn Following Alfalfa

Figure 130 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 110 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 130.

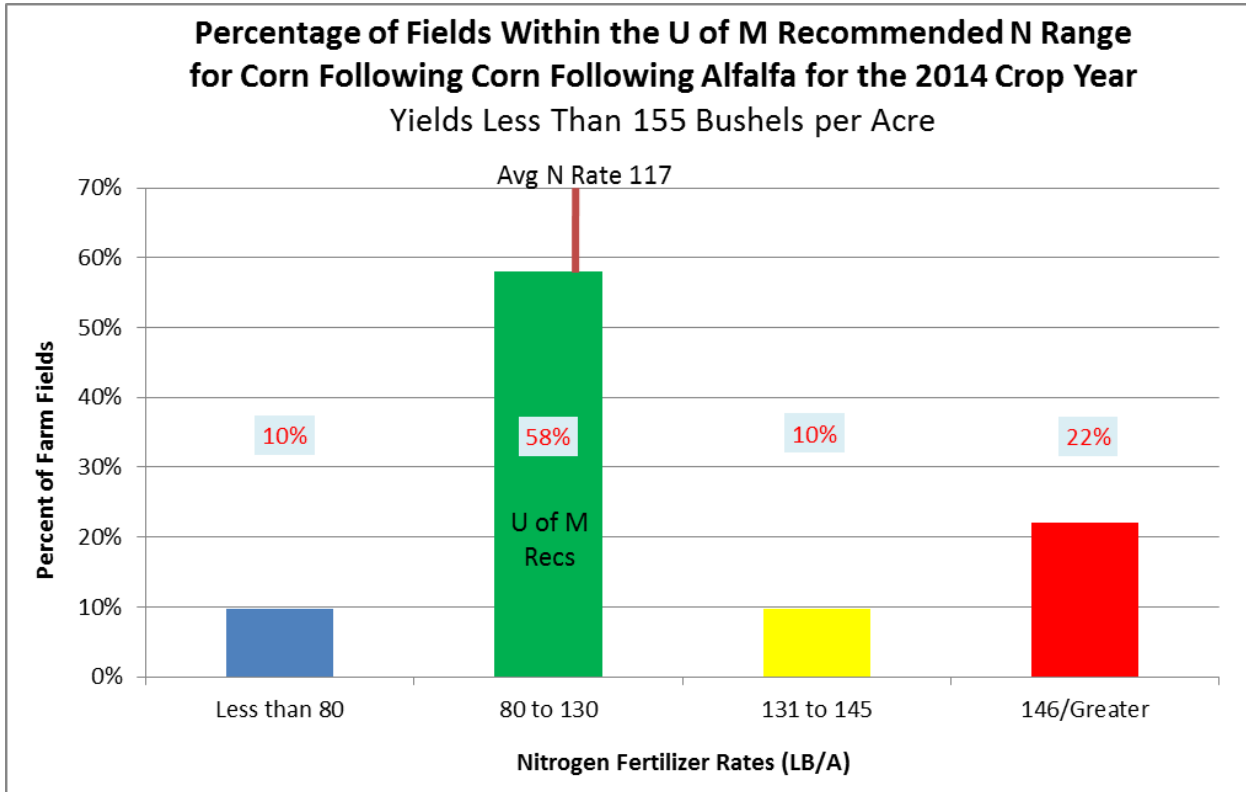


Figure 130. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2014: 31 fields.

Table 110. 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 2014 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	132	132	138	135
Avg N Rate LB/A	67	103	139	164

Figure 131 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 111 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 131.

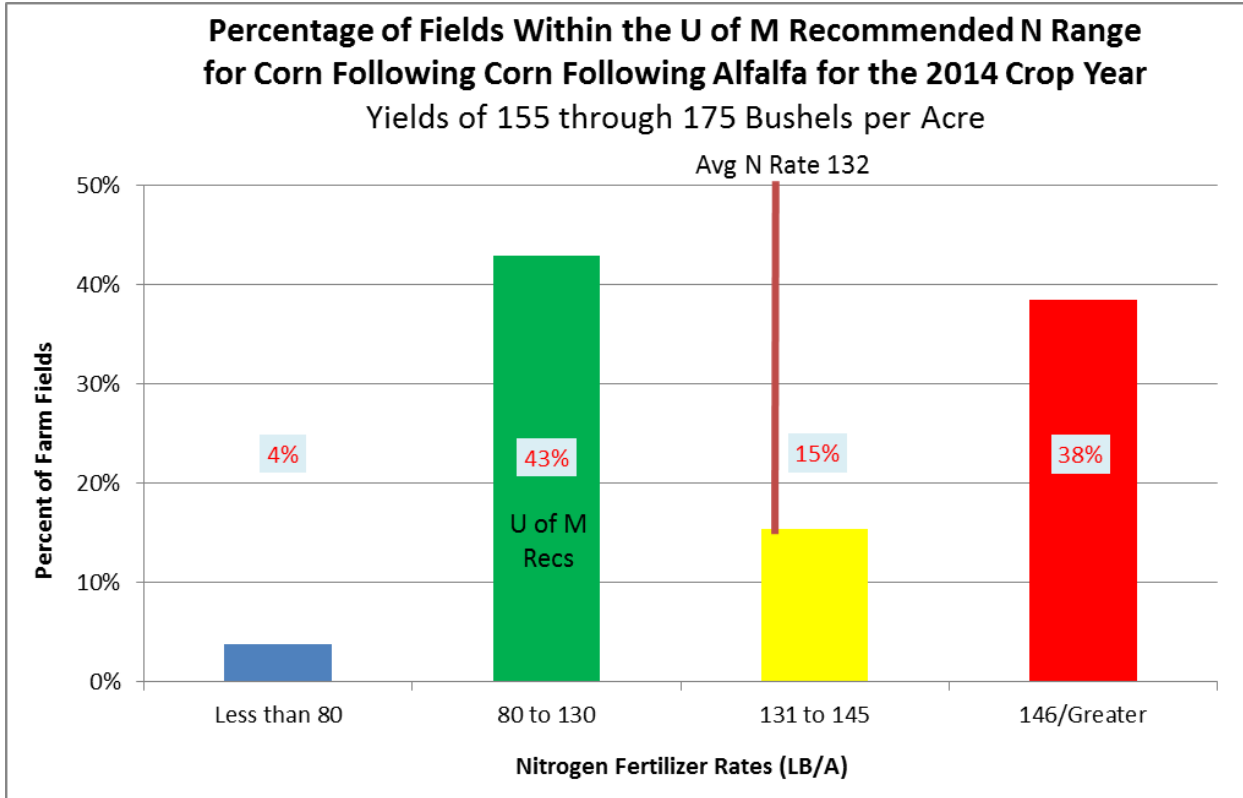


Figure 131. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2014: 26 fields.

Table 111. 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 2014 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	160	165	165	167
Avg N Rate LB/A	45	112	140	158

Figure 132 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 112 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 132.

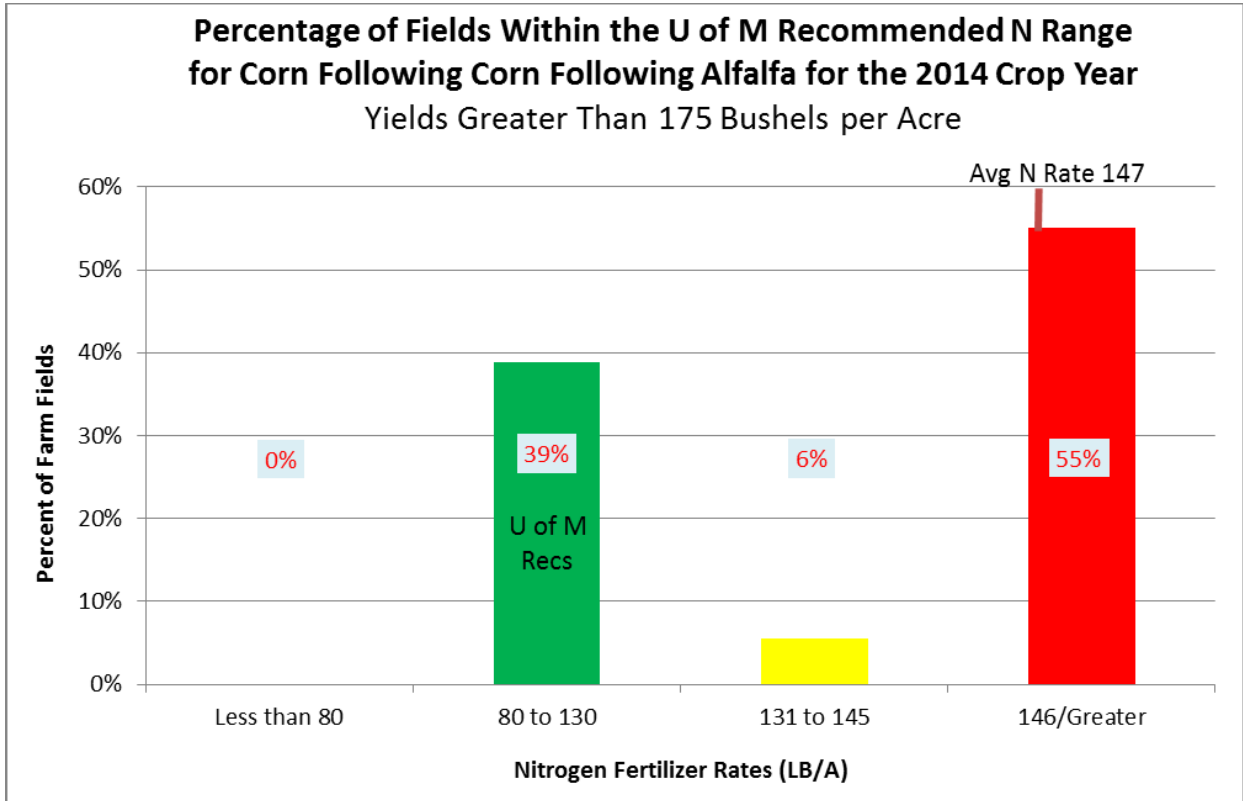


Figure 132. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2014: 18 fields.

Table 112. 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 2014 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	185	190	194
Avg N Rate LB/A	No Data	114	145	170

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 133 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 113 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 133.

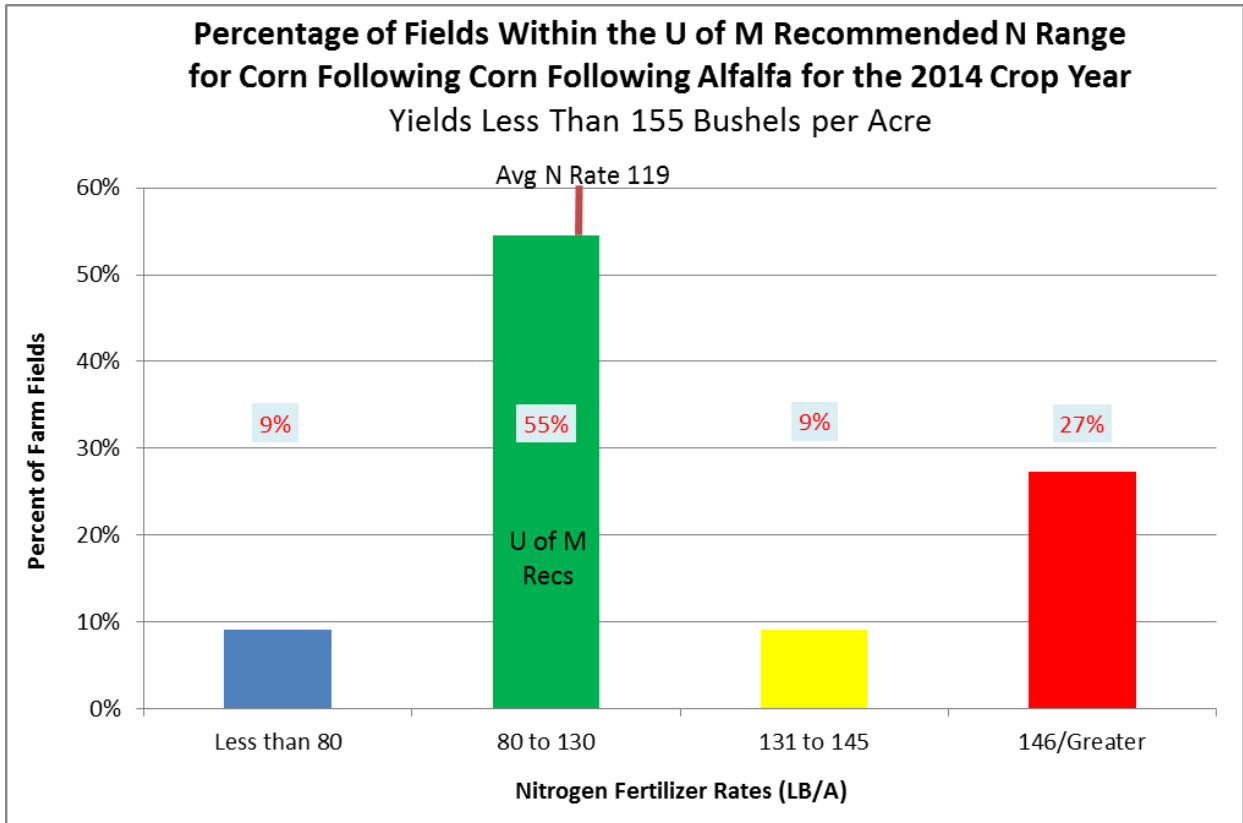


Figure 133. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SE BMP region for 2014: 11 fields.

Table 113. 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 2014 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	150	138	150	143
Avg N Rate LB/A	70	102	140	162

Figure 134 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 114 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 134.

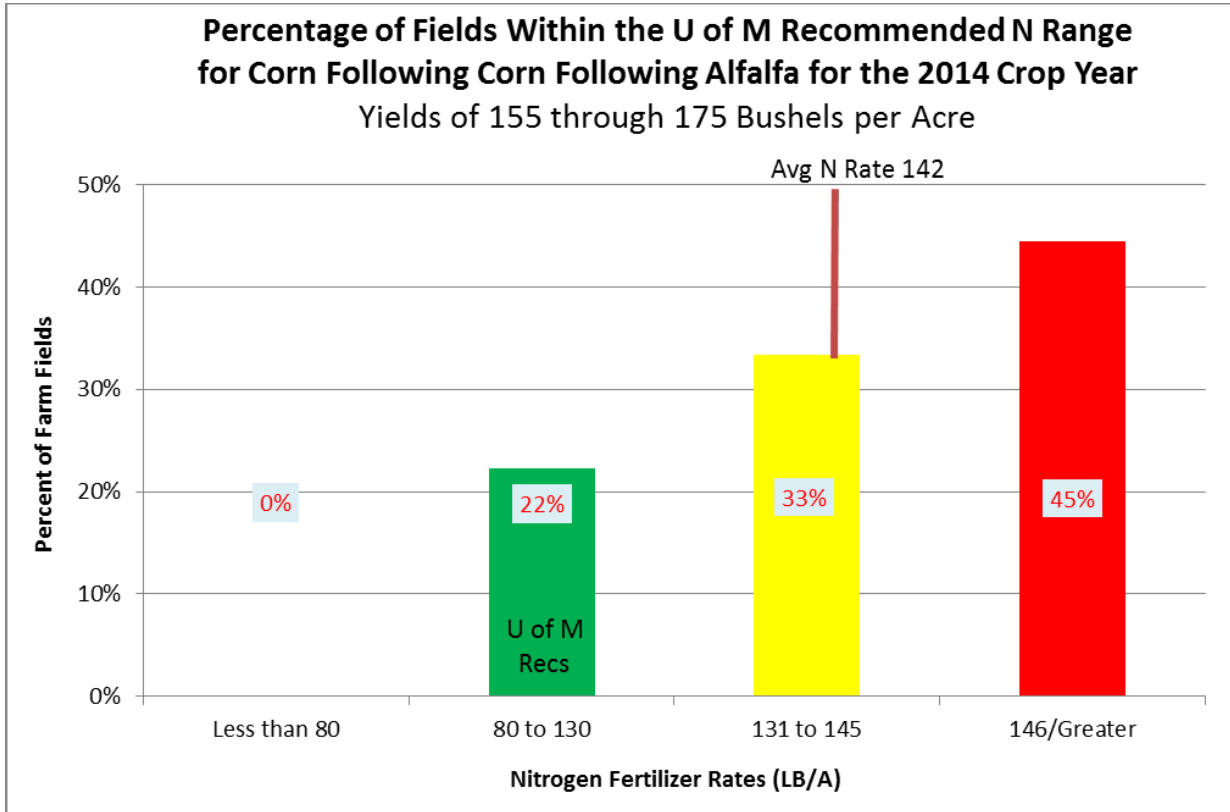


Figure 134. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2014: 9 fields.

Table 114. 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 2014 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	168	165	169
Avg N Rate LB/A	No Data	113	140	159

Figure 135 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 115 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 135.

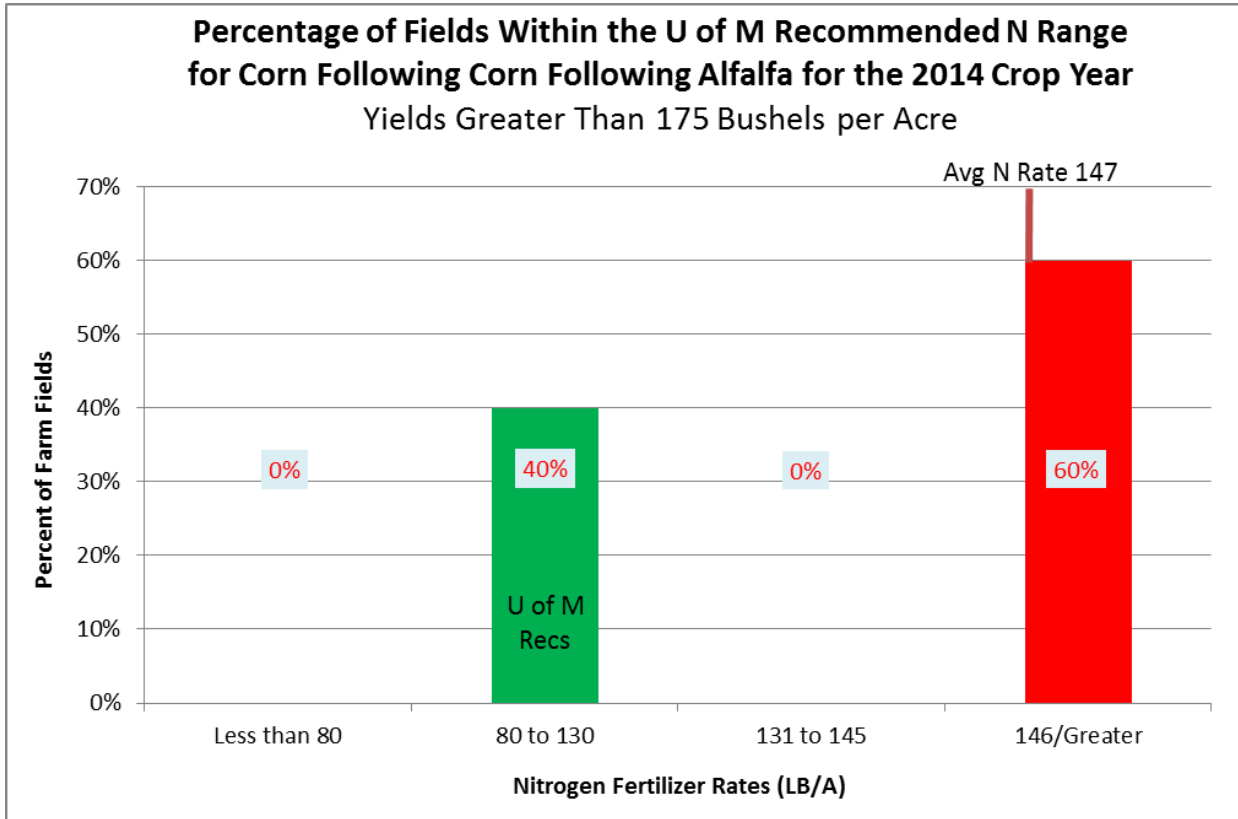


Figure 135. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SE BMP region for 2014: 10 fields.

Table 115. 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 2014 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	182	No Data	188
Avg N Rate LB/A	No Data	124	No Data	162

South Central Region: Corn Following Corn Following Alfalfa

Figure 136 details the distribution of nitrogen fertilizer rates in the SC 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 116 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 136.

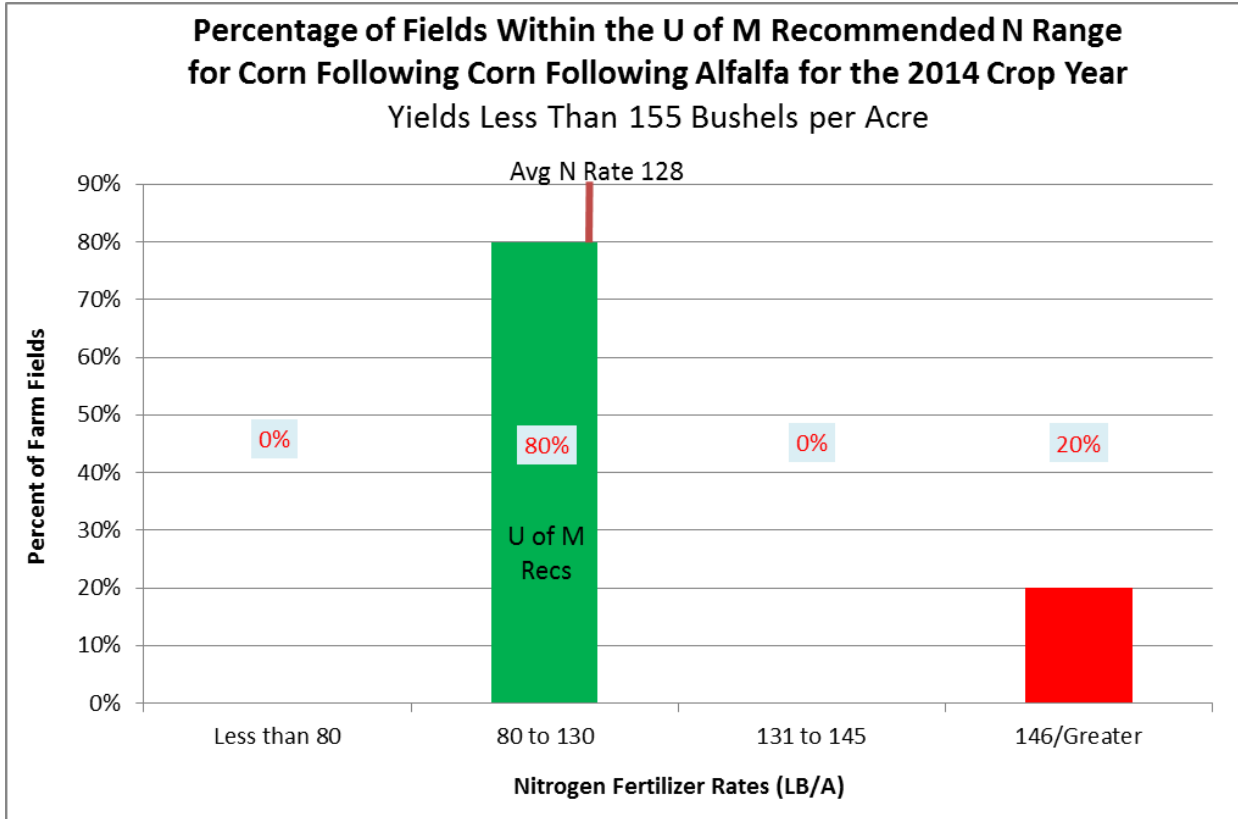


Figure 136. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the SC BMP region for 2014: 5 fields.

Table 116. 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 2014 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	140	No Data	150
Avg N Rate LB/A	No Data	114	No Data	181

Figure 137 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 117 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 137.

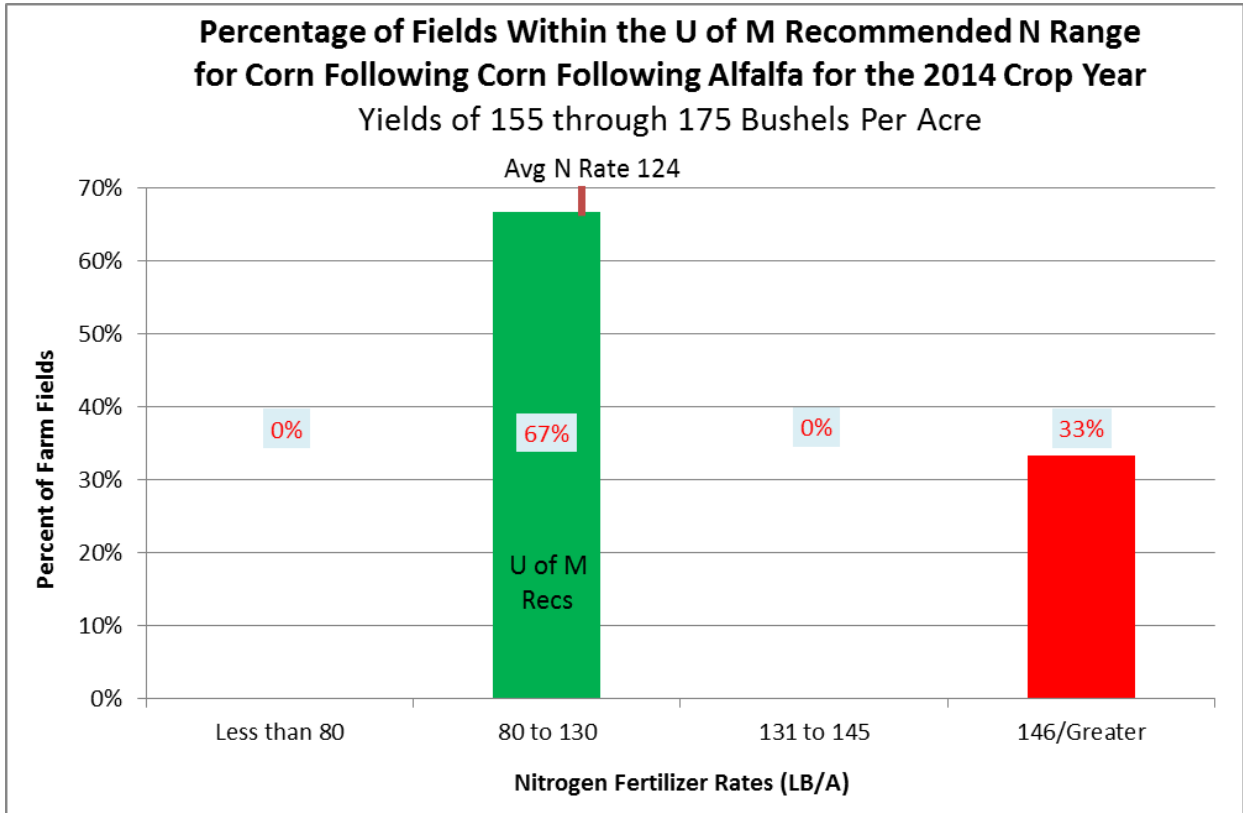


Figure 137. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SC BMP region for 2014: 6 fields.

Table 117. 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 2014 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	163	No Data	168
Avg N Rate LB/A	No Data	109	No Data	155

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

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 for fields with yields less than 155 bushels per acre.

Figure 138 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 118 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 138.

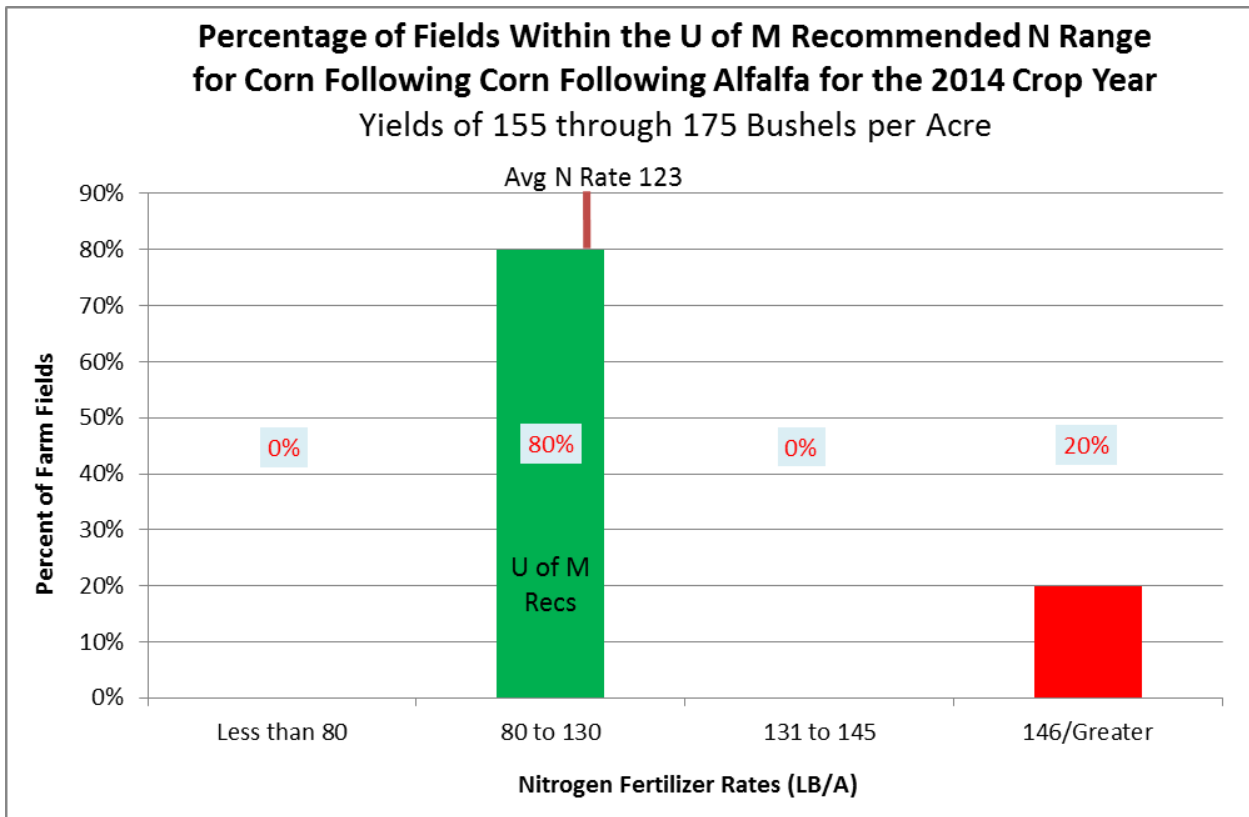


Figure 138. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the SW BMP region for 2014: 5 fields.

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 2014 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	166	No Data	165
Avg N Rate LB/A	No Data	111	No Data	170

Figure 139 details the distribution of nitrogen fertilizer rates in the SW 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.

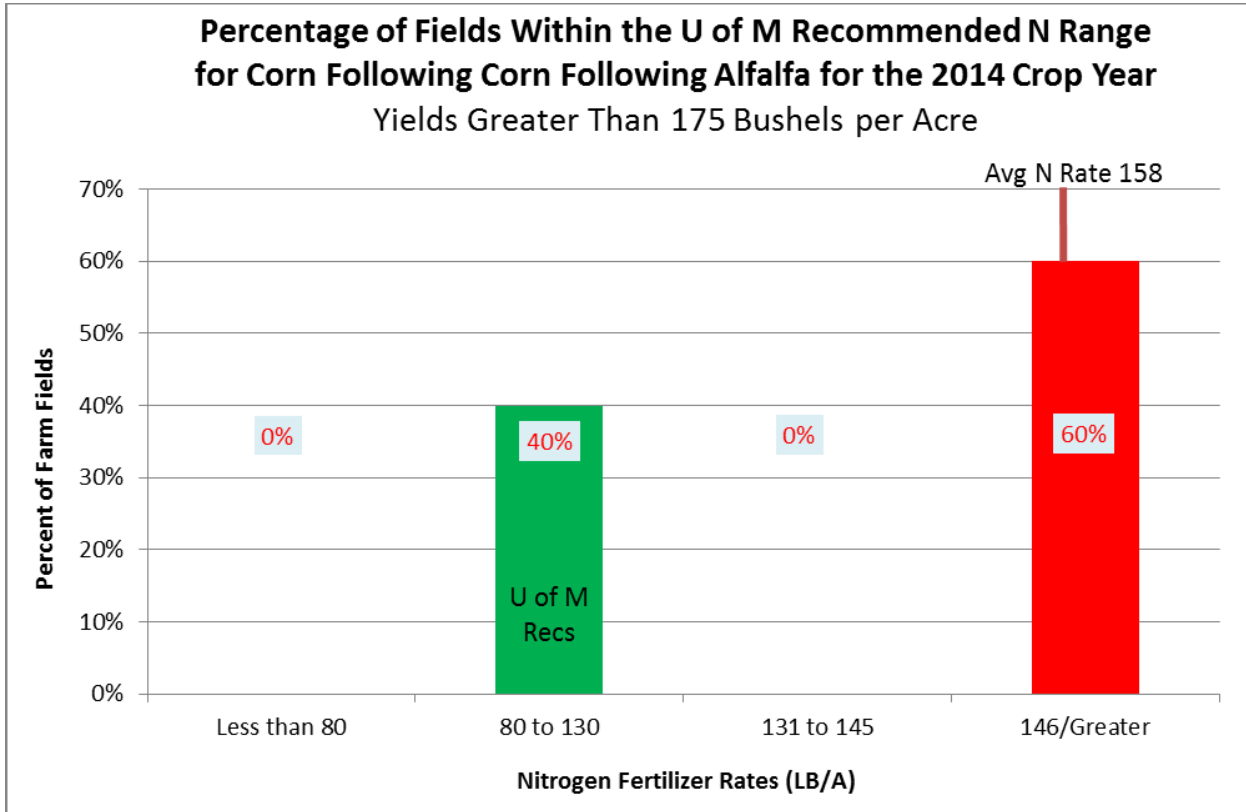


Figure 139. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields greater than 175 bushels per acre in the SW BMP region for 2014: 5 fields.

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 2014 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	185	No Data	203
Avg N Rate LB/A	No Data	113	No Data	188

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 140 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 120 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 140.

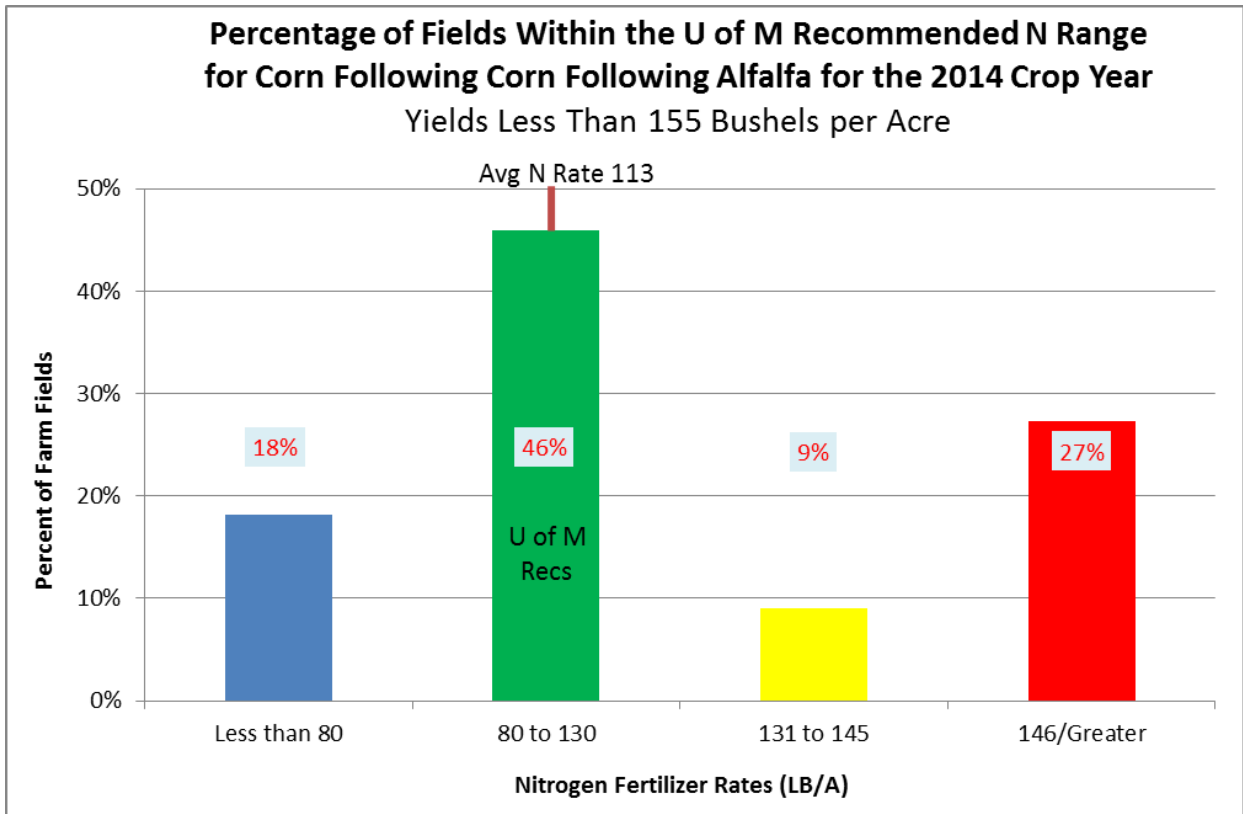


Figure 140. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2014: 11 fields.

Table 120. 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 2014 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	123	126	120	121
Avg N Rate LB/A	65	100	136	160

Figure 141 details the distribution of nitrogen fertilizer rates in the IRR 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 121 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 141.

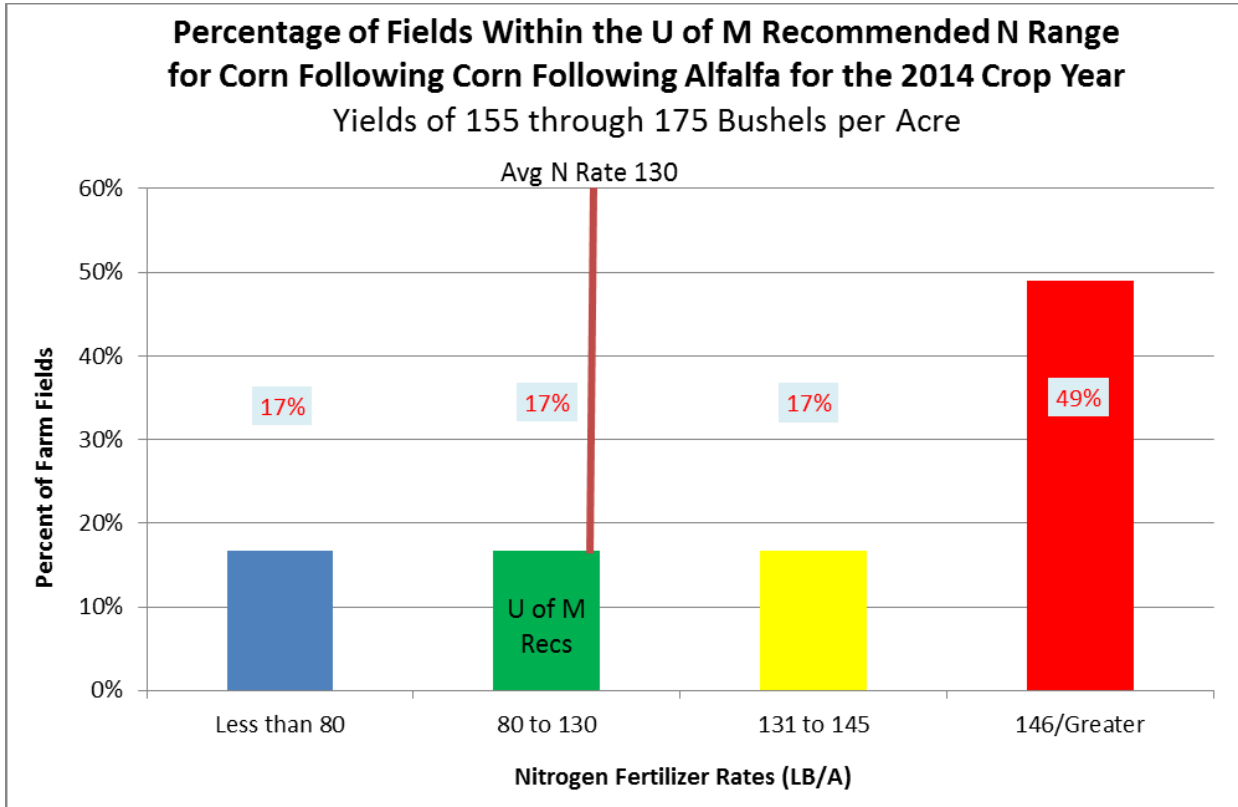


Figure 141. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa with yields of 155 through 175 bushels per acre in the IRR BMP region for 2014: 6 fields.

Table 121. 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 2014 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	160	160	163	164
Avg N Rate LB/A	45	130	140	155

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

Statewide: Corn Following Alfalfa

Figure 142 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 122 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 142.

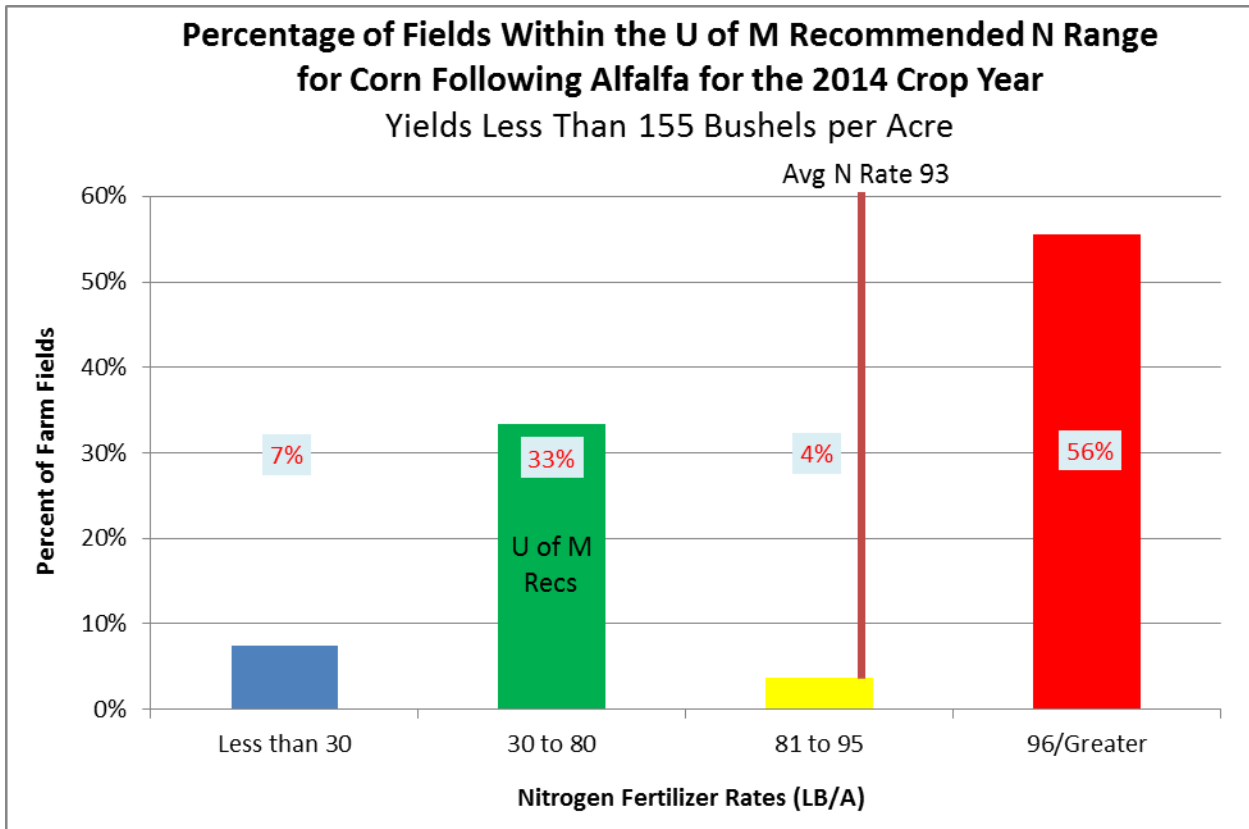


Figure 142. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in Minnesota for 2014: 27 fields.

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 2014 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	125	110	120	131
Avg N Rate LB/A	18	57	95	123

Figure 143 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 123 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 143.

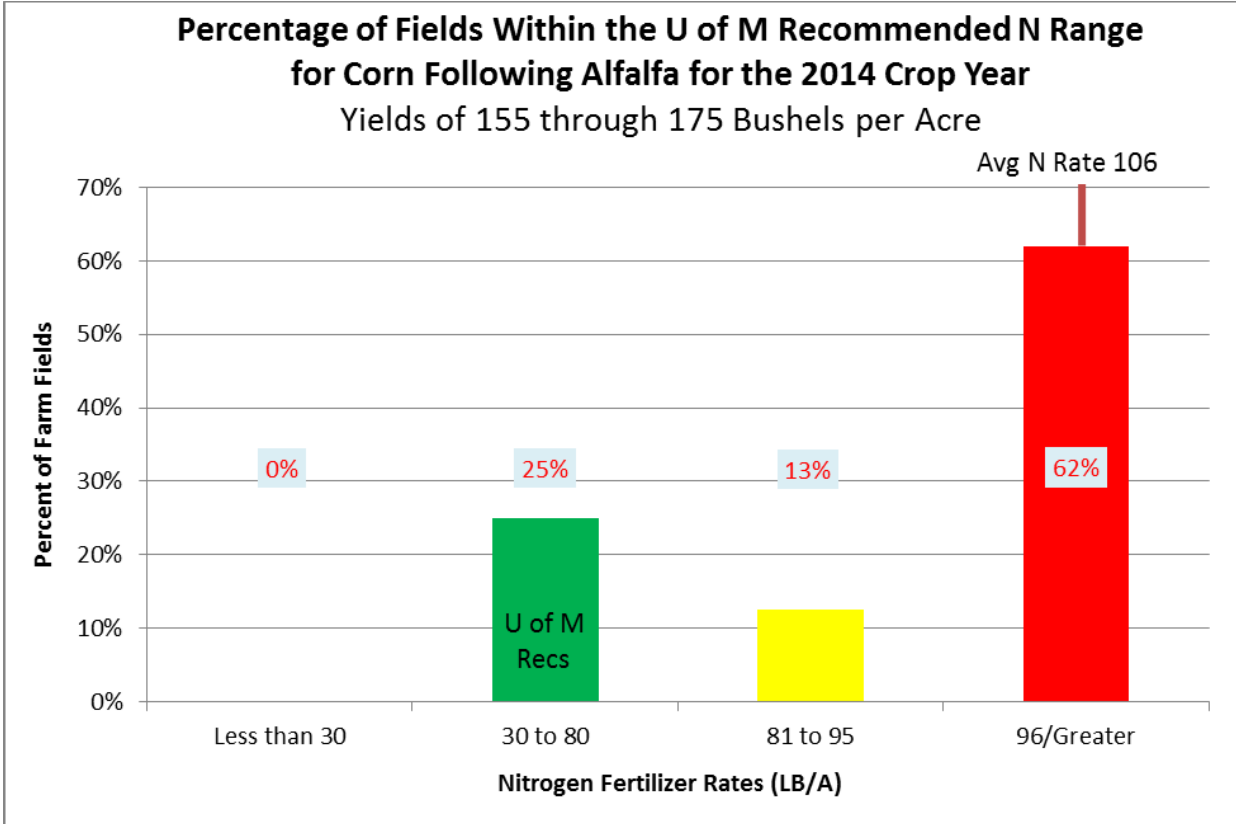


Figure 143. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in Minnesota for 2014: 16 fields.

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 2014 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	170	174	162
Avg N Rate LB/A	No Data	51	95	130

Figure 144 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 124 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 144.

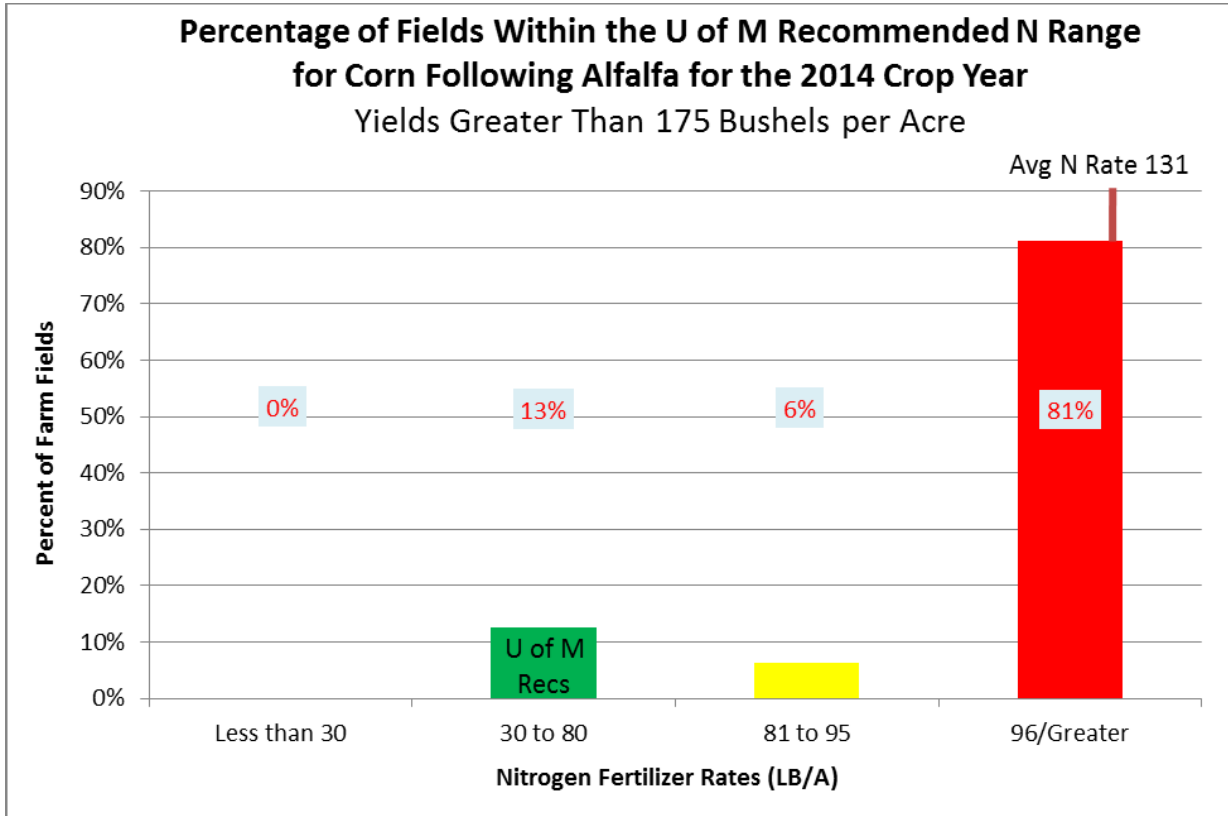


Figure 144. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields greater than 175 bushels per acre in Minnesota for 2014: 16 fields.

Table 124. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 bushels per acre for the 2014 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	193	200	187
Avg N Rate LB/A	No Data	68	85	144

Southeastern Region: Corn Following Alfalfa

Figure 145 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 125 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 145.

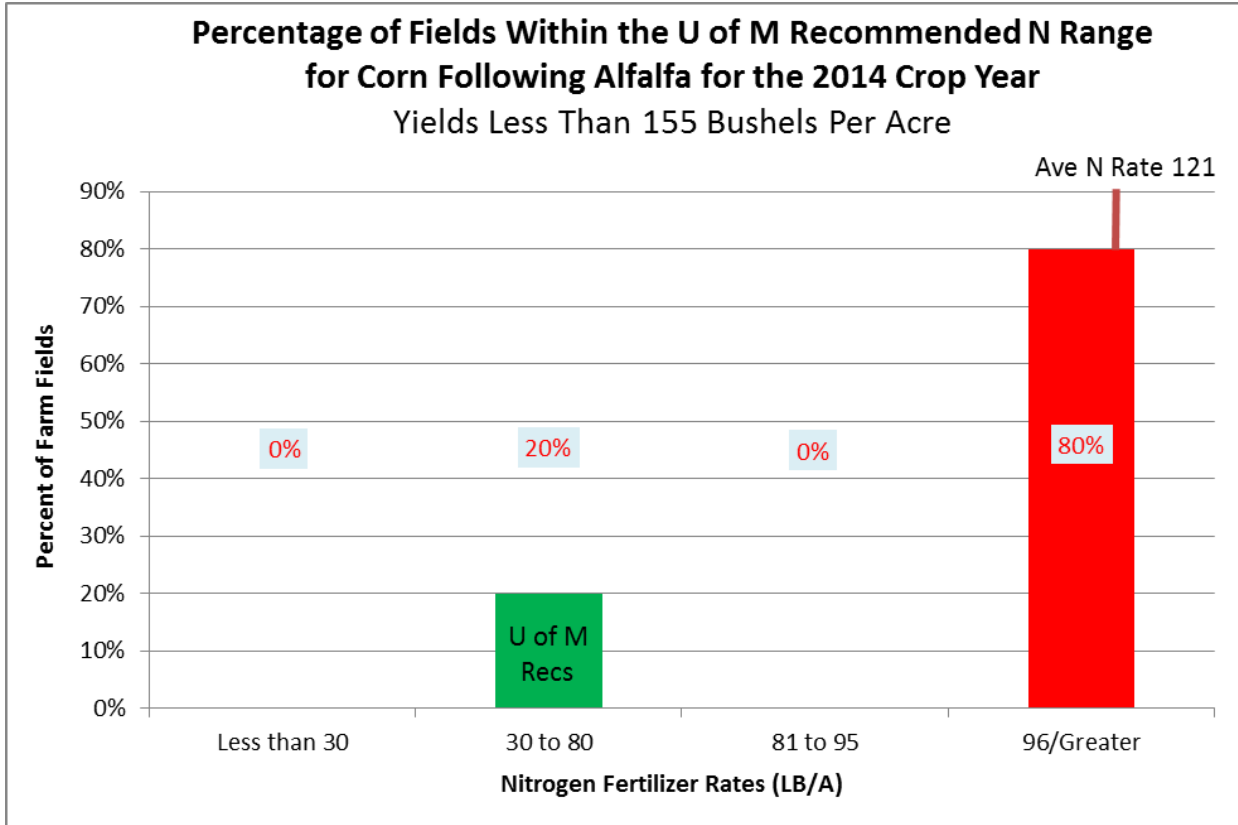


Figure 145. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 per acre in the SE BMP region for 2014: 5 fields.

Table 125. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields less than 155 per acre for the 2014 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	150	No Data	136
Avg N Rate LB/A	No Data	60	No Data	136

Figure 146 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 126 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 146.

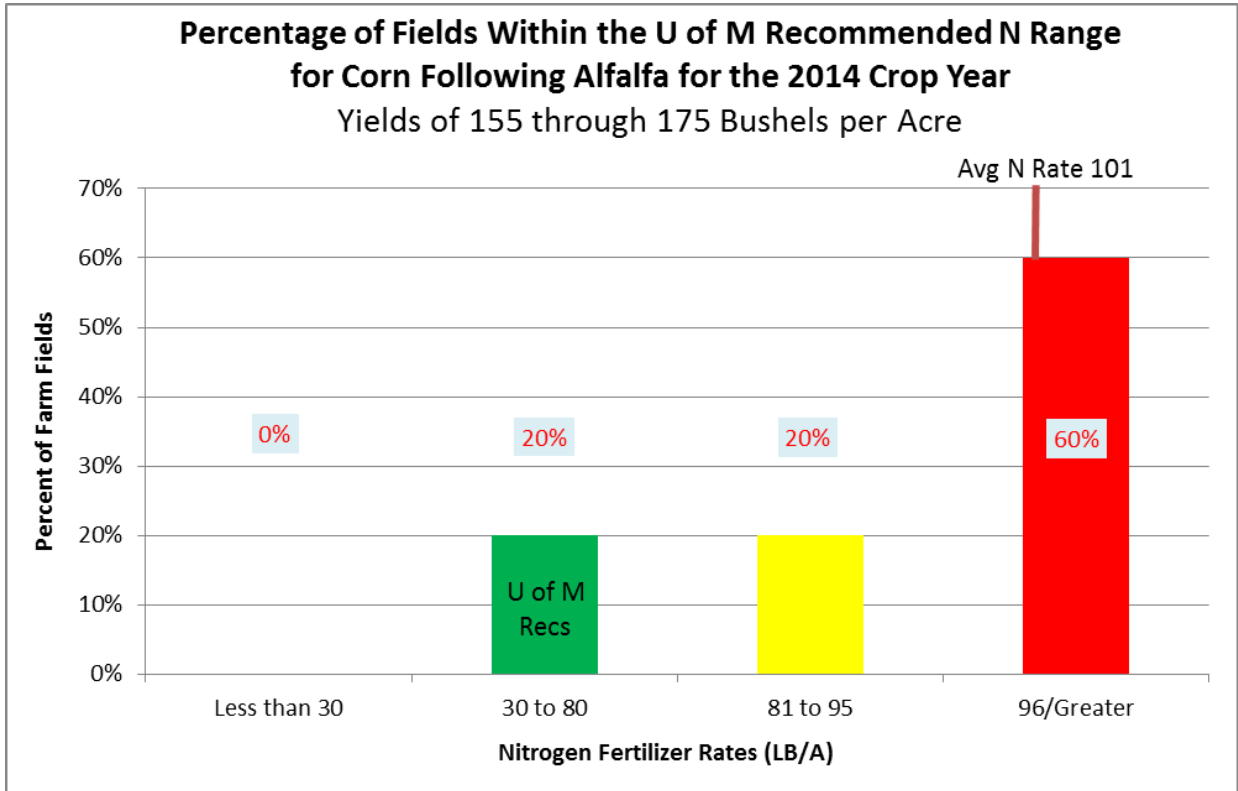


Figure 146. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields of 155 through 175 bushels per acre in the SE BMP region for 2014: 5 fields.

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 2014 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	175	174	168
Avg N Rate LB/A	No Data	30	95	127

Figure 147 details the distribution of nitrogen fertilizer rates in the SE BMP region 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.

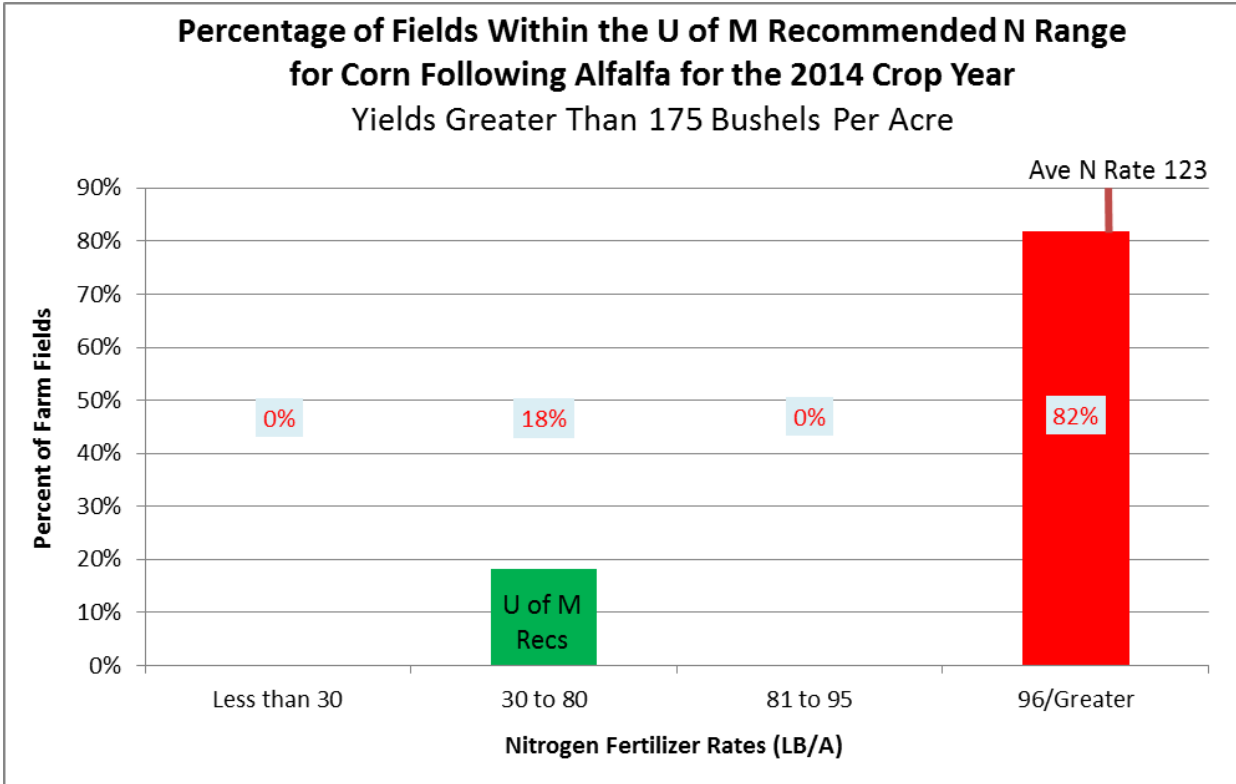


Figure 147. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields greater than 175 per acre in the SE BMP region for 2014: 11 fields.

Table 127. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields greater than 175 per acre for the 2014 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	193	No Data	188
Avg N Rate LB/A	No Data	68	No Data	135

South Central Region: Corn Following Alfalfa

Less than five farmers reported planting corn following alfalfa 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 Alfalfa

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

Figure 148 details the distribution of nitrogen fertilizer rates in the SW BMP region for corn following alfalfa with yields between 155 and 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.

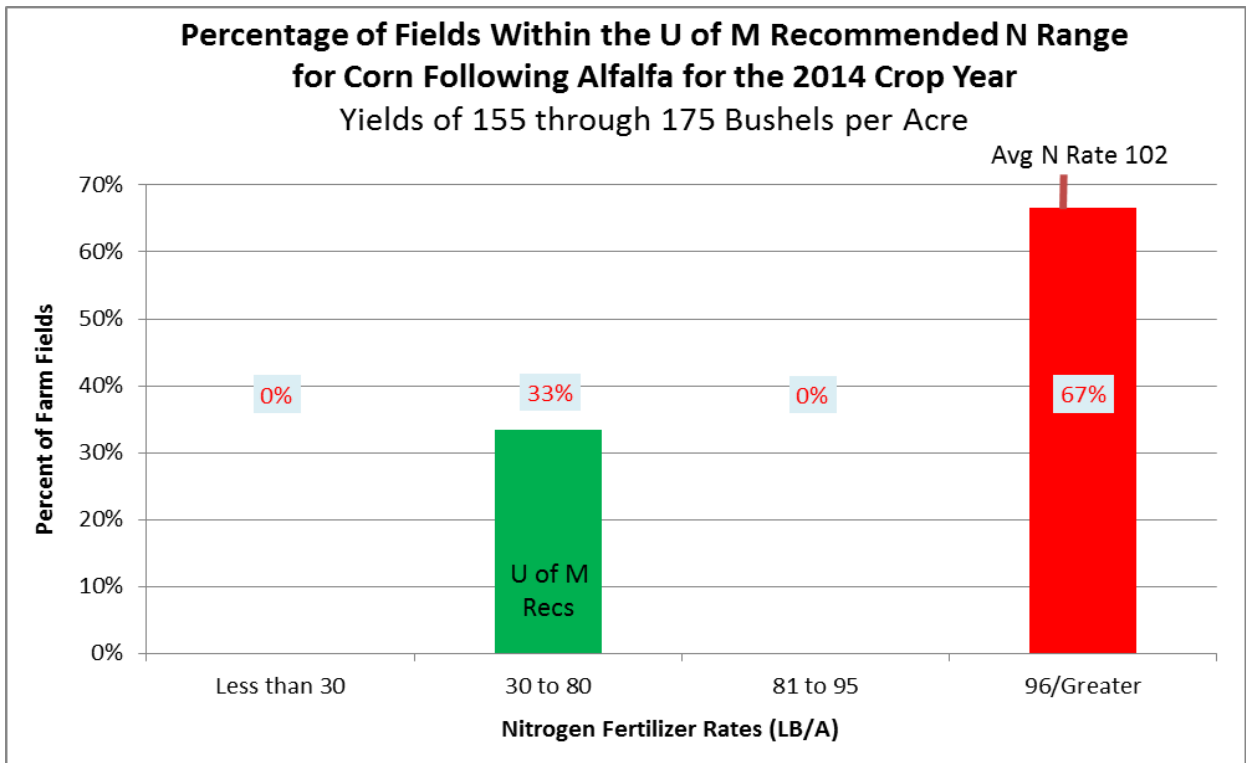


Figure 148. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields between 155 and 175 bushels per acre in the SW BMP region for 2014: 6 fields.

Table 128. Nitrogen fertilizer rates and associated yields for corn following alfalfa on all fields with yields between 155 and 175 bushels per acre for the 2014 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	165	No Data	161
Avg N Rate LB/A	No Data	47	No Data	130

Less than five farmers reported planting corn following alfalfa in the SW BMP region for fields 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 149 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 129 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 149.

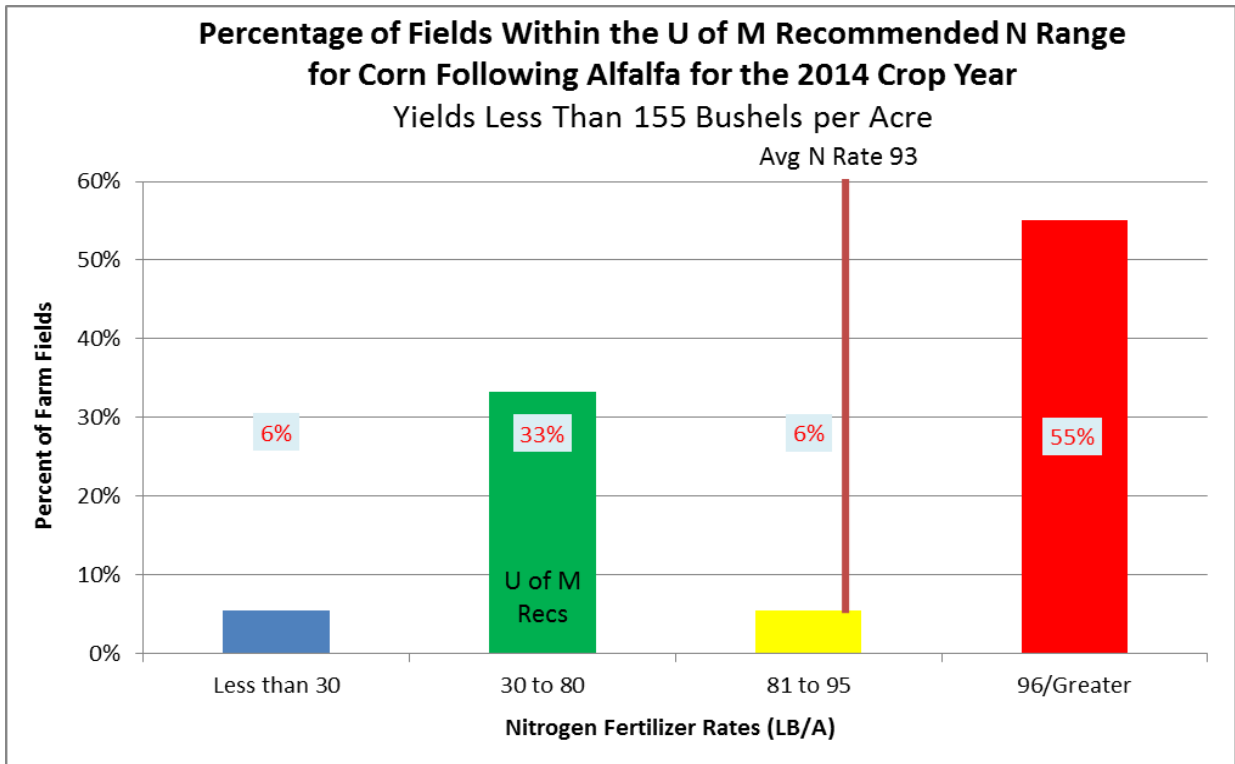


Figure 149. Percentage of fields within the U of M recommended N range for corn following alfalfa with yields less than 155 bushels per acre in the IRR BMP region for 2014: 18 fields.

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 2014 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	110	108	120	127
Avg N Rate LB/A	18	58	95	121

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

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

Statewide: Corn Following Small Grains

Figure 150 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 130 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 150.

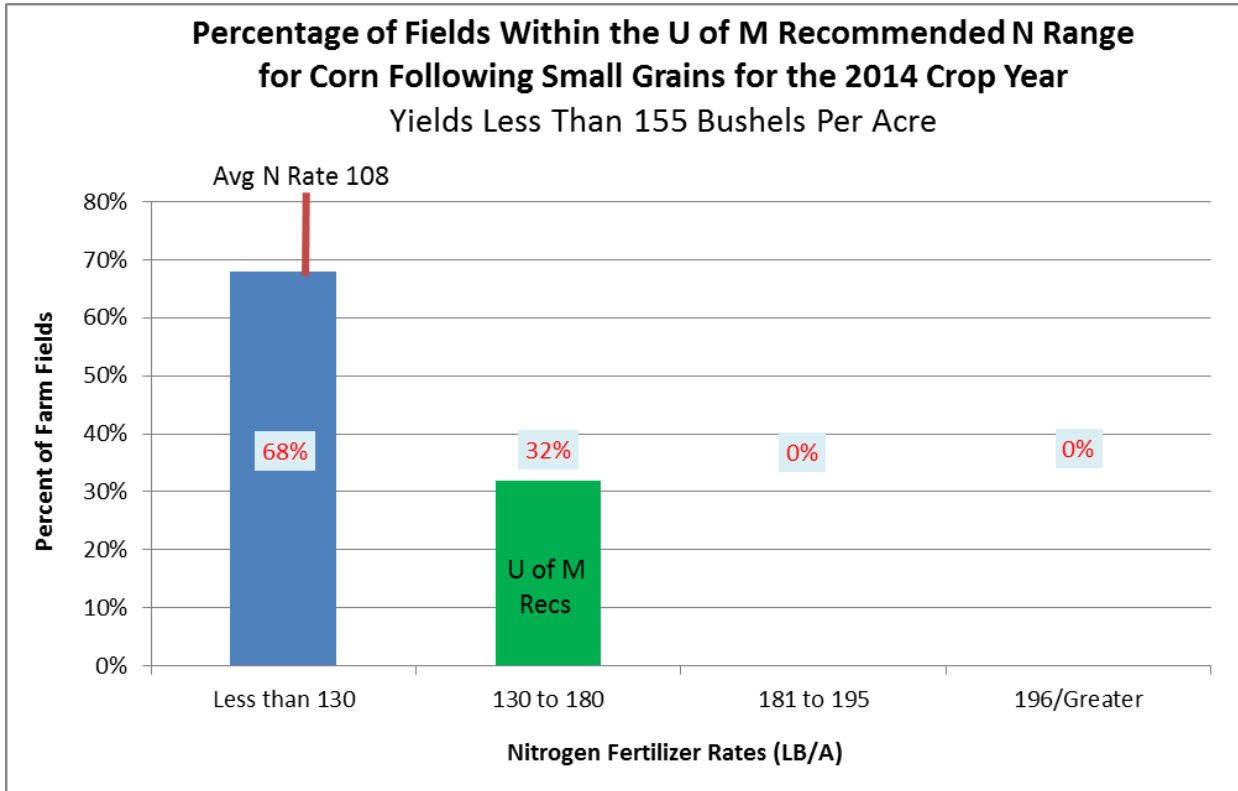


Figure 150. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in Minnesota for 2014: 25 fields.

Table 130. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2014 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	119	134	No Data	No Data
Avg N Rate LB/A	86	155	No Data	No Data

Figure 151 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 131 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 151.

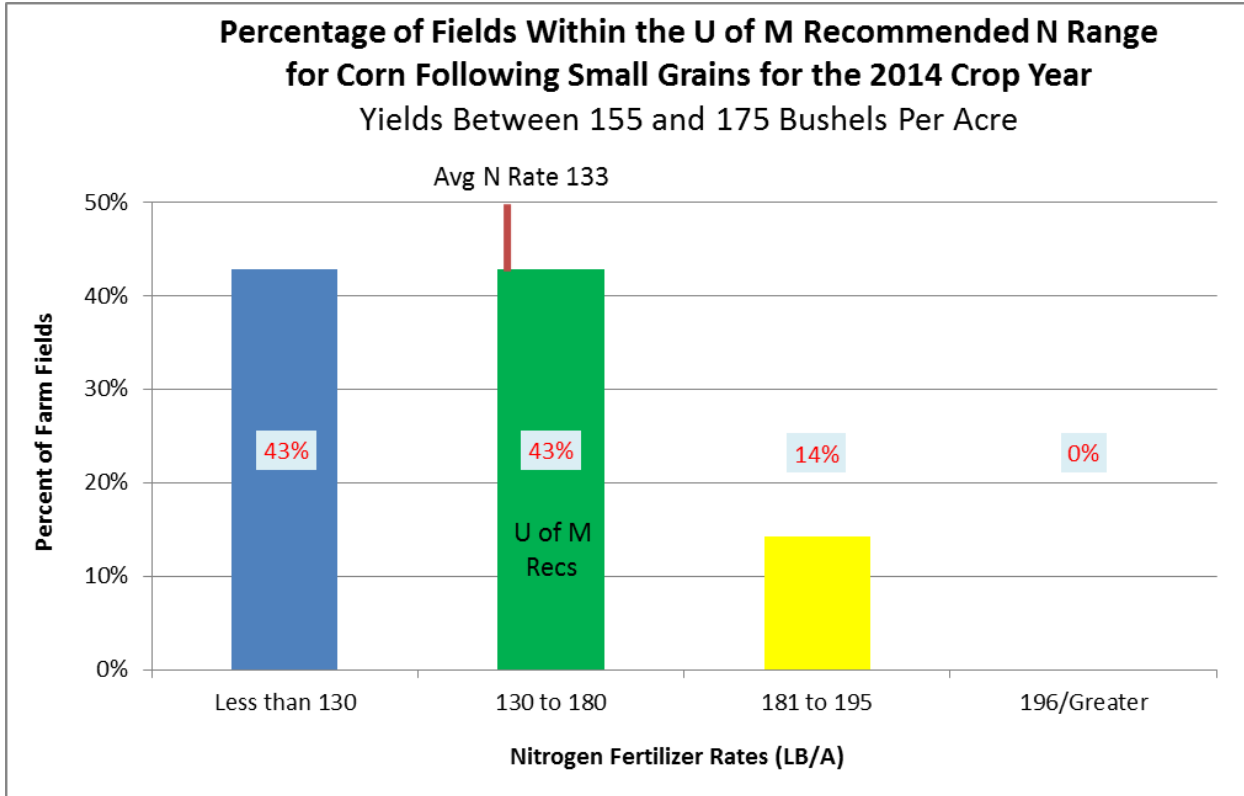


Figure 151. Percentage of fields within the U of M recommended N range for corn following small grains with yields of 155 through 175 bushels per acre in Minnesota for 2014: 7 fields.

Table 131. 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 2014 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	170	175	No Data
Avg N Rate LB/A	93	155	185	No Data

Figure 152 details the distribution of nitrogen fertilizer rates in Minnesota for corn following small grains with yields greater than 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.

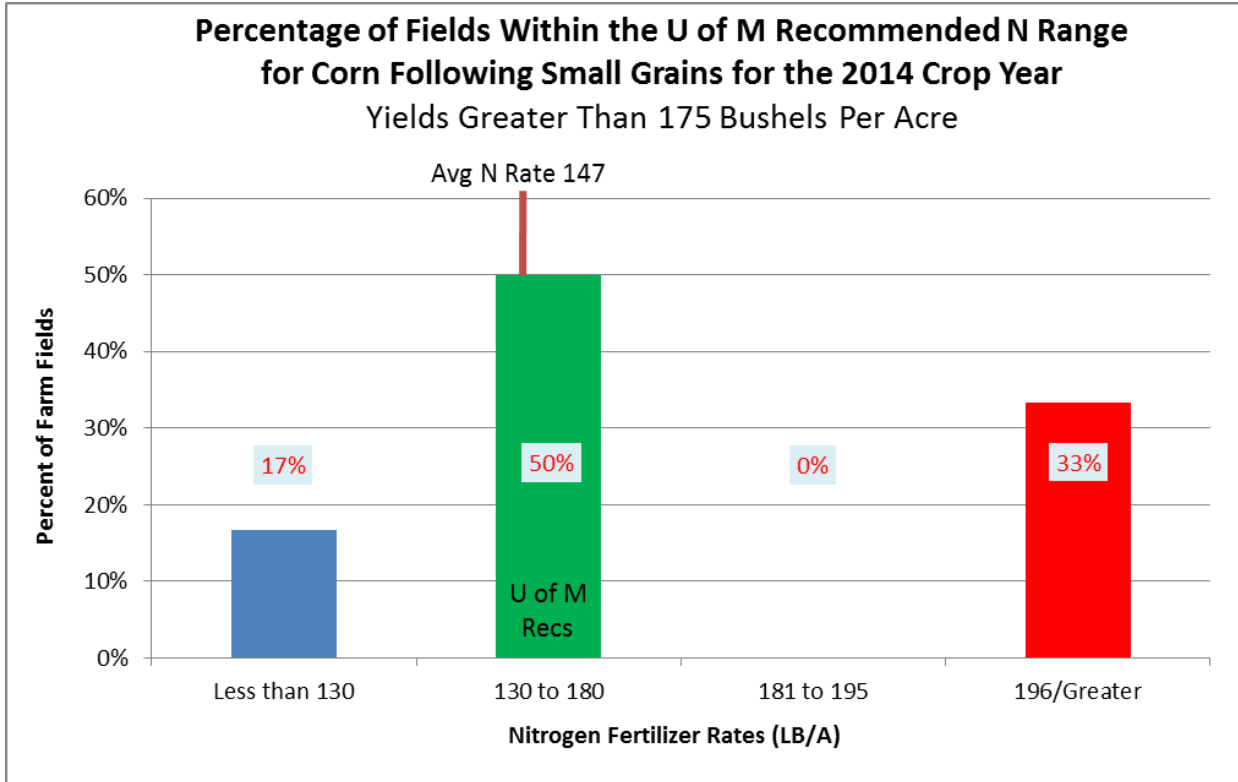


Figure 152. Percentage of fields within the U of M recommended N range for corn following small grains with yields greater than 175 bushels per acre in Minnesota for 2014: 6 fields.

Table 132. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields greater than 175 bushels per acre for the 2014 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	185	183	No Data	197
Avg N Rate LB/A	20	145	No Data	213

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

Figure 153 details the distribution of nitrogen fertilizer rates in the SW 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 133 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 153.

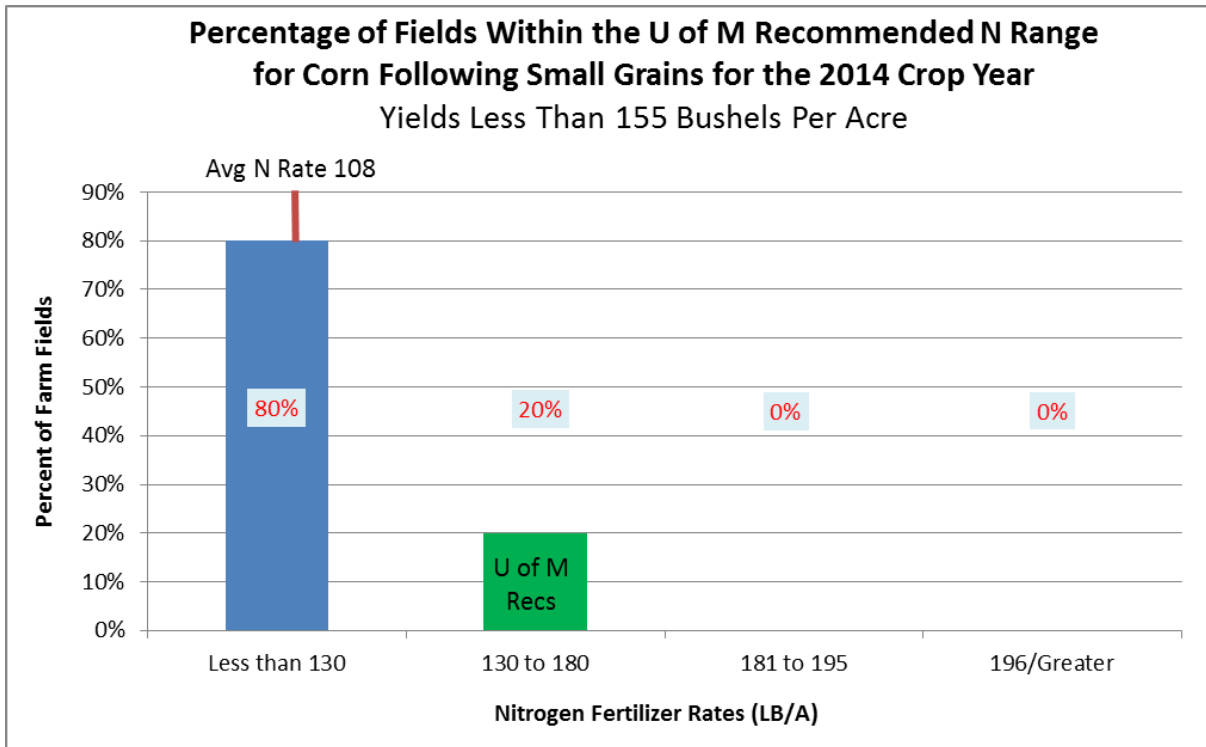


Figure 153. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the SW BMP region for 2014: 5 fields.

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 2014 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	119	150	No Data	No Data
Avg N Rate LB/A	95	160	No Data	No Data

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.

Northwestern Region: Corn Following Small Grains

Figure 154 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 134 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 154.

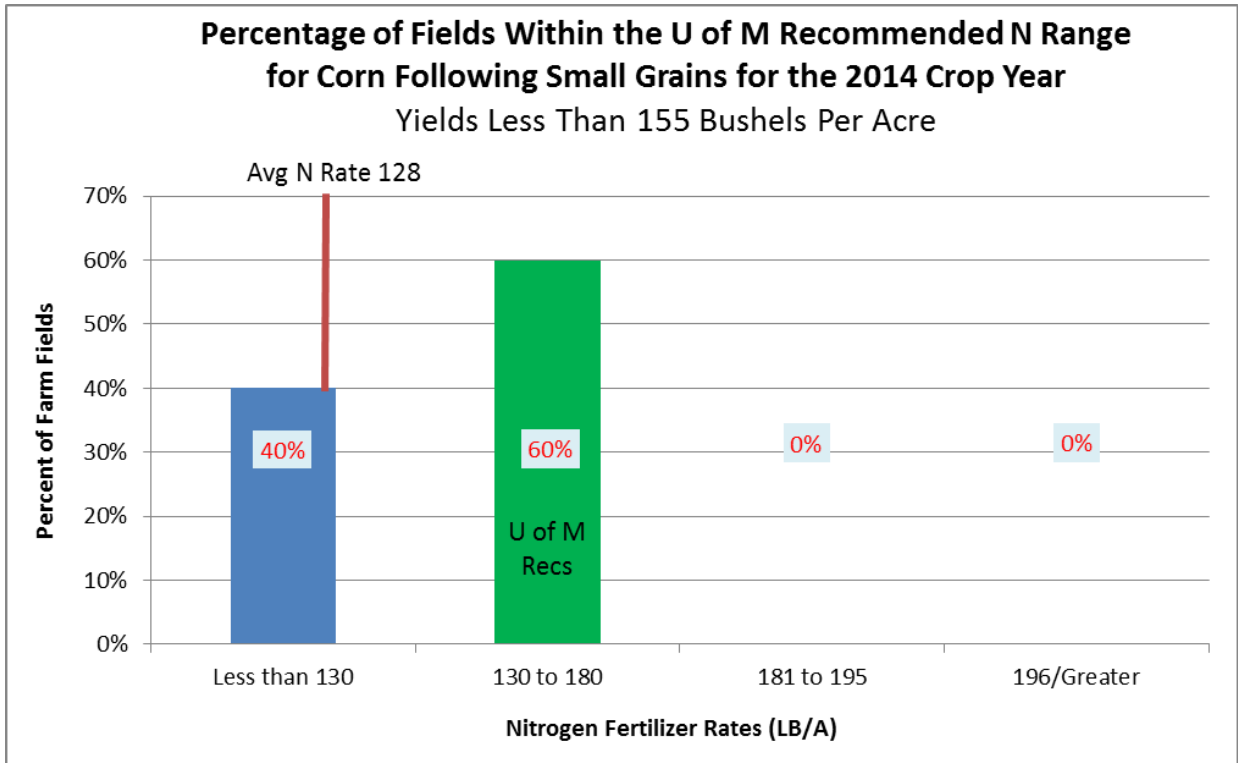


Figure 154. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the NW BMP region for 2014: 10 fields.

Table 134. Nitrogen fertilizer rates and associated yields for corn following small grains on all fields with yields less than 155 bushels per acre for the 2014 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	111	131	No Data	No Data
Avg N Rate LB/A	89	155	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 155 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 135 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 155.

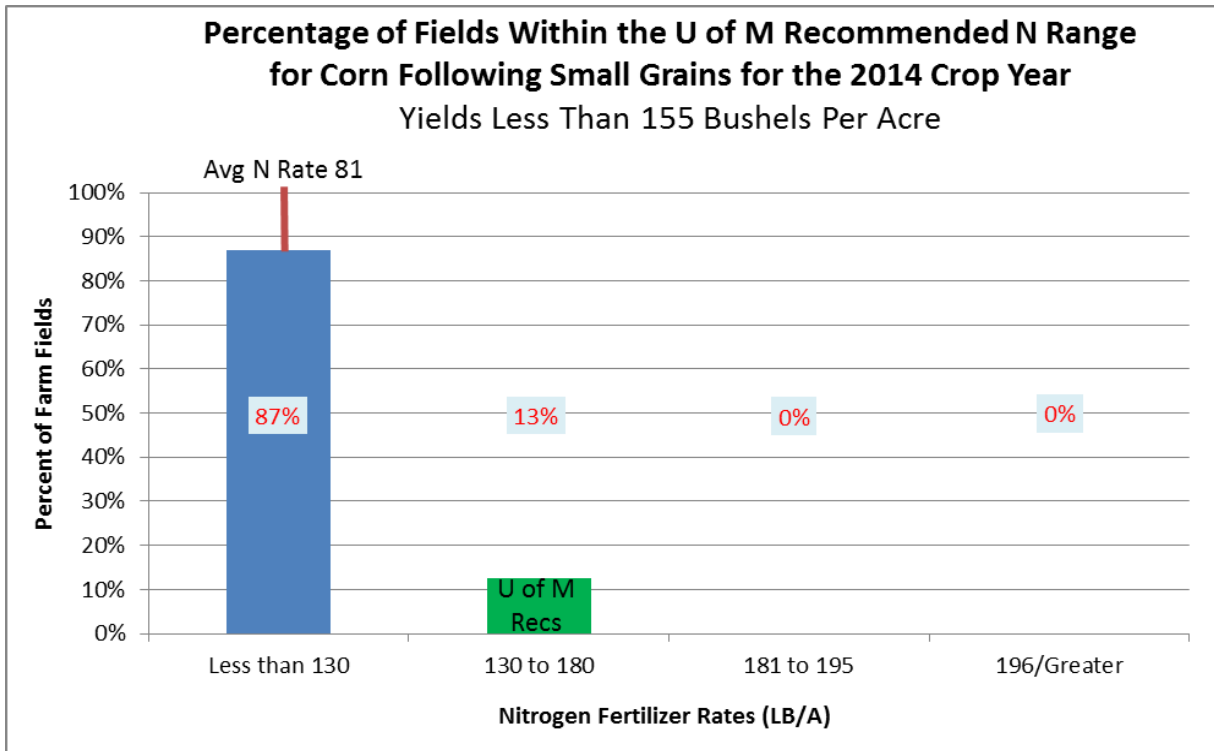


Figure 155. Percentage of fields within the U of M recommended N range for corn following small grains with yields less than 155 bushels per acre in the IRR BMP region for 2014: 8 fields.

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 2014 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	135	No Data	No Data
Avg N Rate LB/A	71	150	No Data	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 2014, and BMP region. Comparisons were made on whether the field was applied with manure or manure and commercial nitrogen fertilizer. In 2014, 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 2014 crop year, which included 2013 fall applications of manure, were included in the following analysis.

The following analysis includes five types of manure application to the 2014 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 156 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 136 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 156.

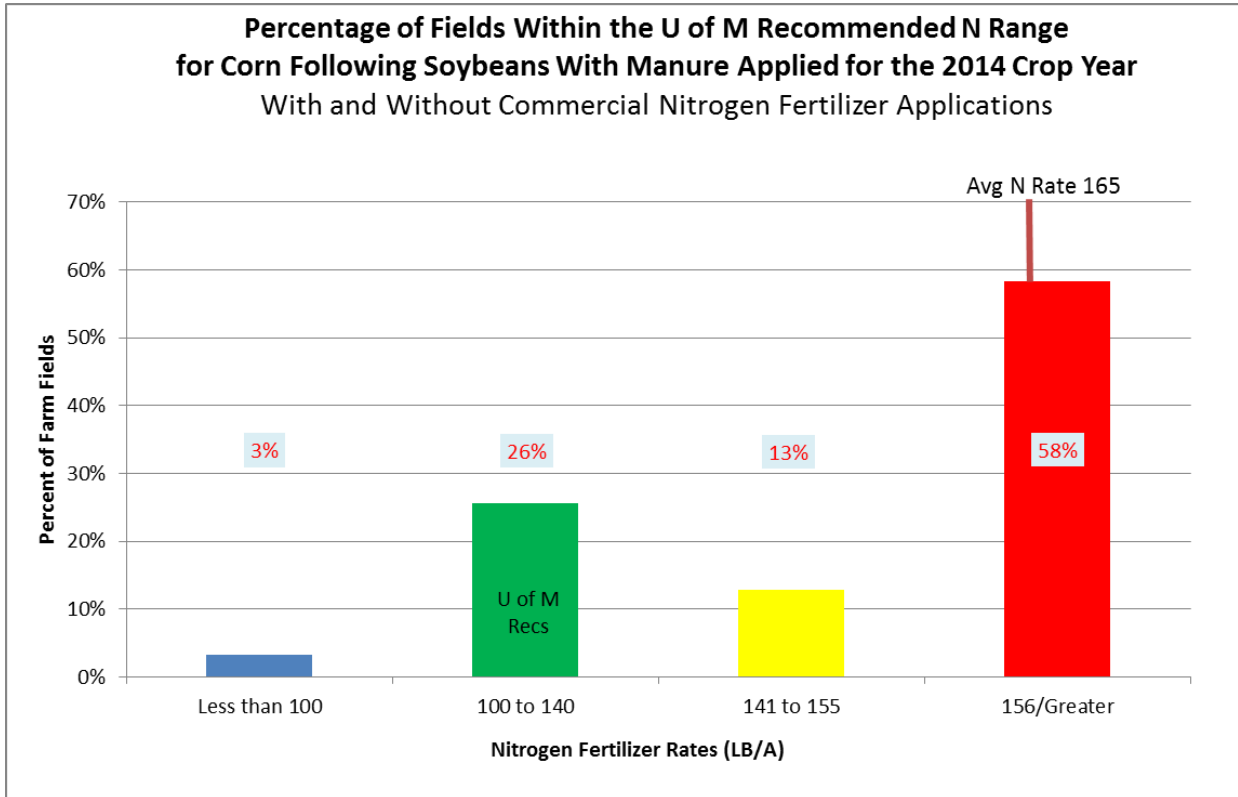


Figure 156. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2014: 125 fields.

Table 136. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	149	171	179	180
Avg N Rate LB/A	65	125	150	191

⁵ Manure is from all manure sources

Figure 157 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 137 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 157.

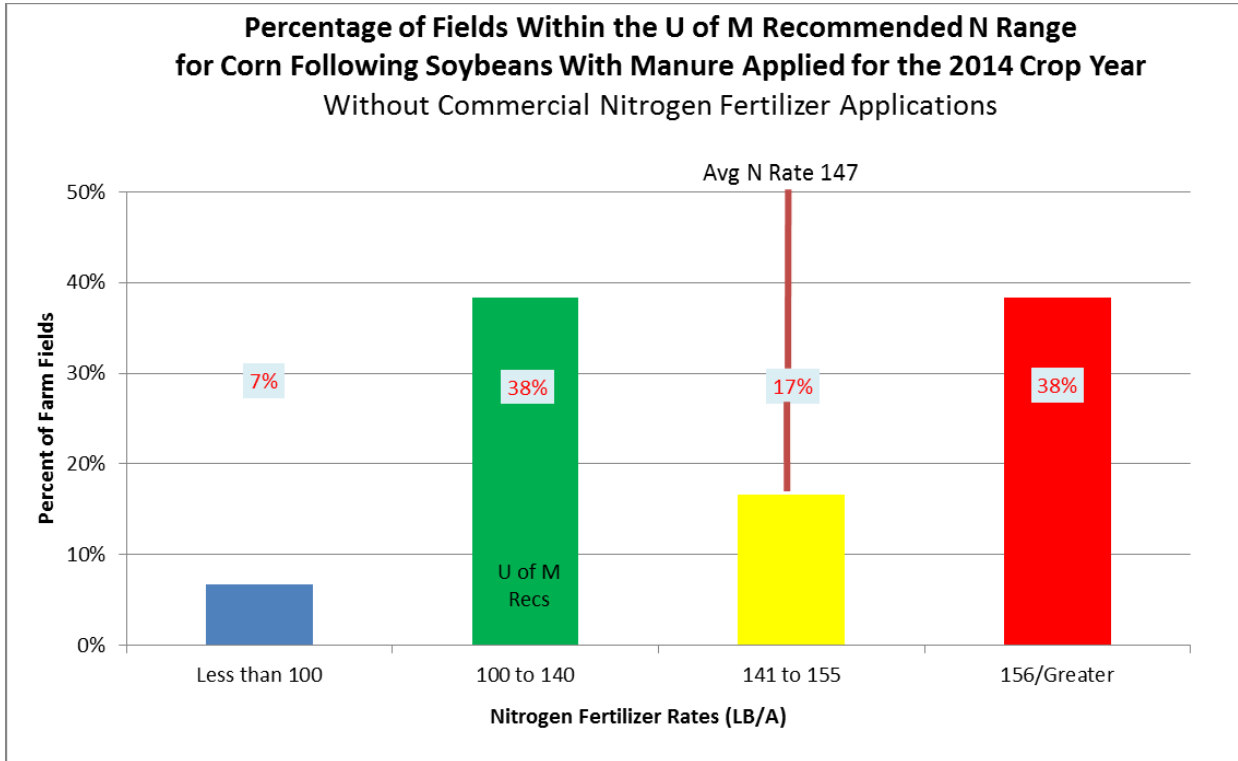


Figure 157. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in Minnesota for 2014: 60 fields.

Table 137. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2014 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	149	171	173	178
Avg N Rate LB/A	65	125	150	182

Figure 158 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 138 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 158.

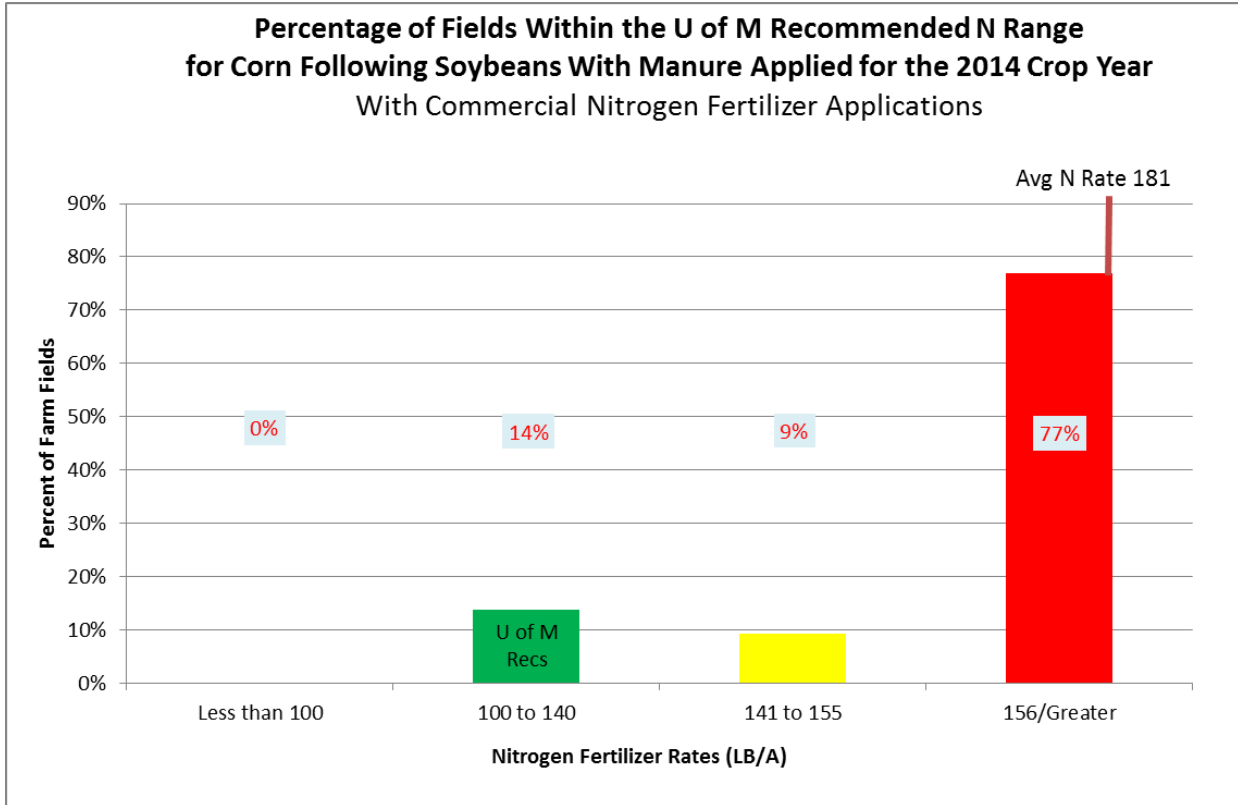


Figure 158. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in Minnesota for 2014: 65 fields.

Table 138. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2014 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	171	172	180
Avg N Rate LB/A	No Data	123	151	195

Southeastern Region: Corn Following Soybeans

Figure 159 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 139 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 159.

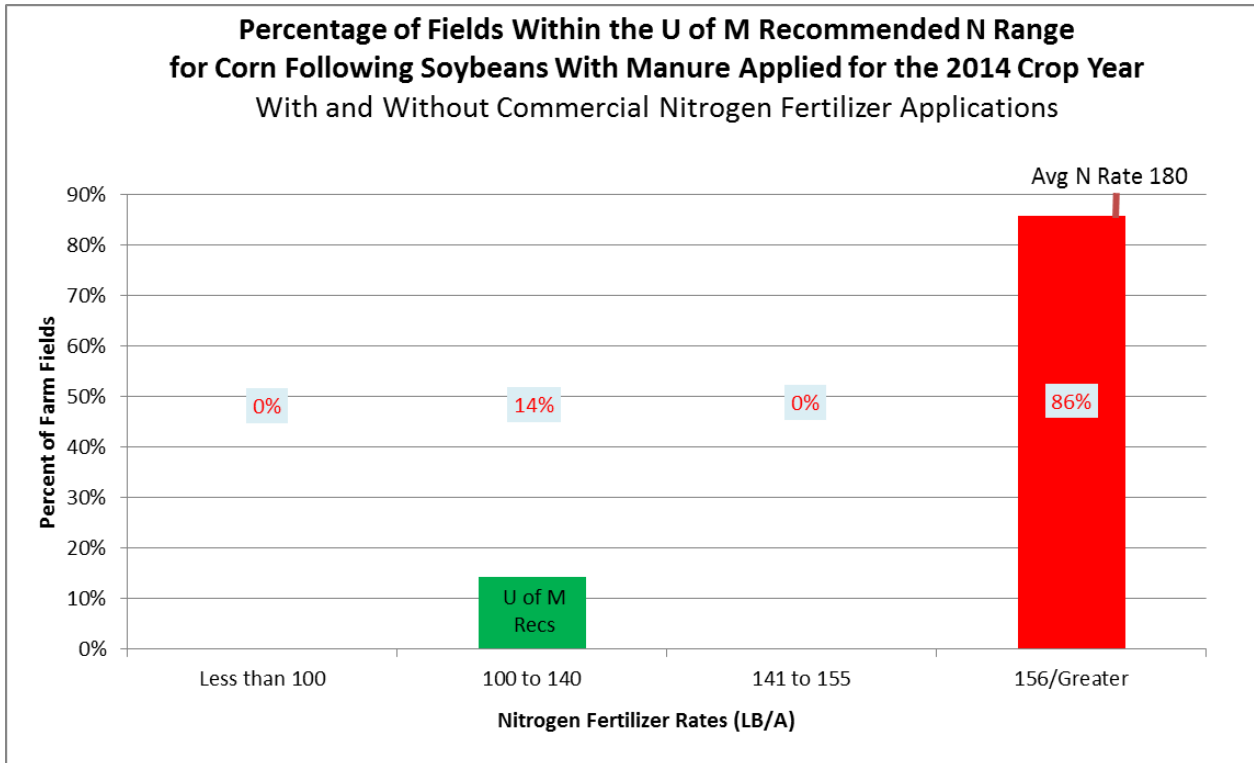


Figure 159. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2014: 8 fields

Table 139. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	224	No Data	187
Avg N Rate LB/A	No Data	100	No Data	194

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 160 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 140 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 160.

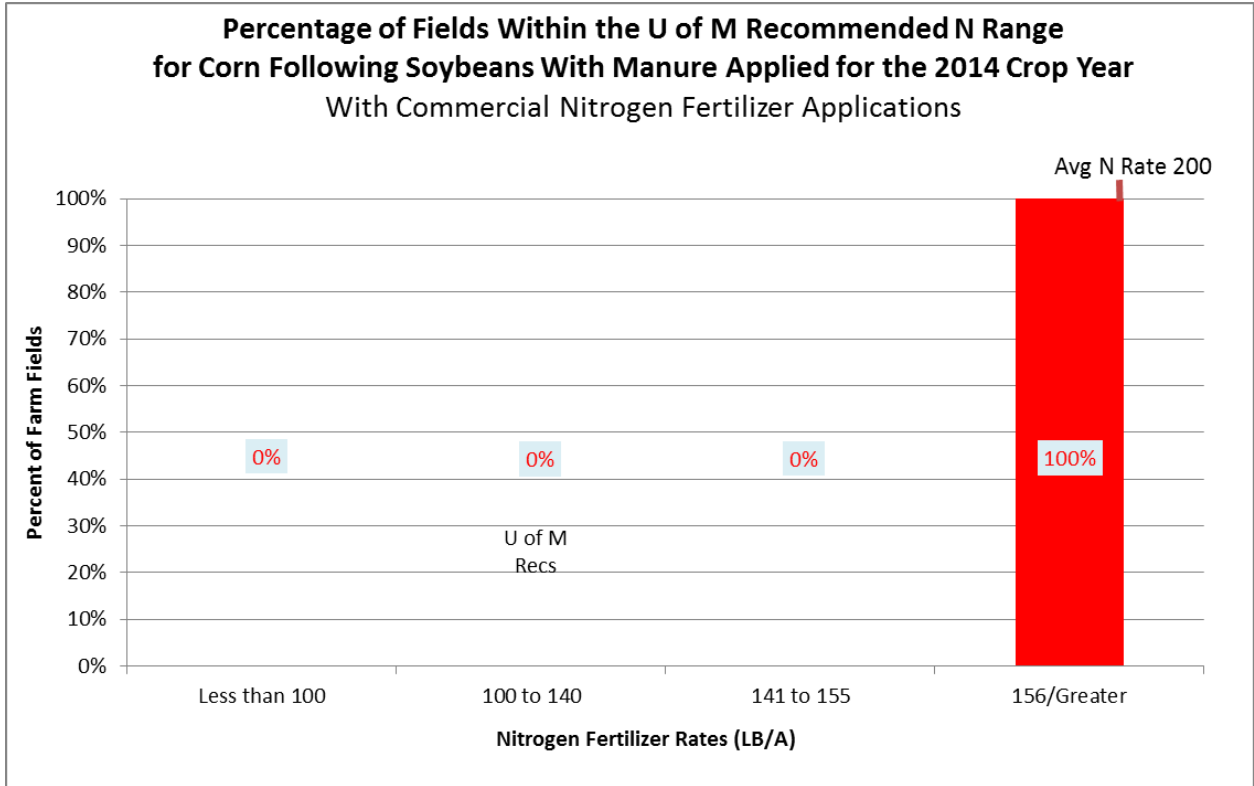


Figure 160. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2014: 5 fields

Table 140. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2014 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	186
Avg N Rate LB/A	No Data	No Data	No Data	200

South Central Region: Corn Following Soybeans

Figure 161 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 141 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 161.

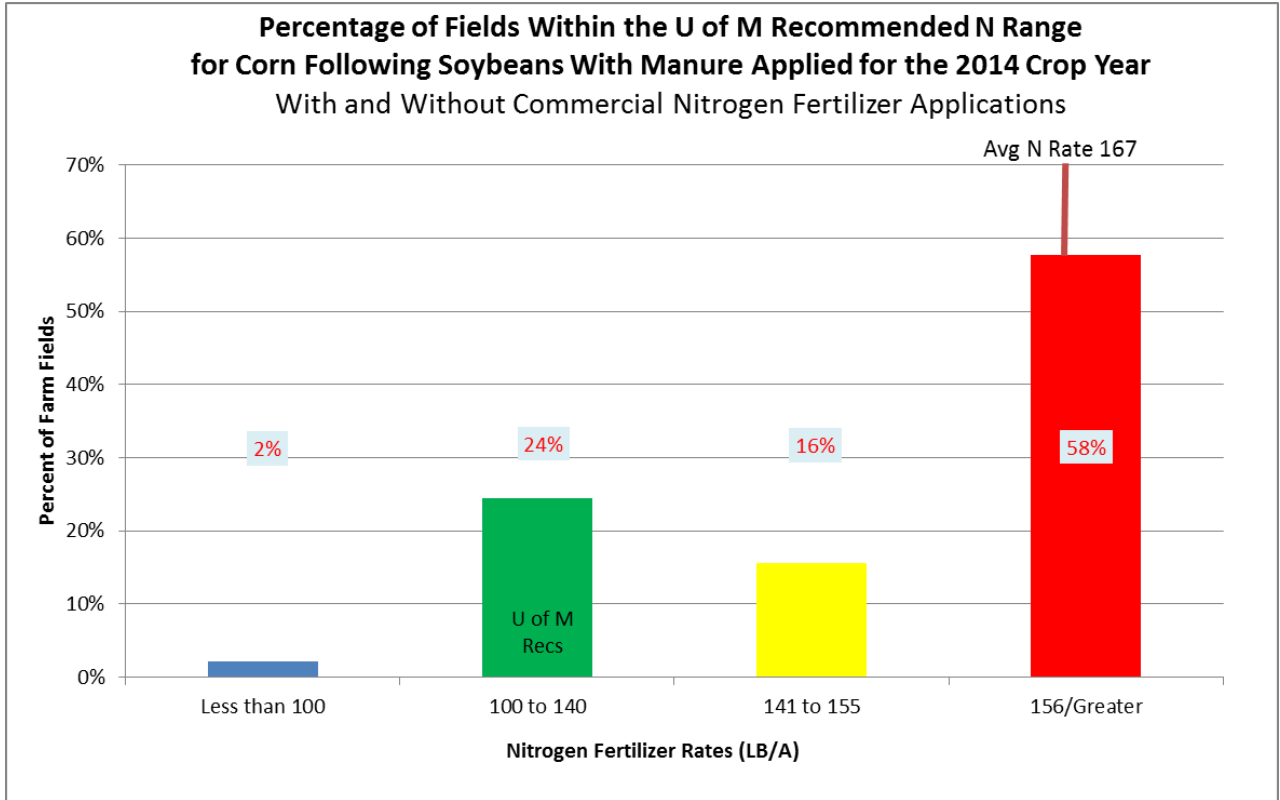


Figure 161. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 45 fields.

Table 141. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	185	174	174	181
Avg N Rate LB/A	90	123	150	193

Figure 162 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 142 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 162.

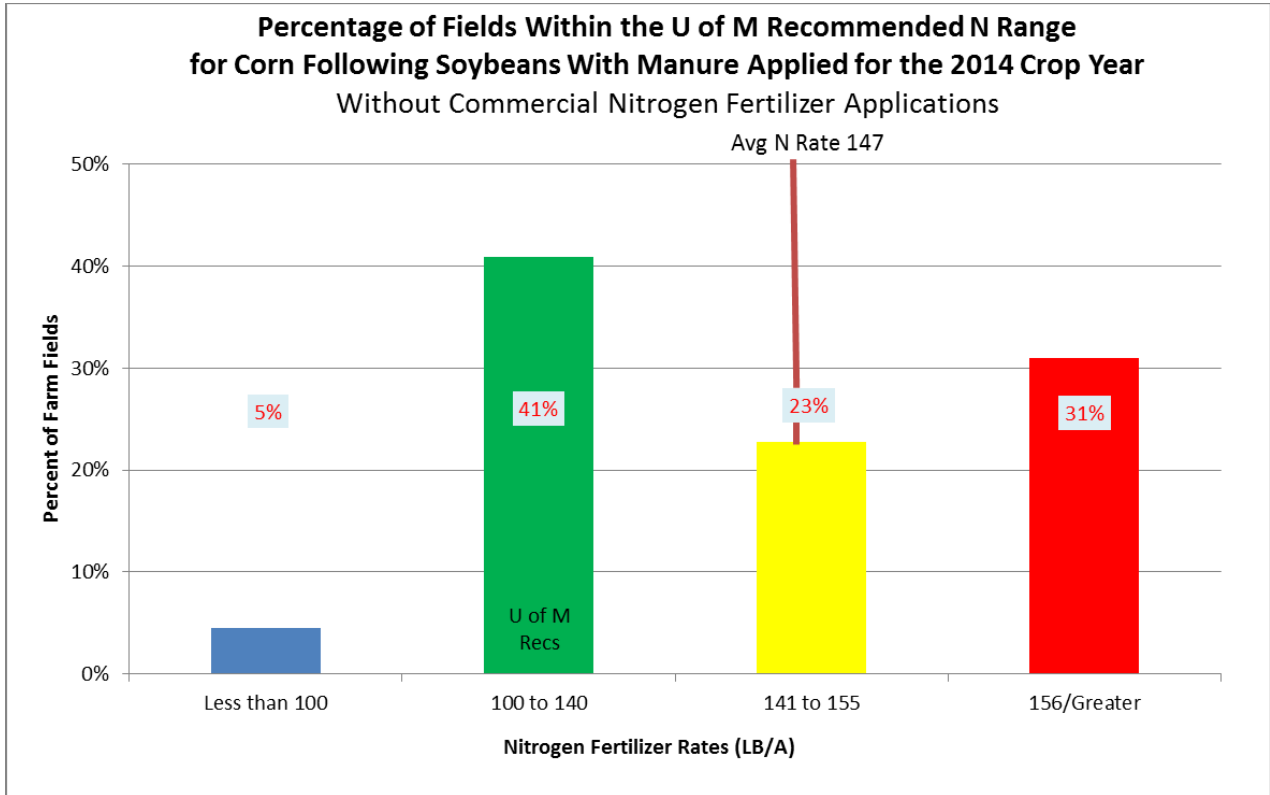


Figure 162. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2014: 22 fields.

Table 142. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2014 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	185	170	179	185
Avg N Rate LB/A	90	124	150	183

Figure 163 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 143 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 163.

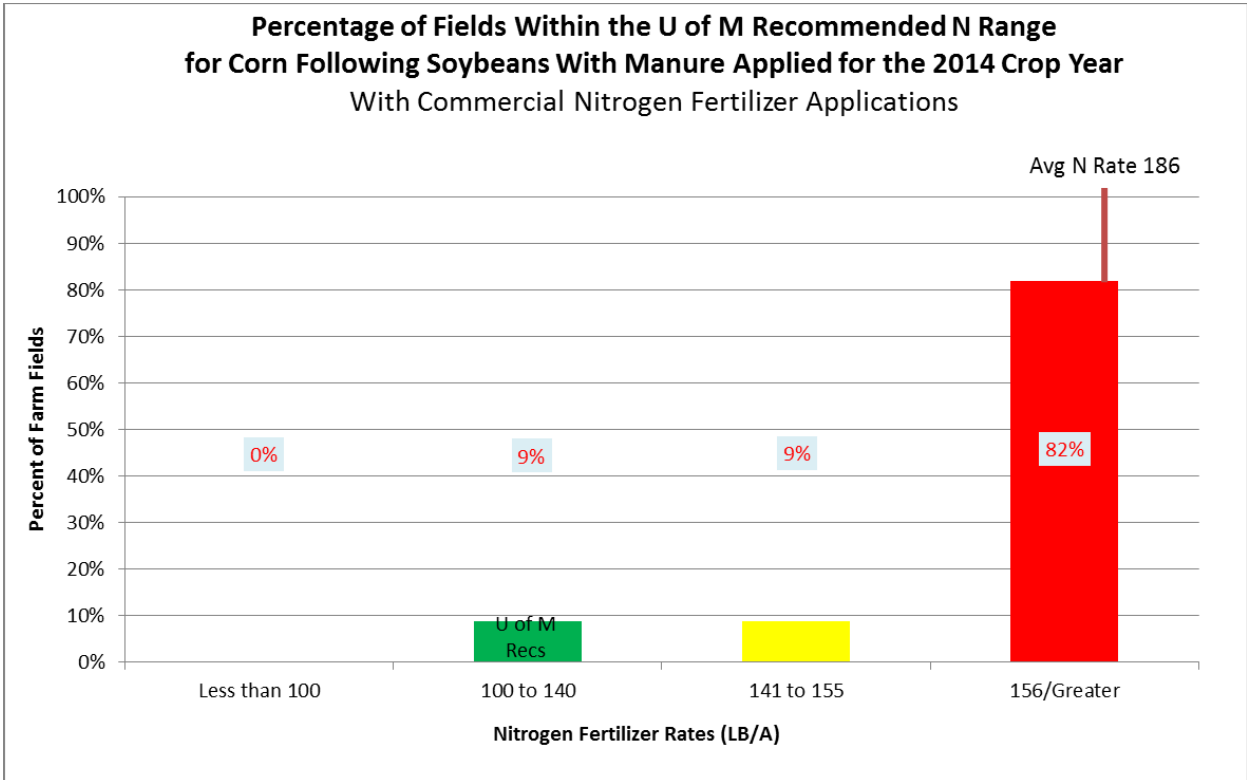


Figure 163. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 23 fields.

Table 143. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2014 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	193	160	180
Avg N Rate LB/A	No Data	118	150	197

Southwestern and West Central Region: Corn Following Soybeans

Figure 164 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 144 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 164.

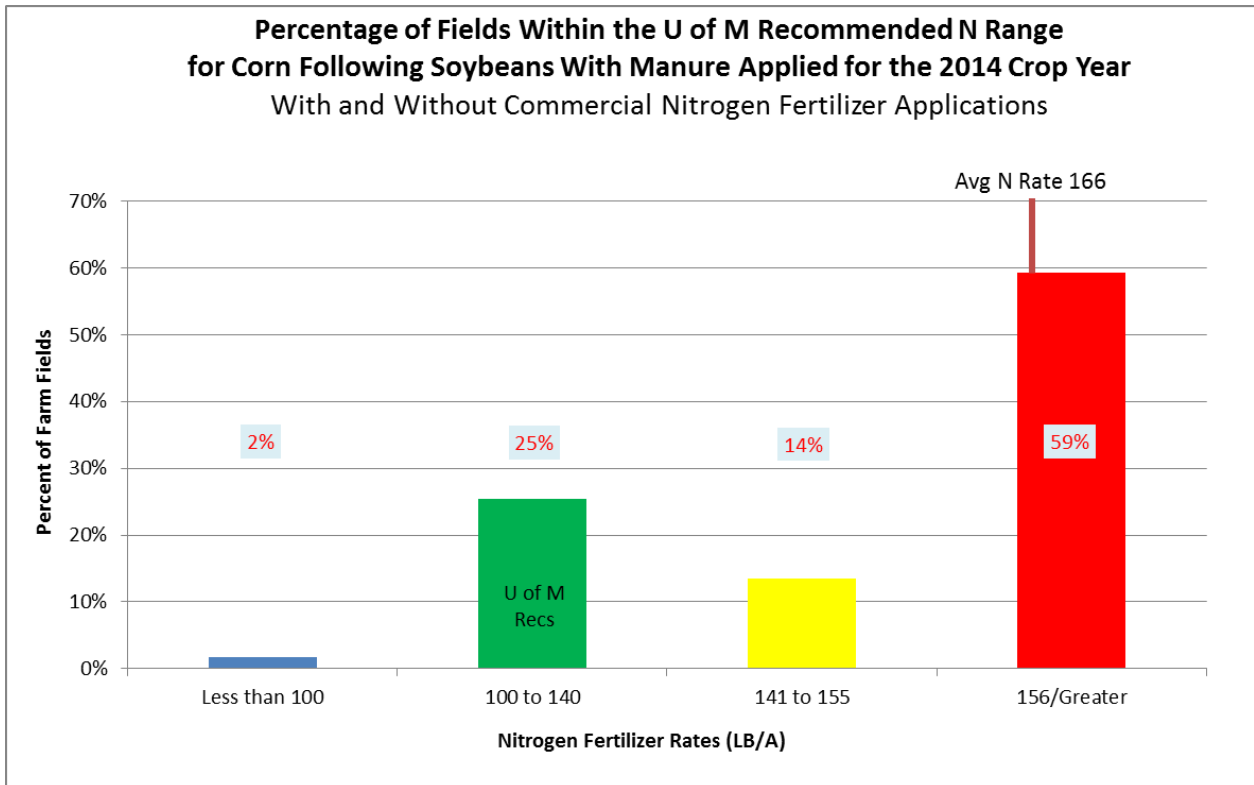


Figure 164. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 59 fields.

Table 144. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	130	176	183	179
Avg N Rate LB/A	45	127	150	190

Figure 165 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 145 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 165.

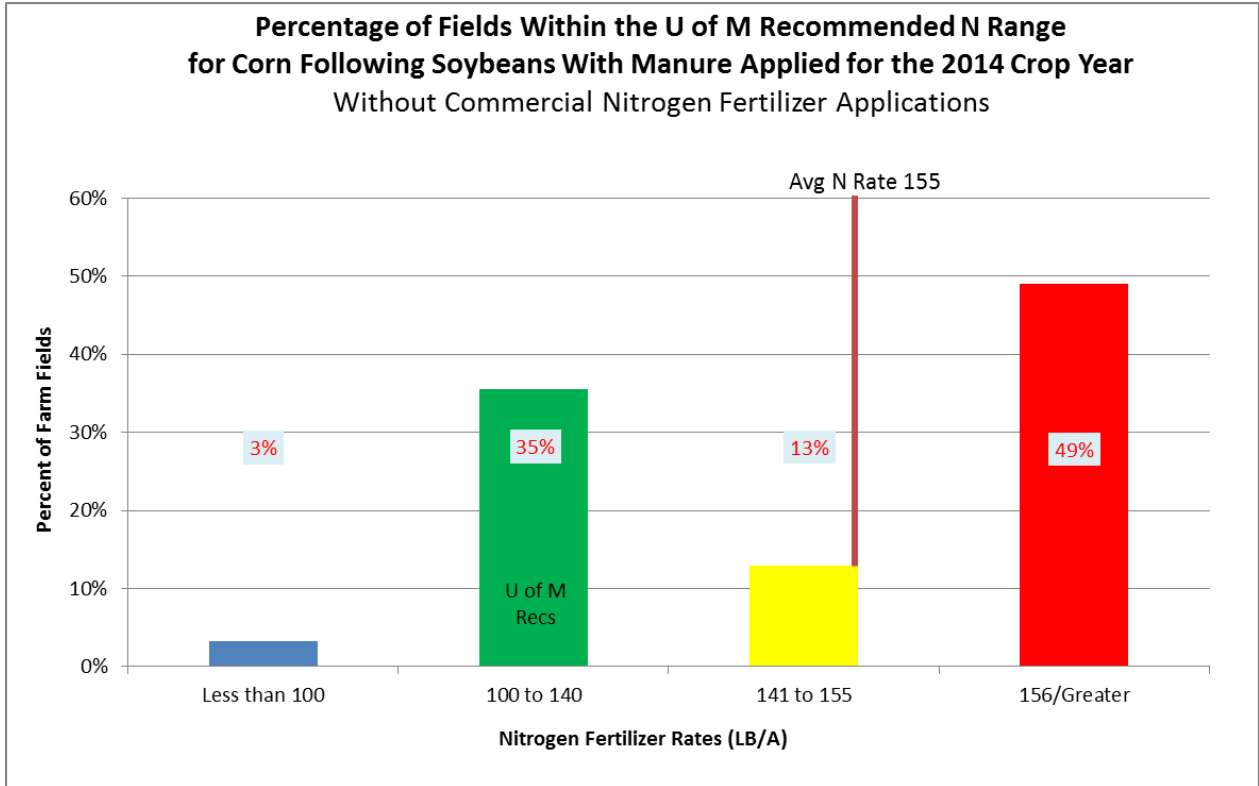


Figure 165. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2014: 31 fields.

Table 145. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2014 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	130	172	188	174
Avg N Rate LB/A	45	129	150	183

Figure 166 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 146 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 166.

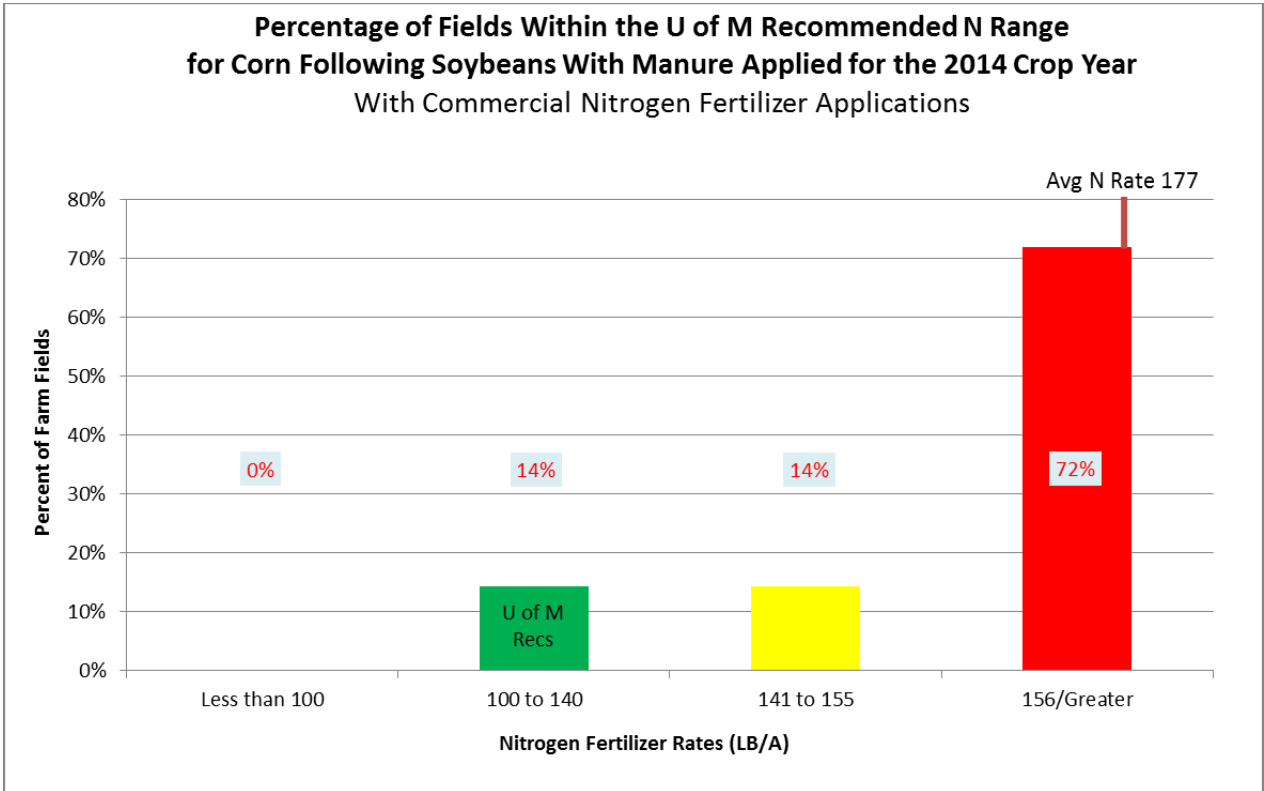


Figure 166. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 28 fields.

Table 146. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2014 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	185	178	183
Avg N Rate LB/A	No Data	120	151	194

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 167 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 147 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 167.

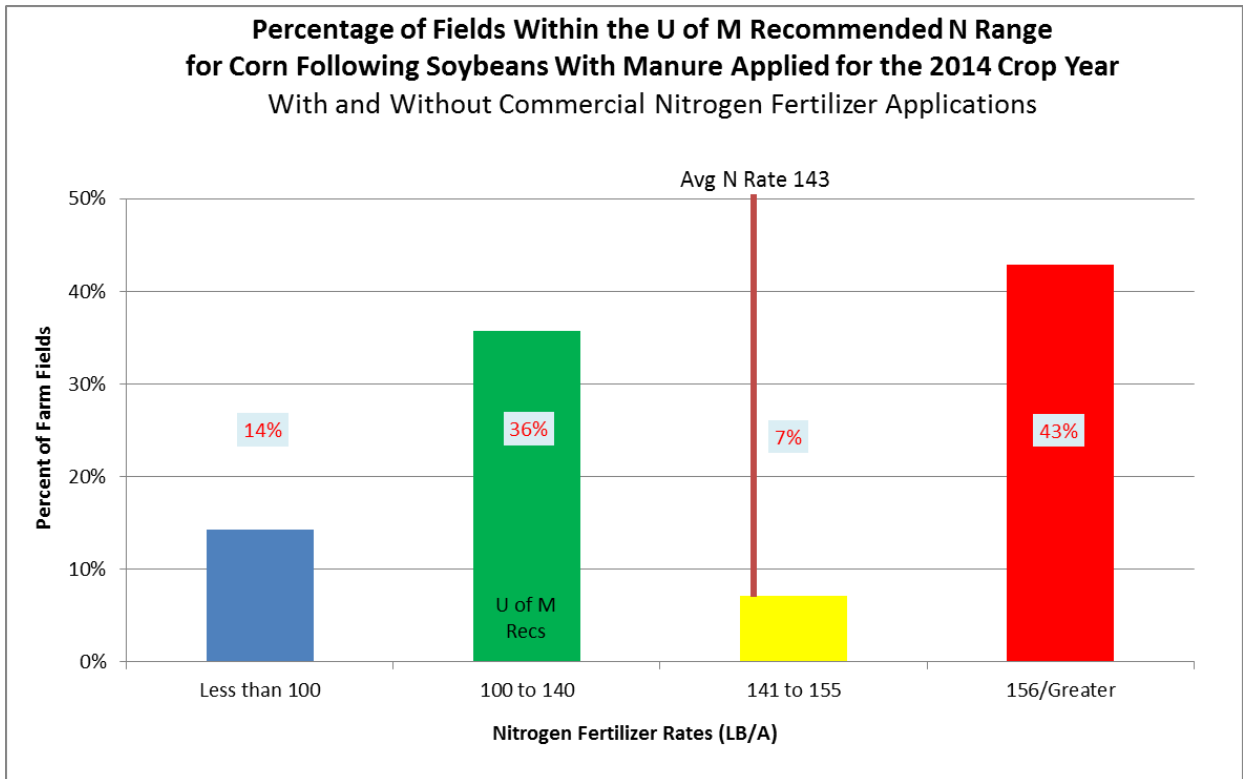


Figure 167. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 14 fields.

Table 147. Nitrogen rates and associated yields for corn following soybeans applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	140	140	85	169
Avg N Rate LB/A	63	127	150	183

Figure 168 details the distribution of nitrogen rates in the IRR 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 148 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 168.

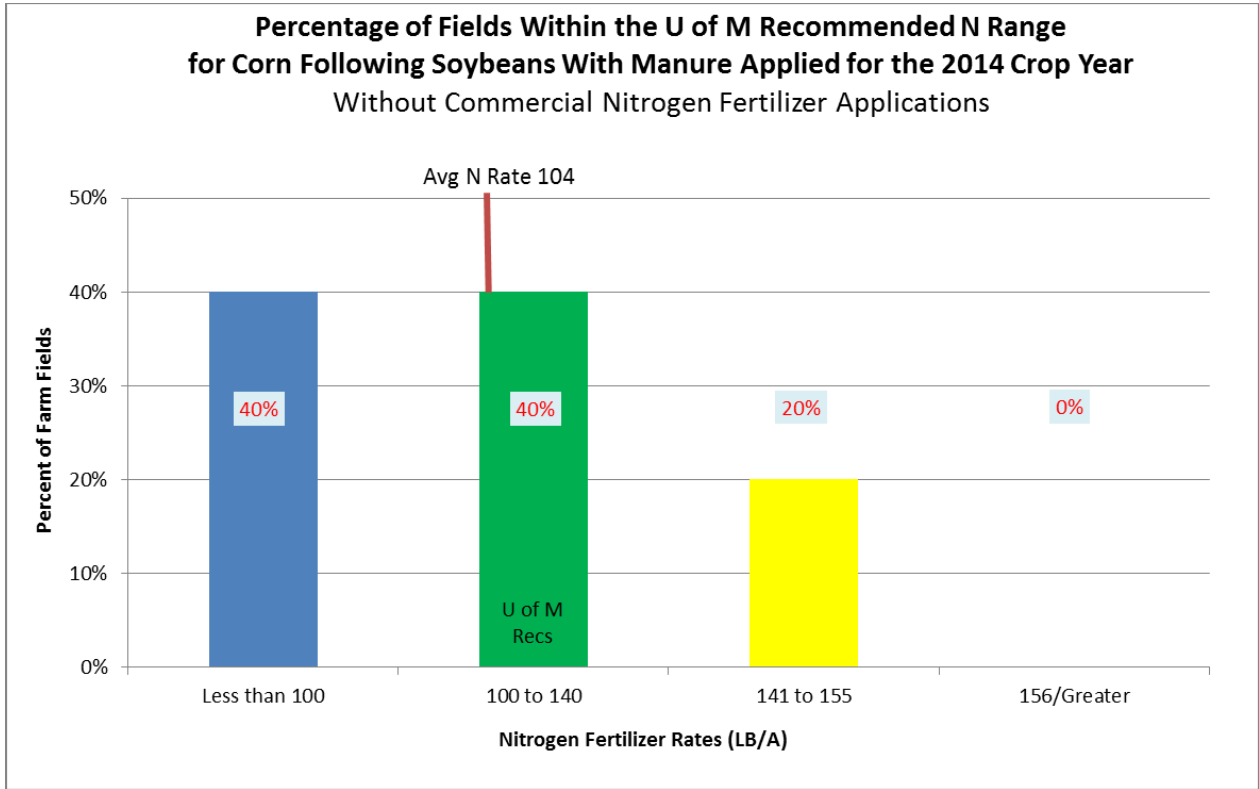


Figure 168. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and no commercial nitrogen fertilizer in the IRR BMP region for 2014: 5 fields.

Table 148. Nitrogen rates and associated yields for corn following soybeans applied with manure and no commercial nitrogen fertilizer for the 2014 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	140	145	85	No Data
Avg N Rate LB/A	63	122	150	No Data

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.

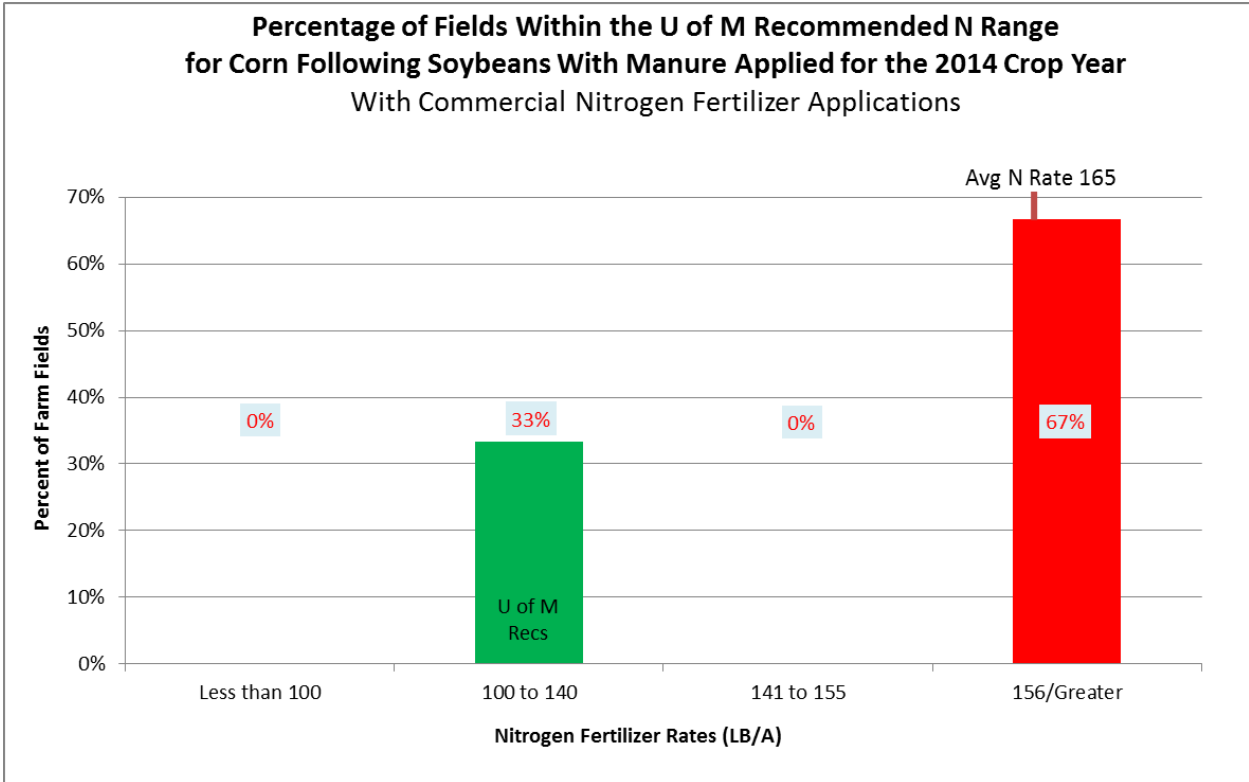


Figure 169. Percentage of fields within the U of M recommended N range for corn following soybeans applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 9 fields.

Table 149. Nitrogen rates and associated yields for corn following soybeans applied with manure and commercial nitrogen fertilizer for the 2014 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	137	No Data	169
Avg N Rate LB/A	No Data	130	No Data	183

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.

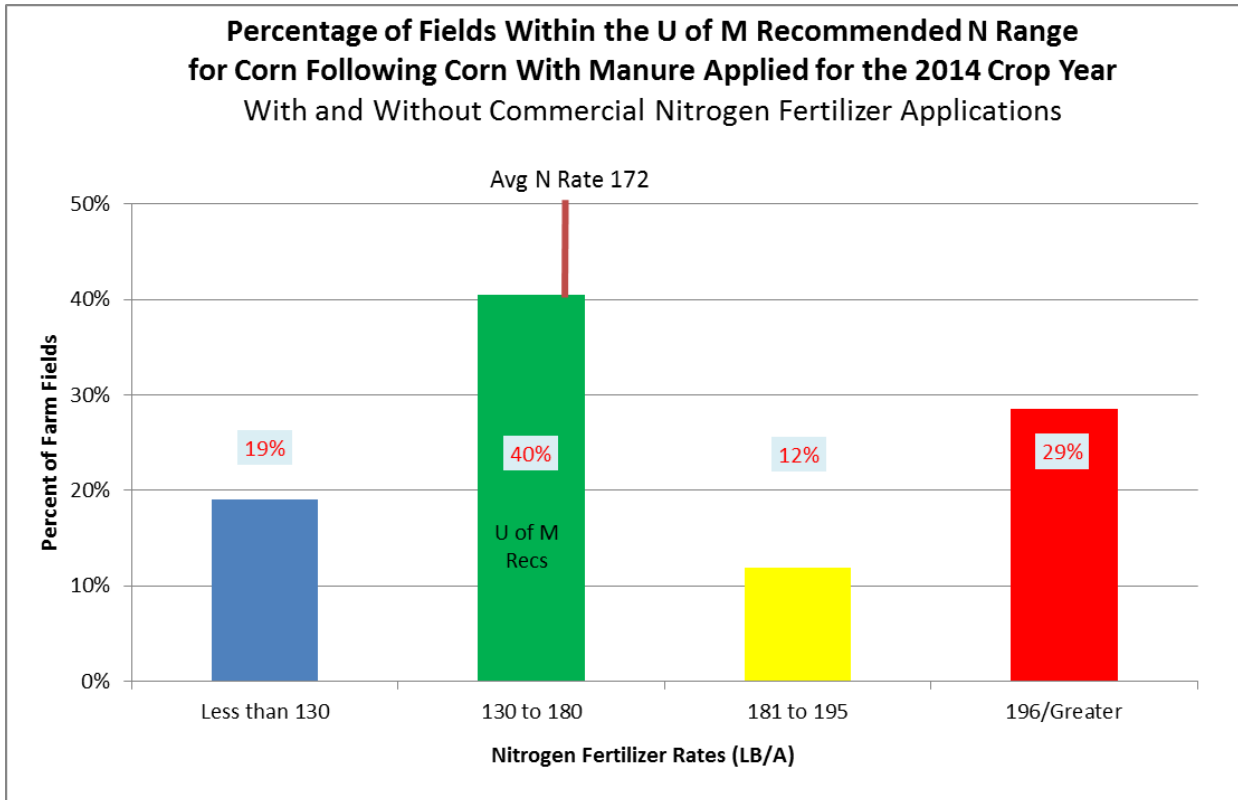


Figure 170. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2014: 84 fields.

Table 150. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	176	172	182	173
Avg N Rate LB/A	104	160	190	226

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.

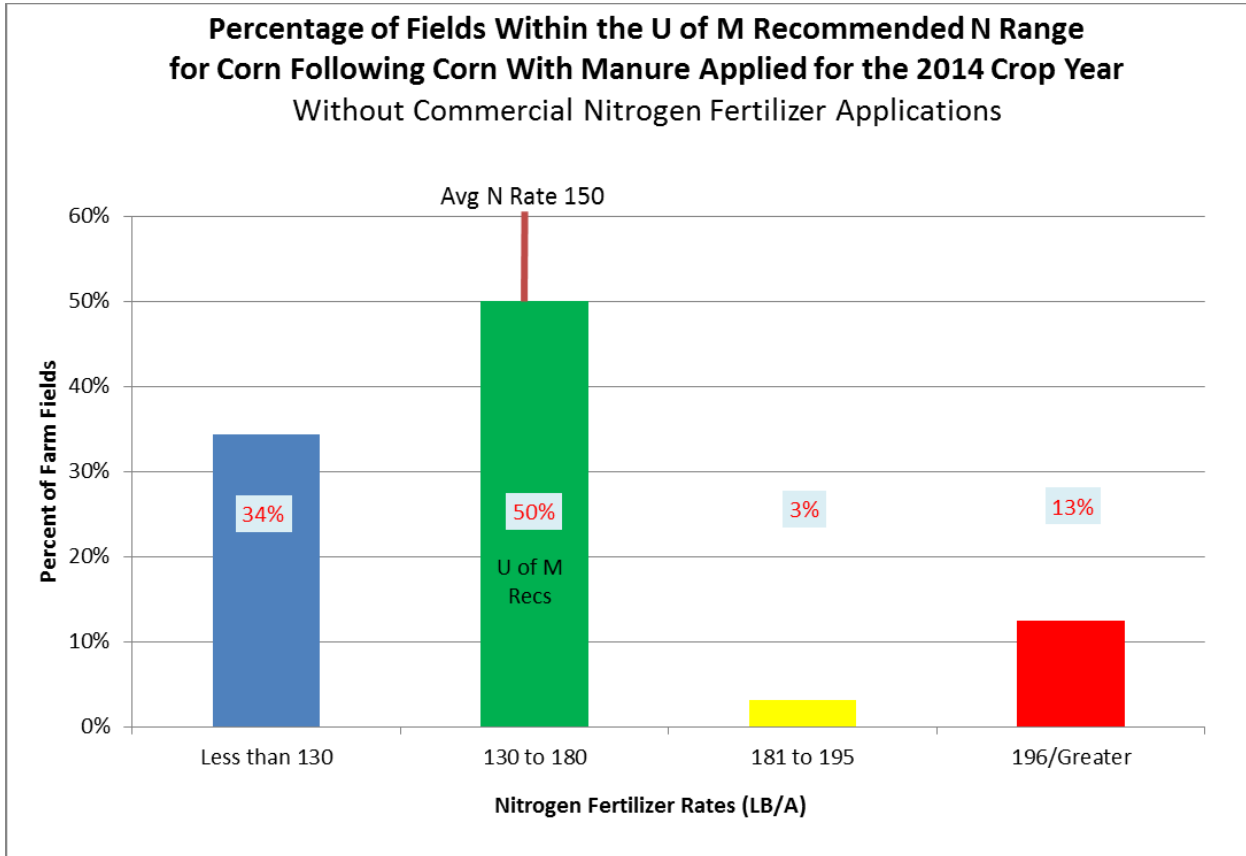


Figure 171. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in Minnesota for 2014: 32 fields.

Table 151. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2014 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	175	172	190	186
Avg N Rate LB/A	101	158	190	244

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.

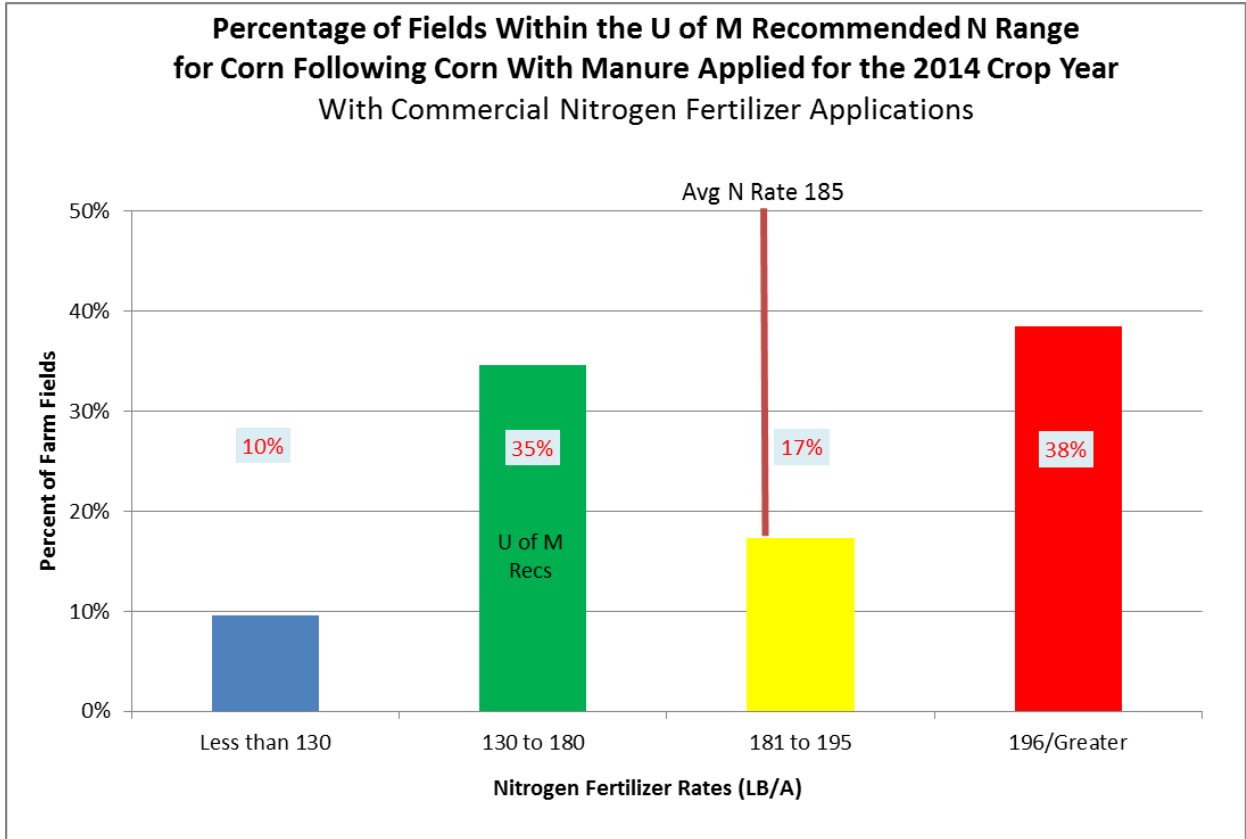


Figure 172. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in Minnesota for 2014: 52 fields.

Table 152. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2014 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	178	172	181	171
Avg N Rate LB/A	109	162	190	222

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.

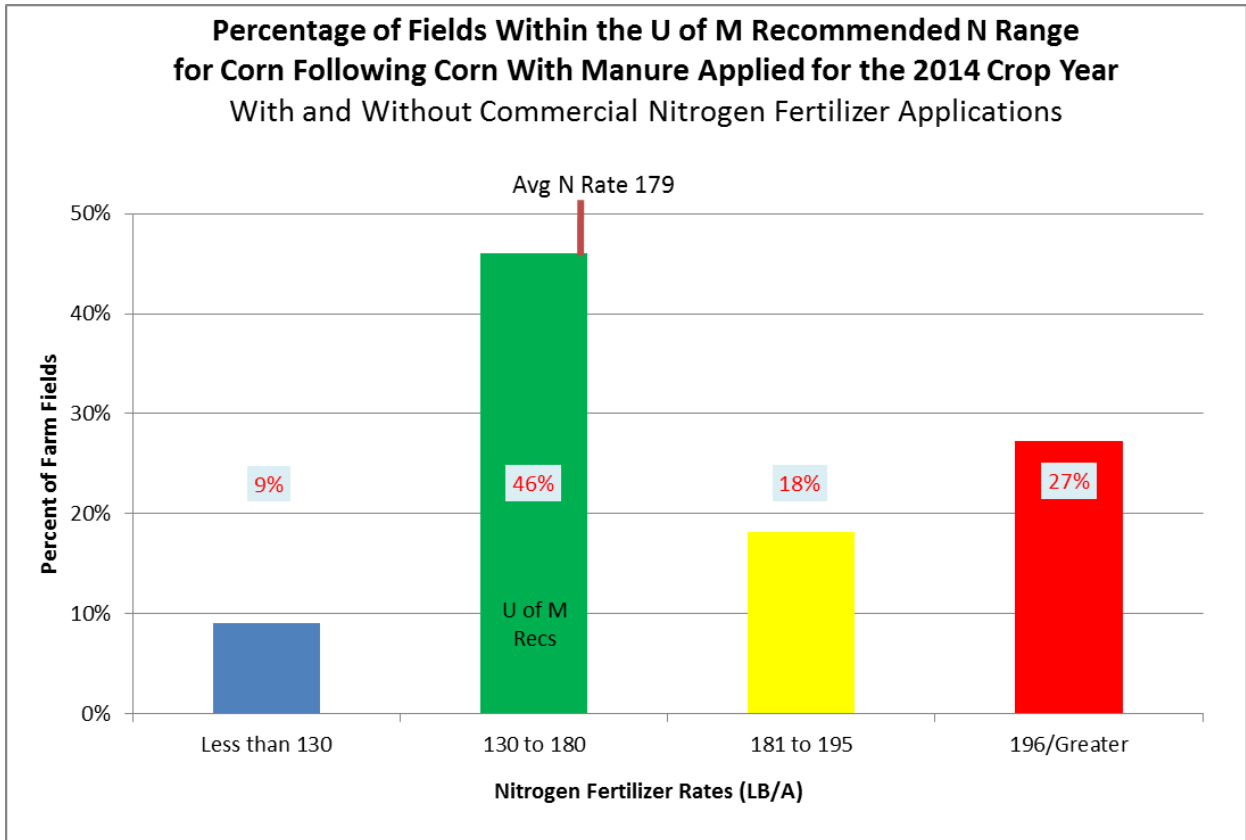


Figure 173. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SE BMP region for 2014: 11 fields.

Table 153. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	190	192	195	173
Avg N Rate LB/A	120	163	193	217

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.

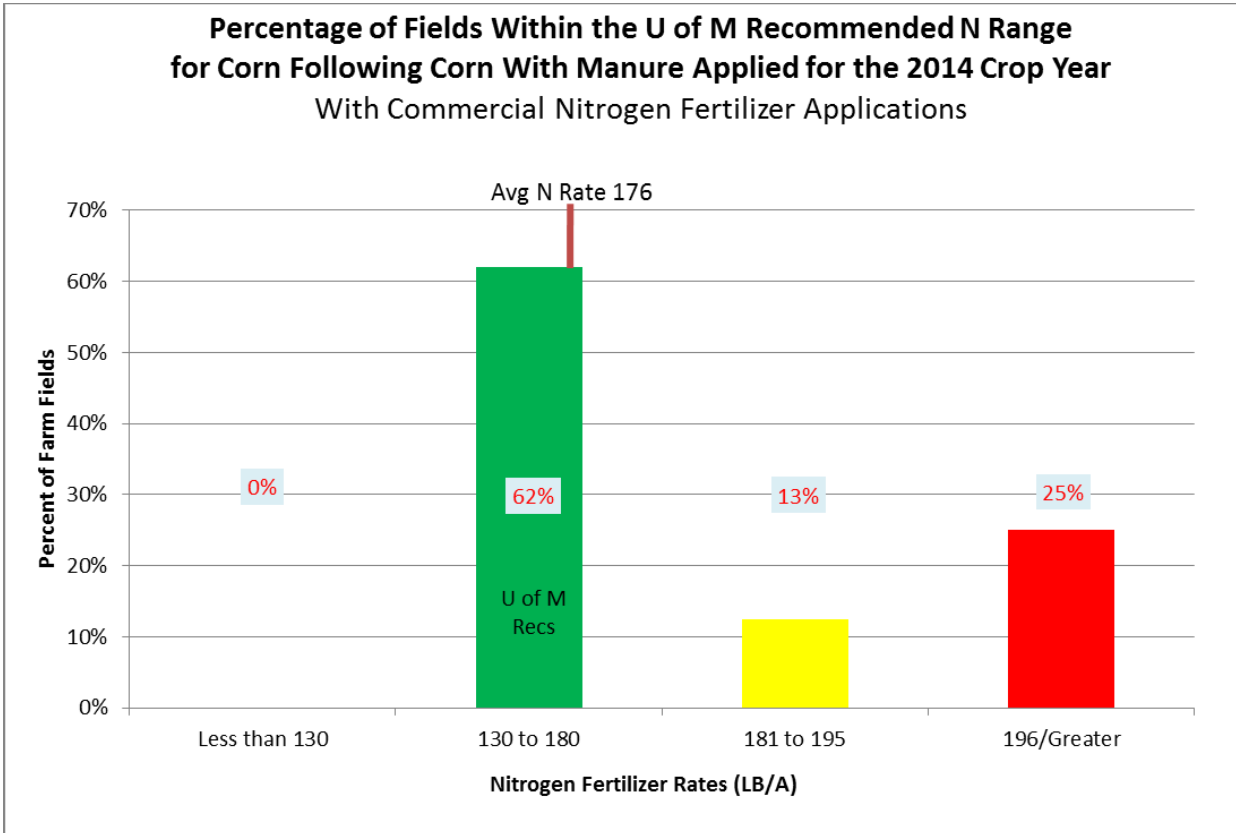


Figure 174. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SE BMP region for 2014: 8 fields.

Table 154. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2014 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	192	200	165
Avg N Rate LB/A	No Data	163	195	200

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.

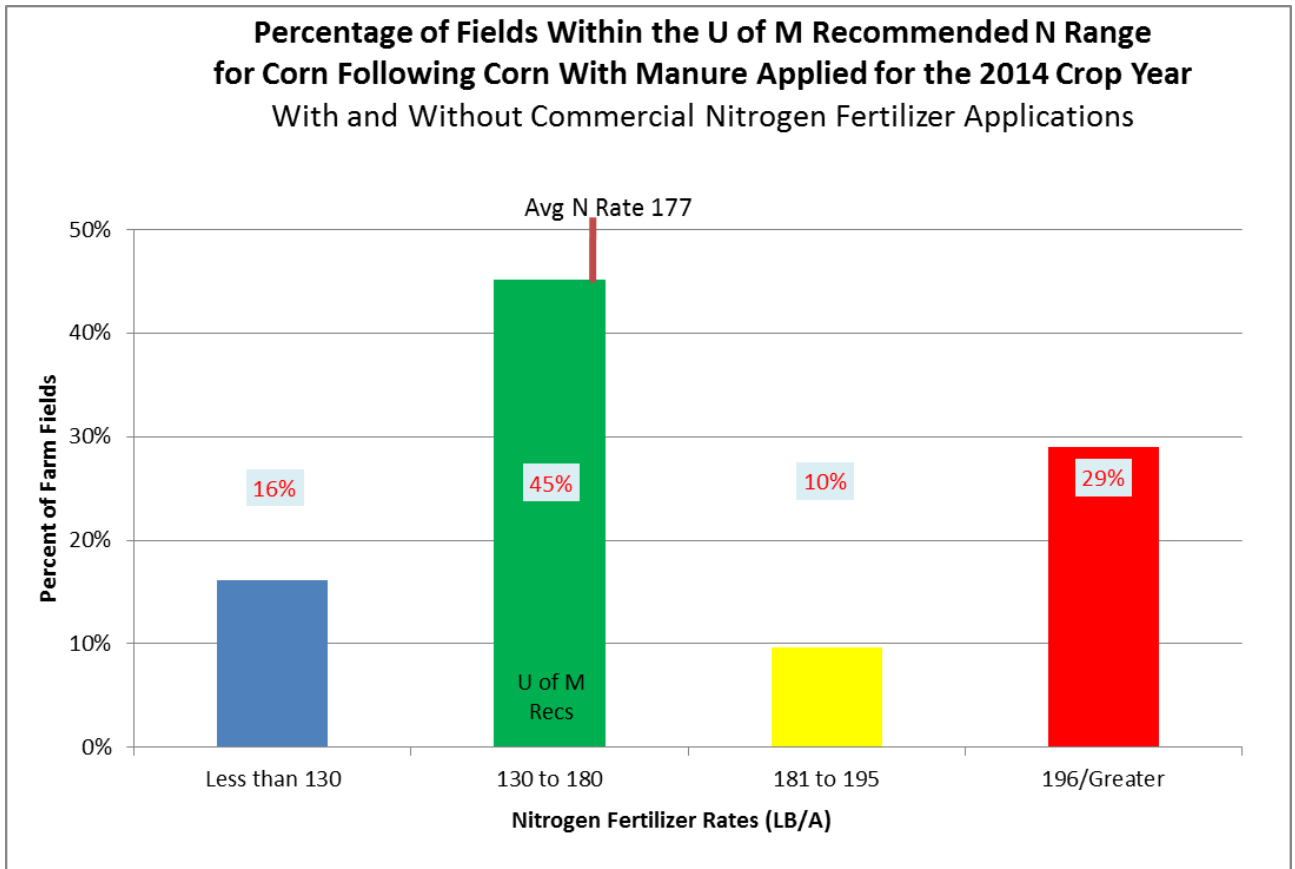


Figure 175. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 31 fields.

Table 155. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	183	172	190	182
Avg N Rate LB/A	110	167	187	225

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.

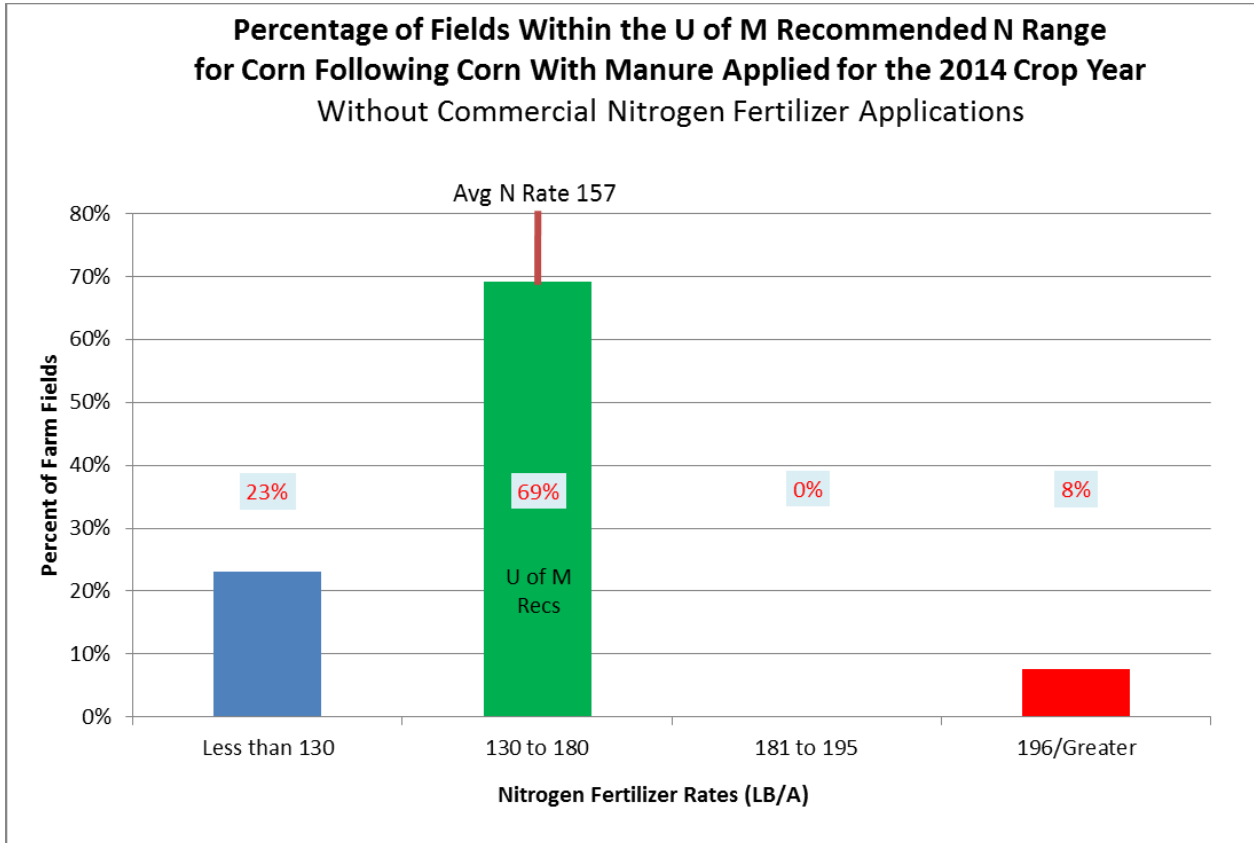


Figure 176. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SC BMP region for 2014: 13 fields.

Table 156. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2014 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	178	173	No Data	180
Avg N Rate LB/A	117	163	No Data	225

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.

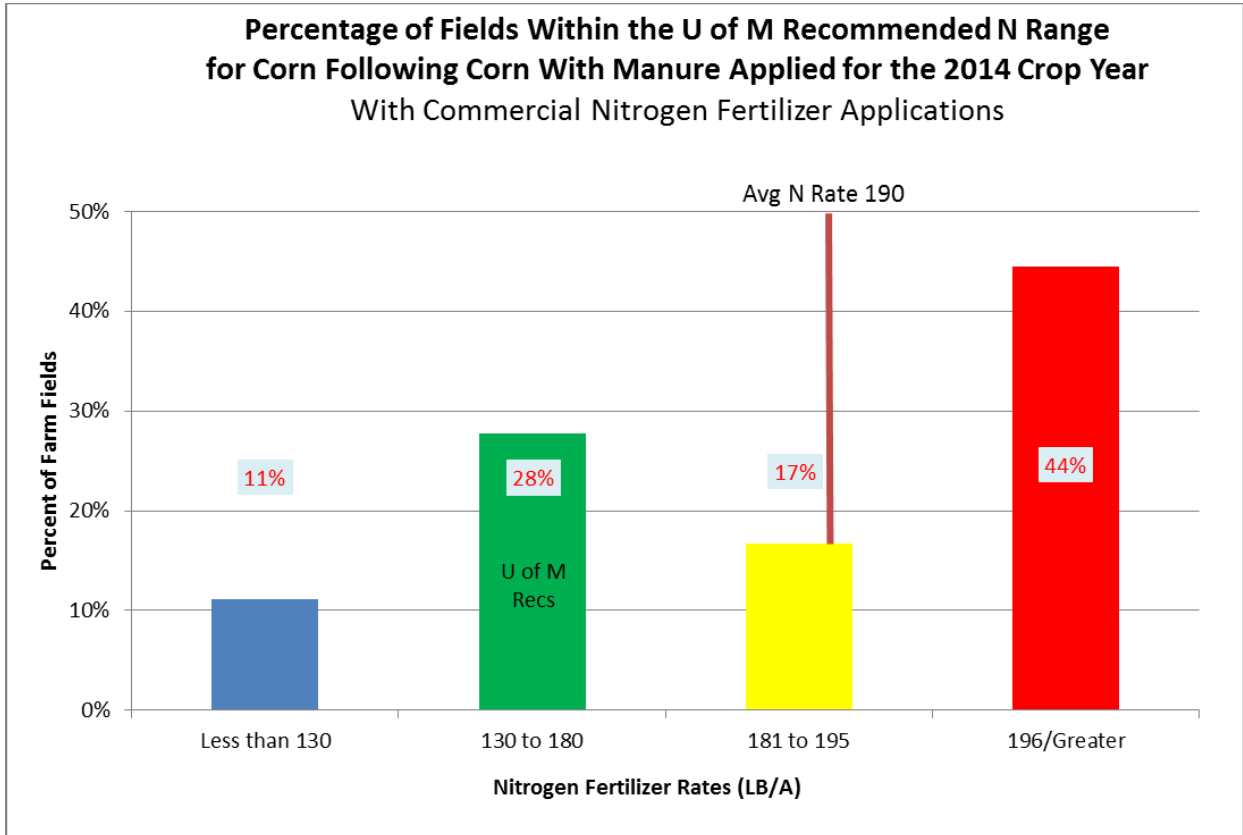


Figure 177. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 18 fields.

Table 157. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2014 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	191	171	190	182
Avg N Rate LB/A	101	174	187	225

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.

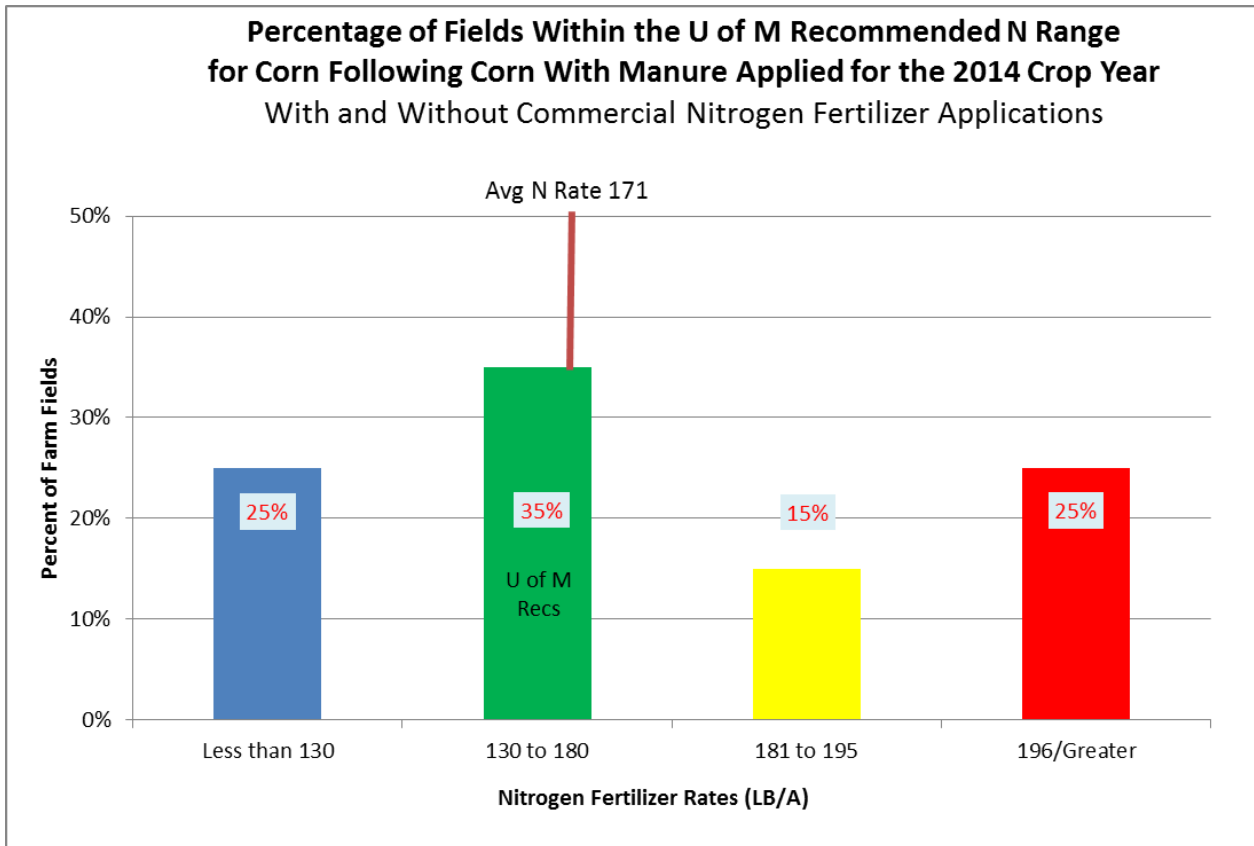


Figure 178. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 20 fields.

Table 158. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	190	178	190	176
Avg N Rate LB/A	115	156	188	238

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.

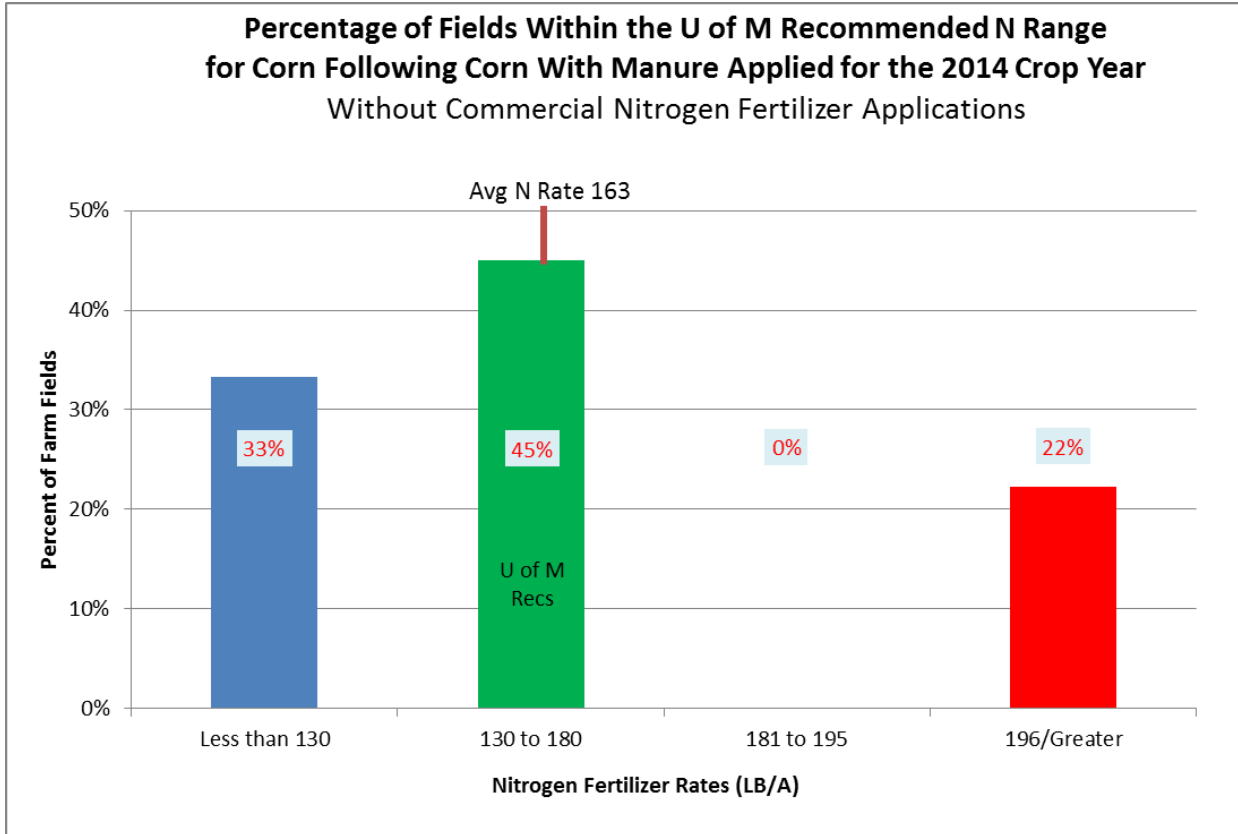


Figure 179. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the SW BMP region for 2014: 9 fields.

Table 159. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2014 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	187	178	No Data	186
Avg N Rate LB/A	112	158	No Data	250

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.

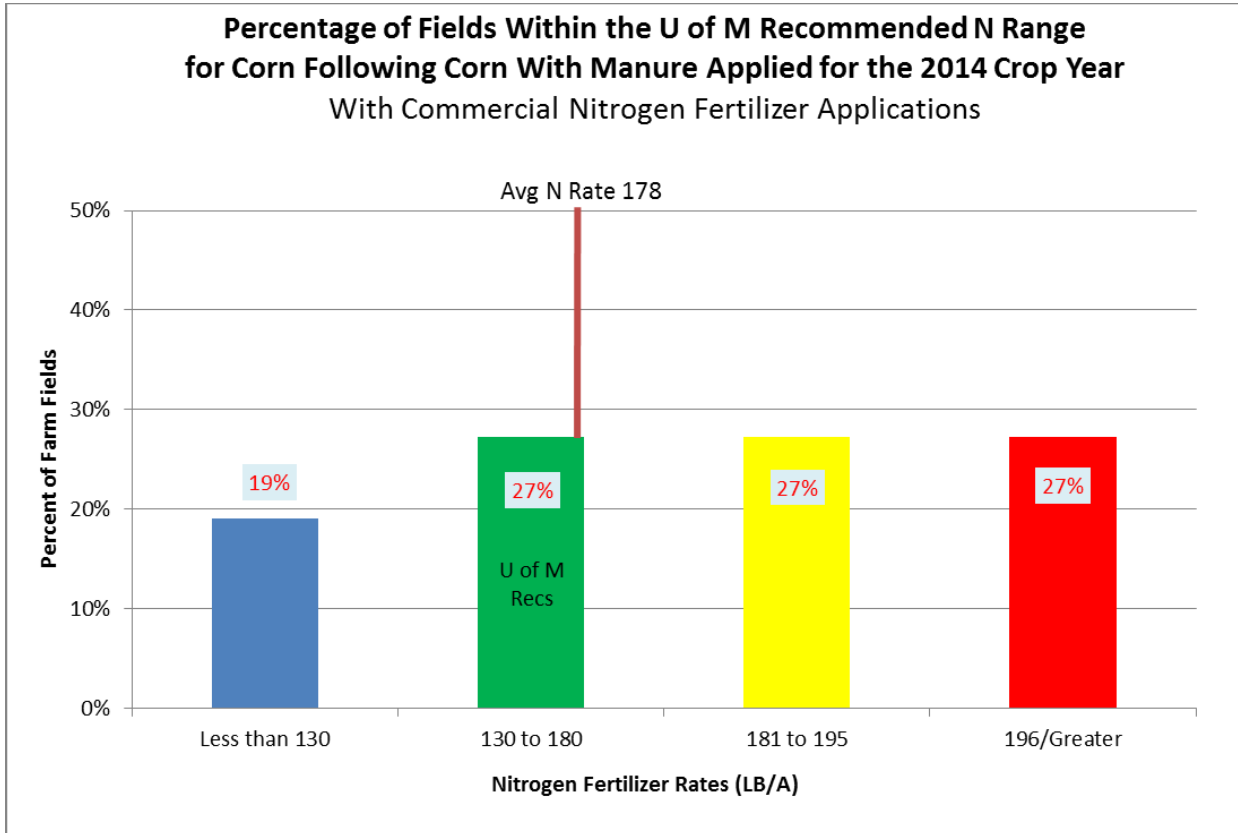


Figure 180 Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 11 fields.

Table 160. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2014 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	195	179	190	170
Avg N Rate LB/A	120	153	188	230

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.

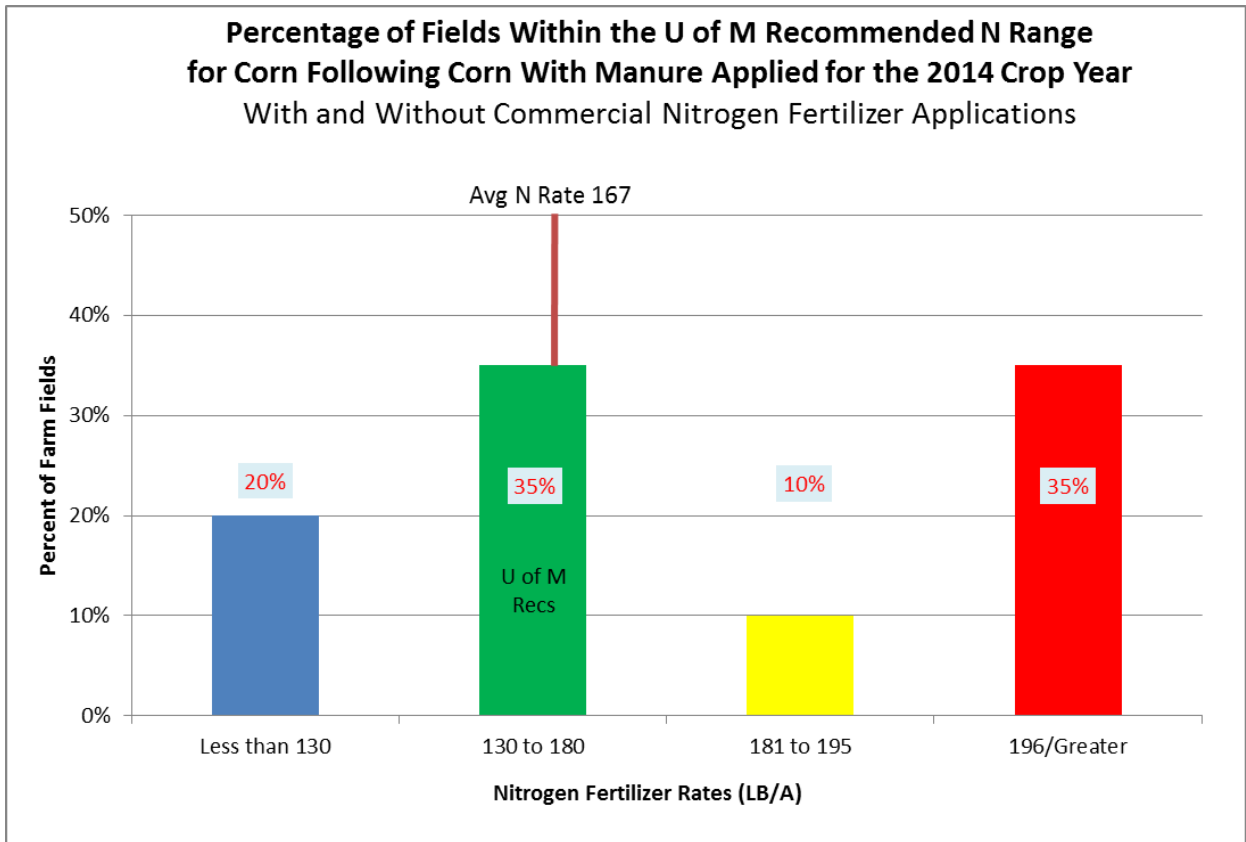


Figure 181. Percentage of fields within the U of M recommended N range for corn following corn applied with manure or with manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 20 fields.

Table 161. Nitrogen rates and associated yields for corn following corn applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	153	143	160
Avg N Rate LB/A	90	150	193	222

Figure 182 details the distribution of nitrogen rates in the IRR 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 162 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 182.

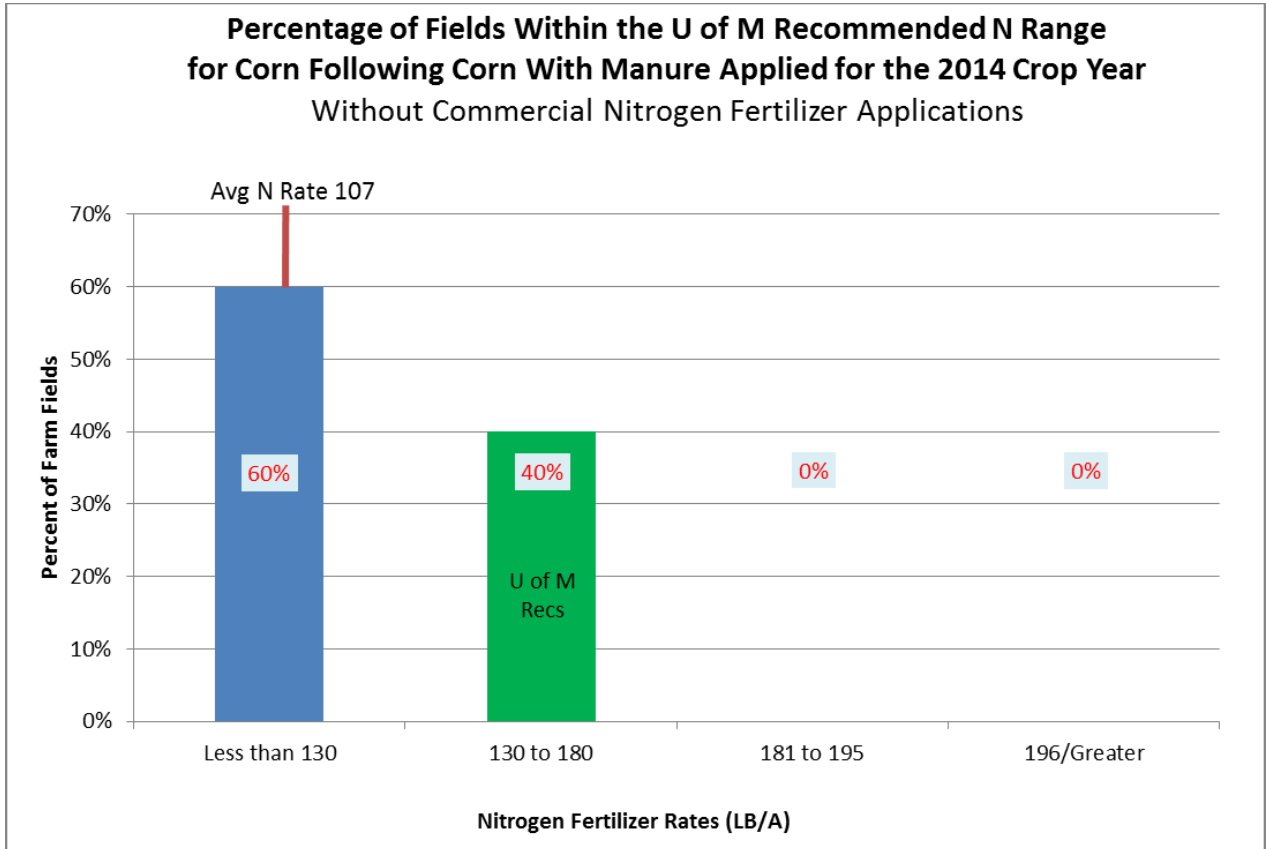


Figure 182. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and no commercial nitrogen fertilizer in the IRR BMP region for 2014: 5 fields.

Table 162. Nitrogen rates and associated yields for corn following corn applied with manure and no commercial nitrogen fertilizer for the 2014 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	160	163	No Data	No Data
Avg N Rate LB/A	85	140	No Data	No Data

Figure 183 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 163 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 183.

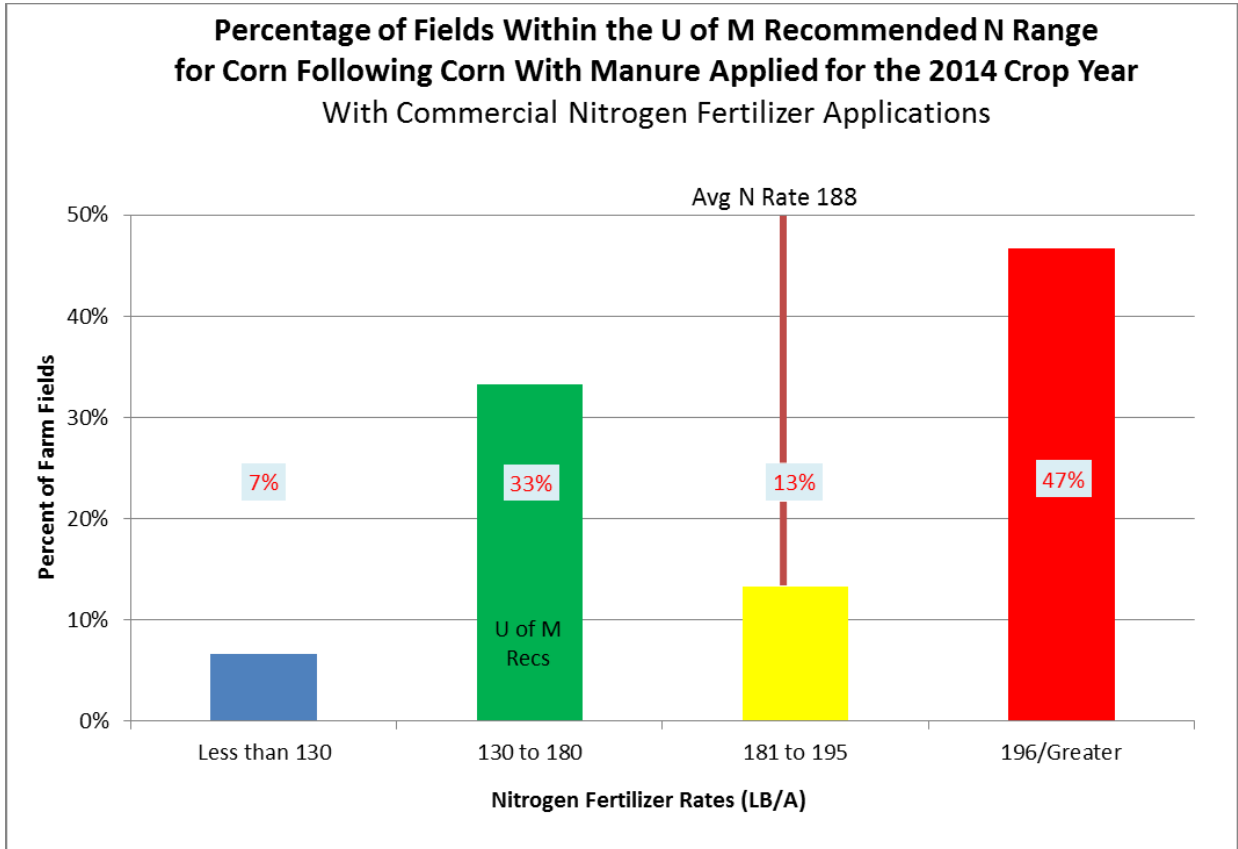


Figure 183. Percentage of fields within the U of M recommended N range for corn following corn applied with manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 15 fields.

Table 163. Nitrogen rates and associated yields for corn following corn applied with manure and commercial nitrogen fertilizer for the 2014 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	120	150	143	160
Avg N Rate LB/A	104	155	193	222

Statewide: Corn Following Corn Following Alfalfa

Figure 184 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 164 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 184.

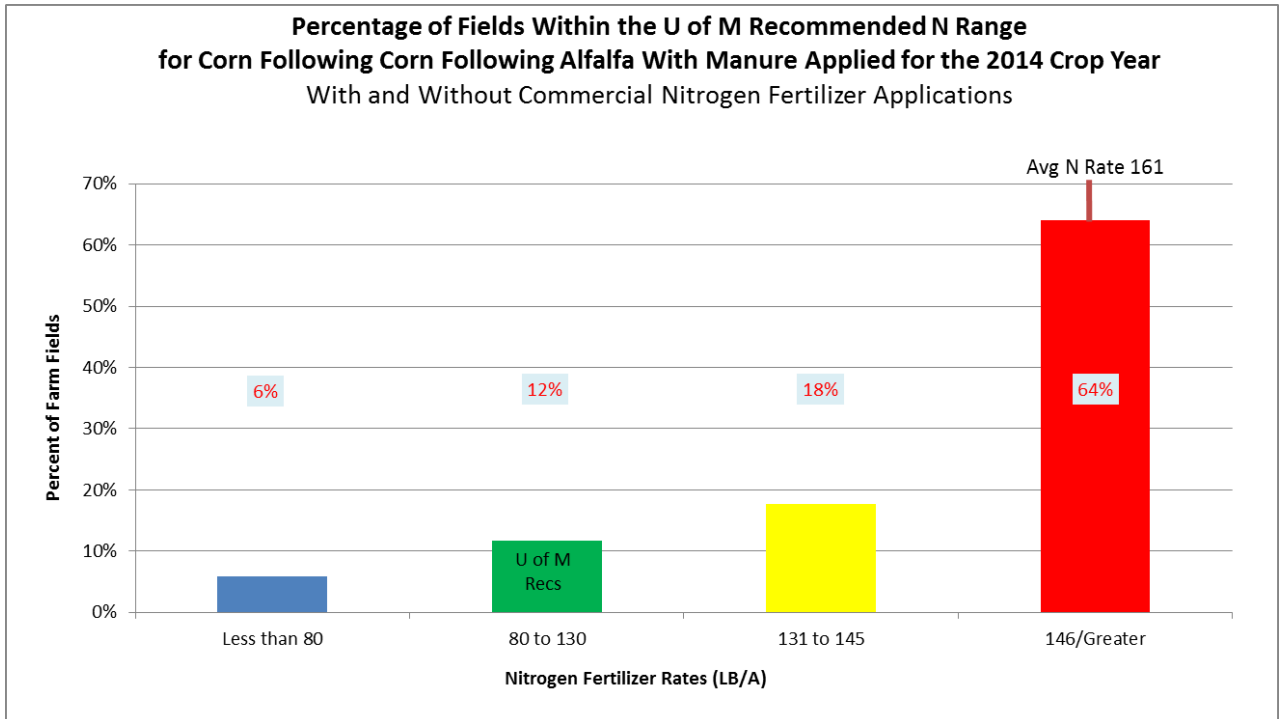


Figure 184. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2014: 17 fields.

Table 164. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	175	161	180	170
Avg N Rate LB/A	70	97	141	186

⁷ Manure is from all manure sources

Figure 185 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 165 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 185.

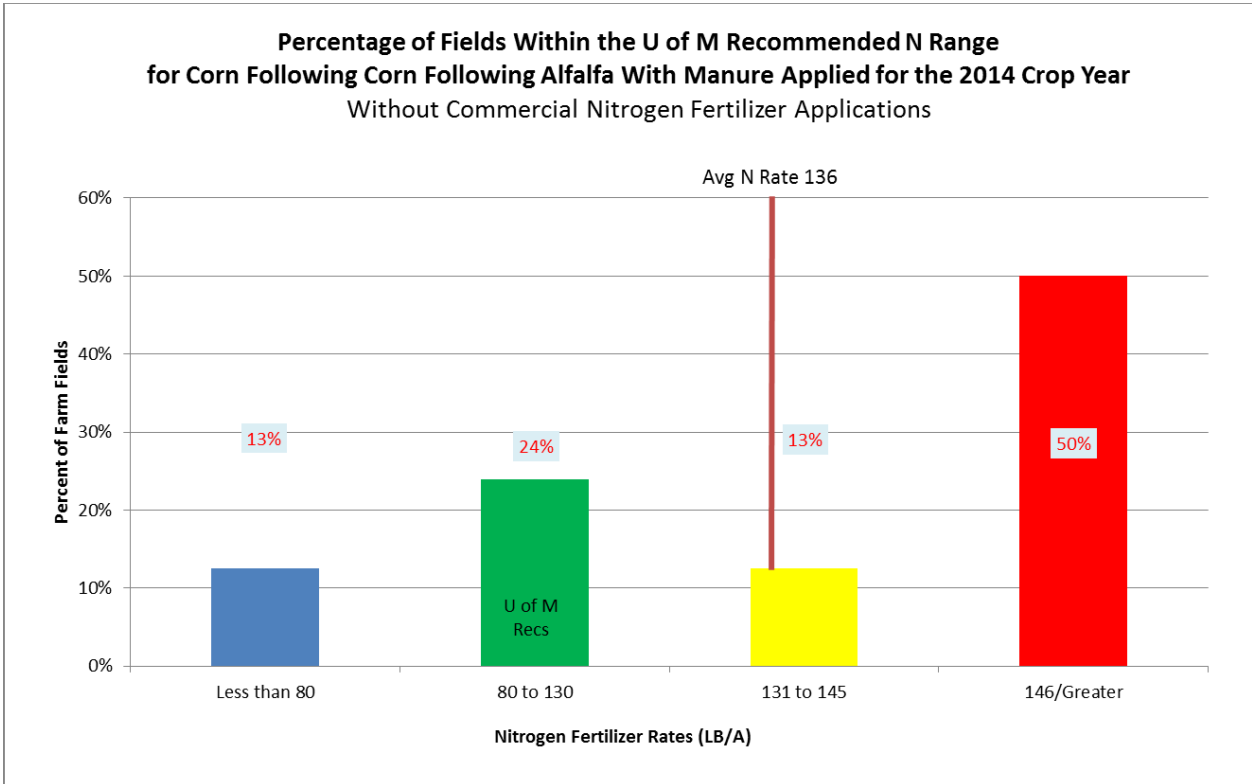


Figure 185. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2014: 8 fields.

Table 165. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2014 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	175	161	210	187
Avg N Rate LB/A	70	97	142	170

Figure 186 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 166 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 186.

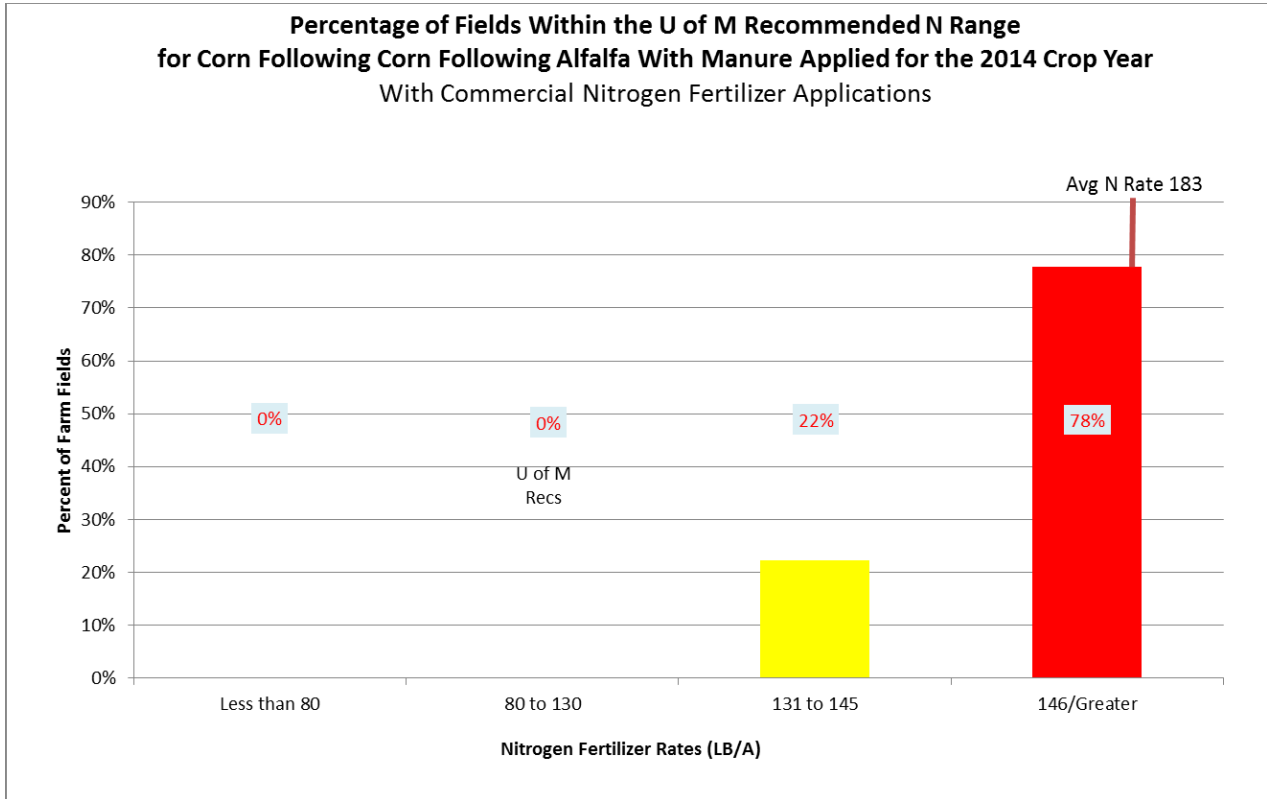


Figure 186. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer in Minnesota for 2014: 9 fields.

Table 166. Nitrogen rates and associated yields for corn following corn following alfalfa applied with manure and commercial nitrogen fertilizer for the 2014 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	165	161
Avg N Rate LB/A	No Data	No Data	140	195

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 187 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 167 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 187.

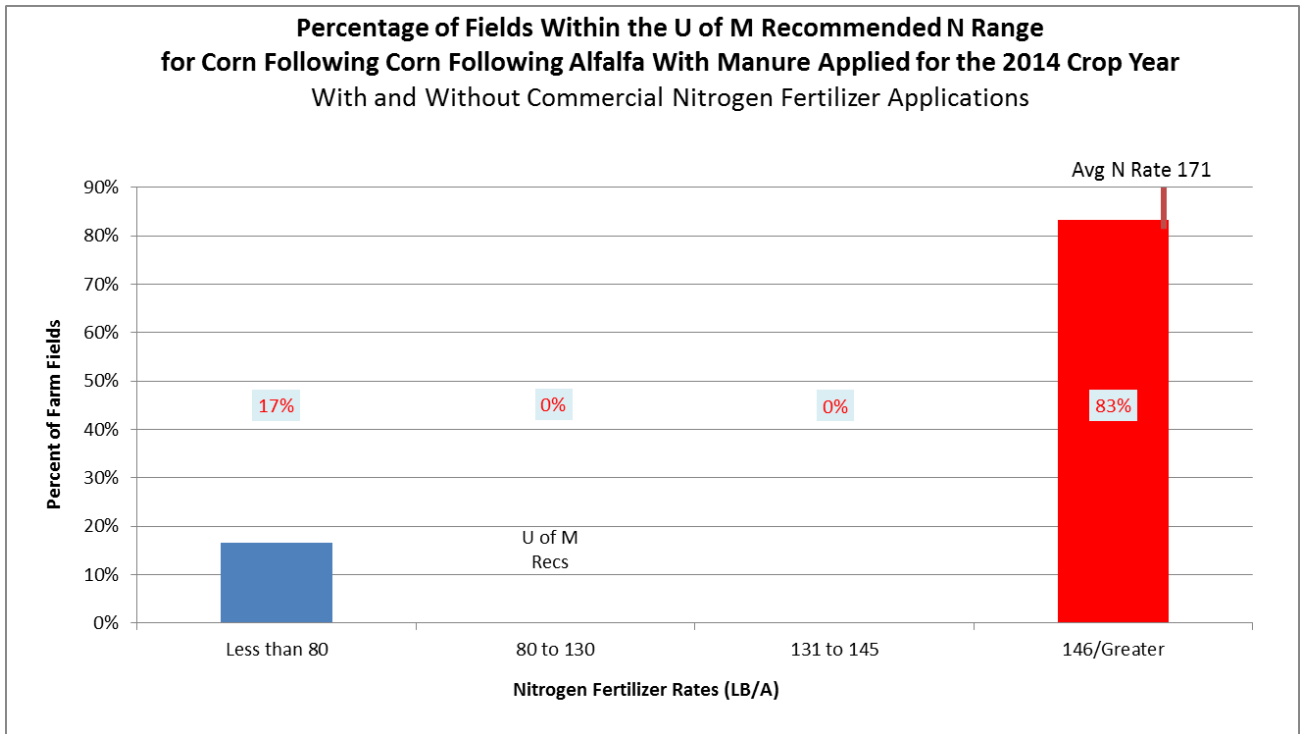


Figure 187. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in SE BMP region for 2014: 6 fields.

Table 167. Nitrogen rates and associated yields of corn following corn following alfalfa fields applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	175	No Data	No Data	181
Avg N Rate LB/A	70	No Data	No Data	191

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.
- With 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 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

Less than five farmers reported planting corn following 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 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 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.

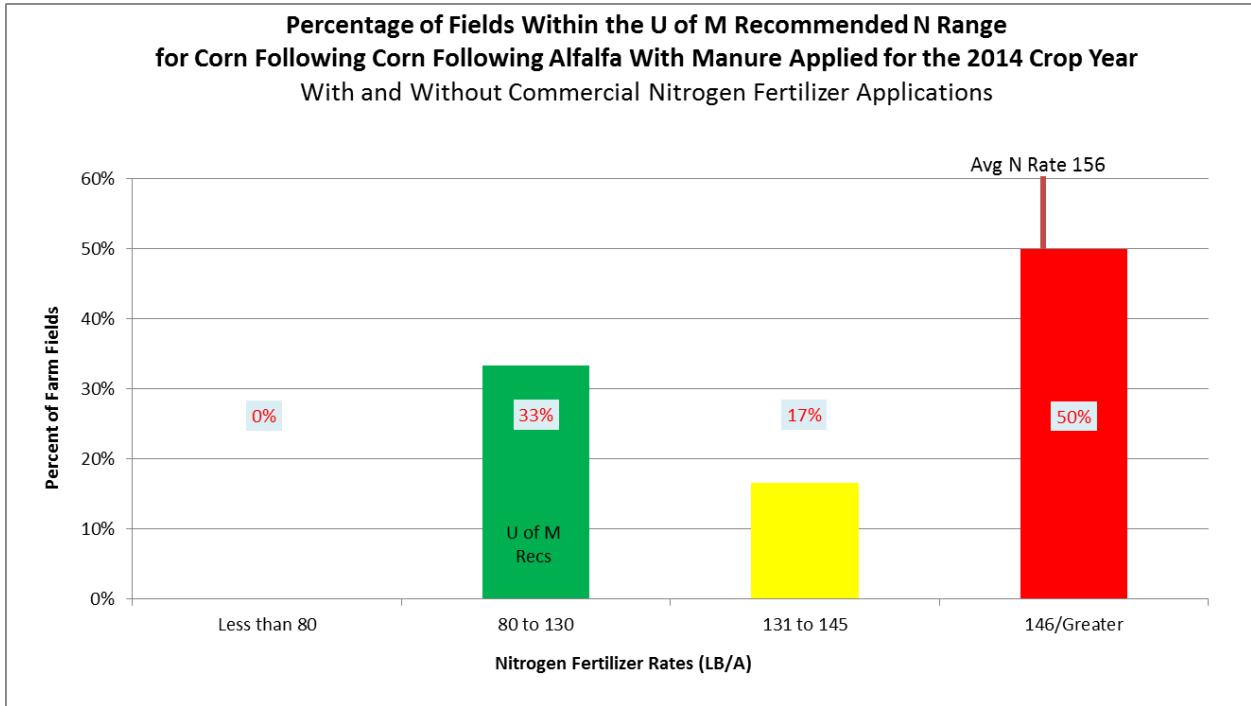


Figure 188. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in IRR BMP region for 2014: 6 fields.

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 2014 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	161	150	141
Avg N Rate LB/A	No Data	97	140	200

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

Statewide: Corn Following Alfalfa

Figure 189 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 169 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 189.

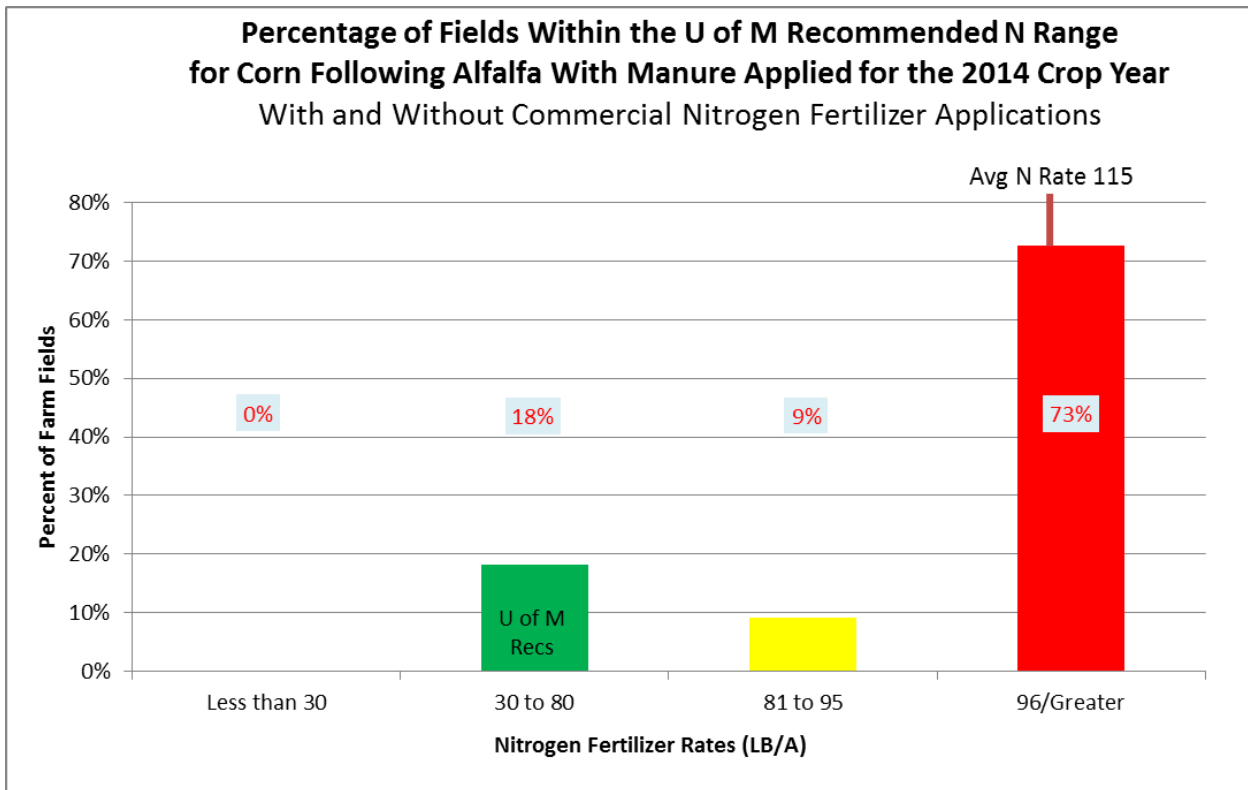


Figure 189. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer in Minnesota for 2014: 11 fields.

Table 169. Nitrogen rates and associated yields for corn following alfalfa applied with manure or with manure and commercial nitrogen fertilizer for the 2014 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	150	175	152
Avg N Rate LB/A	No Data	45	90	136

Figure 190 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 170 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 190.

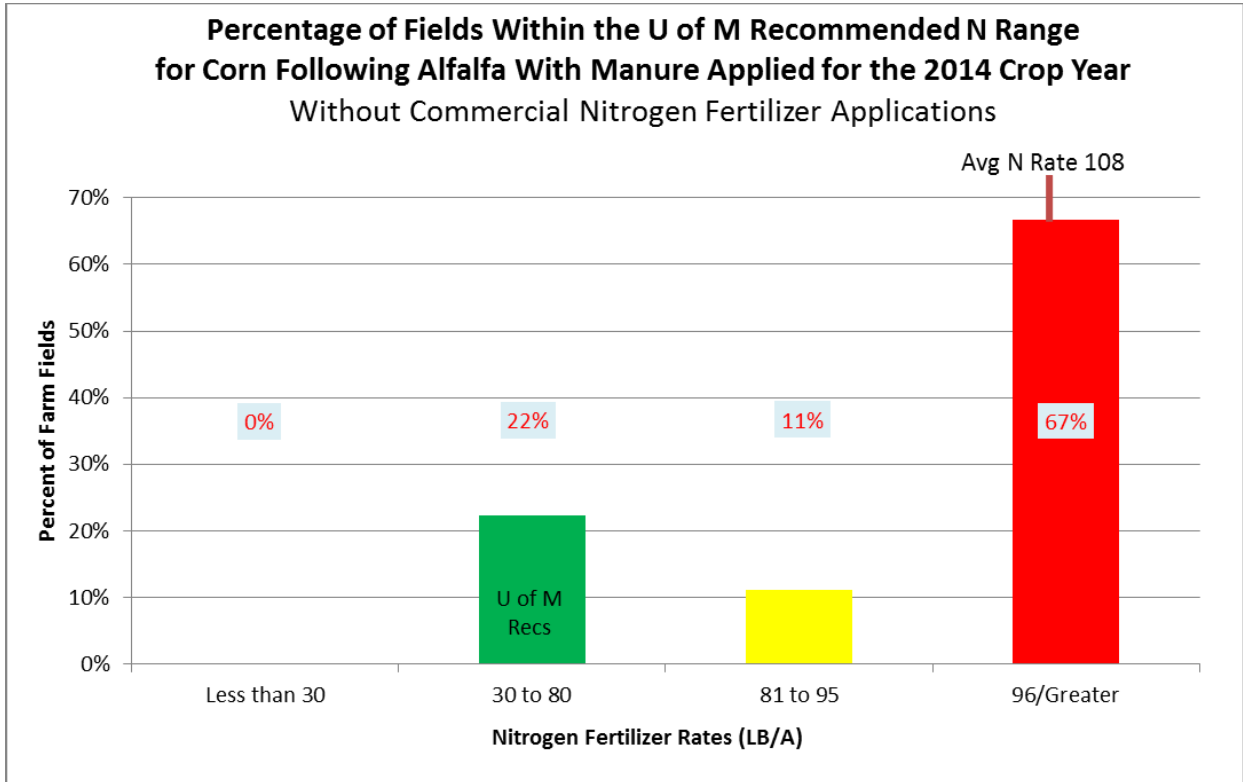


Figure 190. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with manure and no commercial nitrogen fertilizer in Minnesota for 2014: 9 fields.

Table 170. Nitrogen rates and associated yields for corn following alfalfa applied with manure and no commercial nitrogen fertilizer for the 2014 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	150	175	146
Avg N Rate LB/A	No Data	45	90	132

Less than five farmers reported planting corn following alfalfa in Minnesota on fields applied with 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 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

Less than five farmers reported planting corn following alfalfa 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.

Statewide: Corn Following Small Grains

Less than five farmers reported planting corn following small grains in Minnesota 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.

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 191 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 171 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 191.

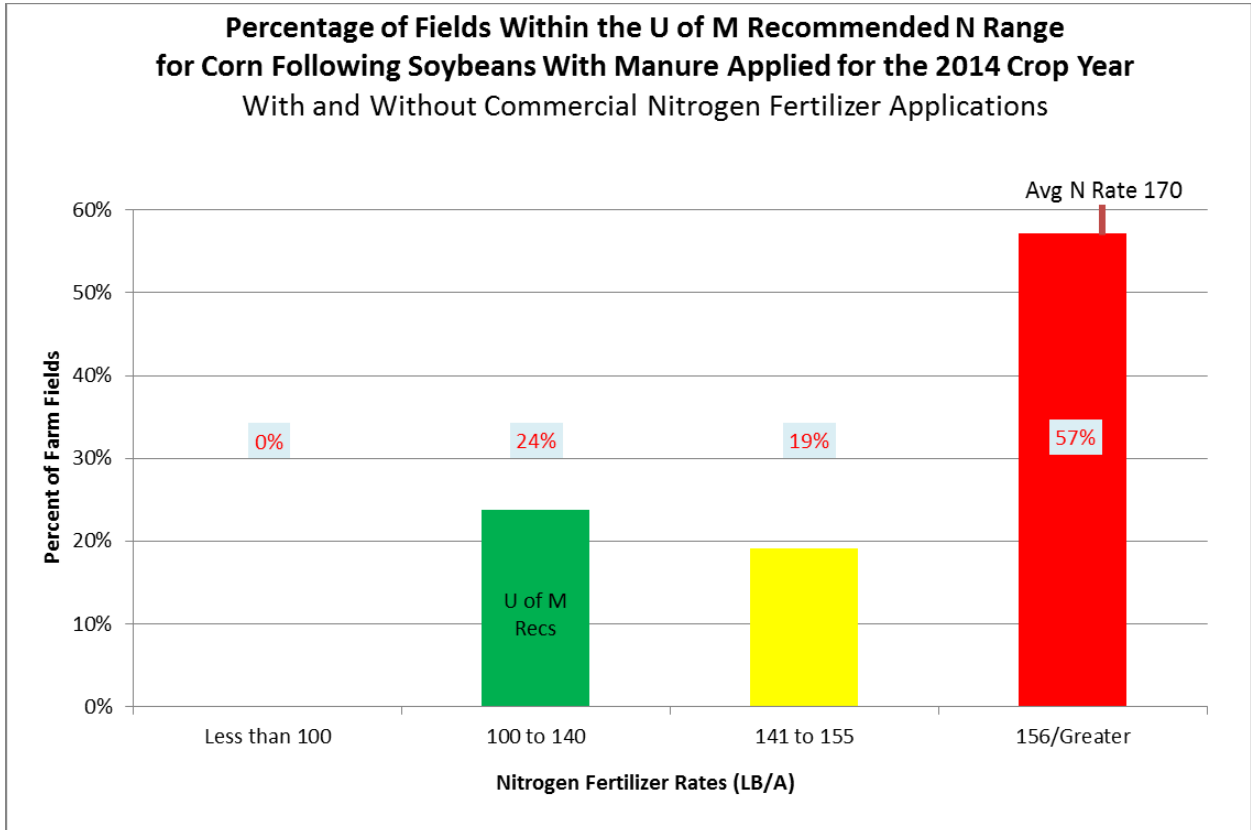


Figure 191. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 21 fields.

Table 171. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 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	166	143	174
Avg N Rate LB/A	No Data	123	151	196

Figure 192 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 172 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 192.

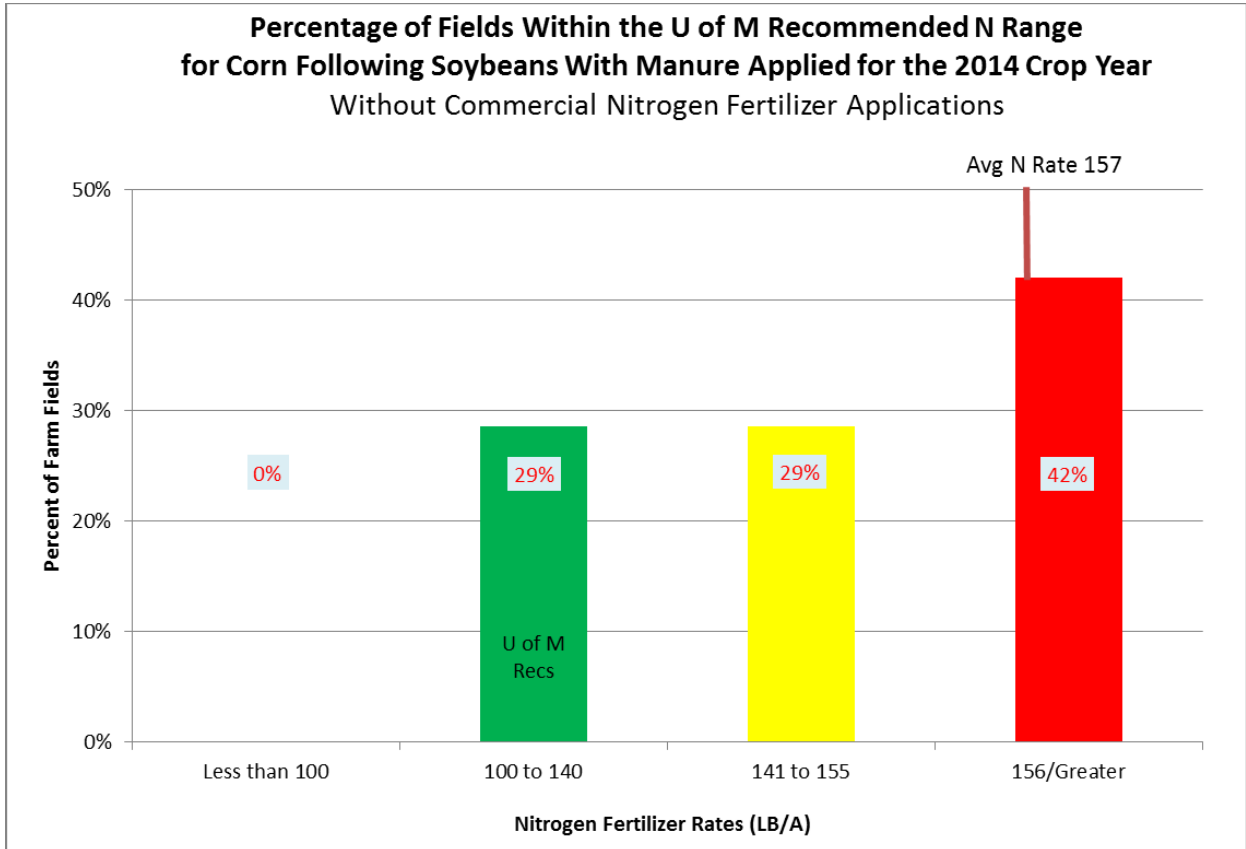


Figure 192. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2014: 7 fields.

Table 172. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and no commercial nitrogen fertilizer for the 2014 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	185	123	179
Avg N Rate LB/A	No Data	120	150	187

Figure 193 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 173 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 193.

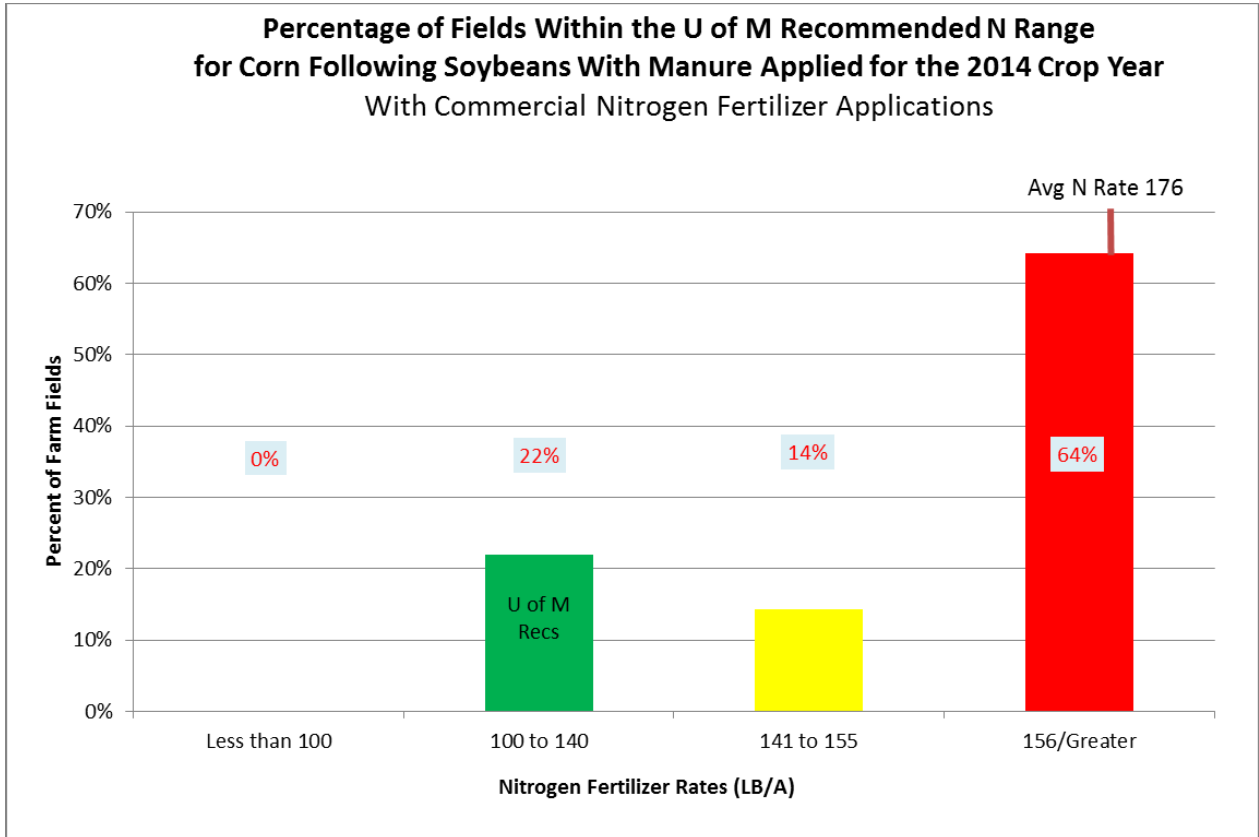


Figure 193. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 14 fields.

Table 173. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2014 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	153	163	172
Avg N Rate LB/A	No Data	125	153	199

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

Less than five farmers reported planting corn following soybeans 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 Soybeans

Figure 194 details the distribution of nitrogen rates in the SW 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 174 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 194.

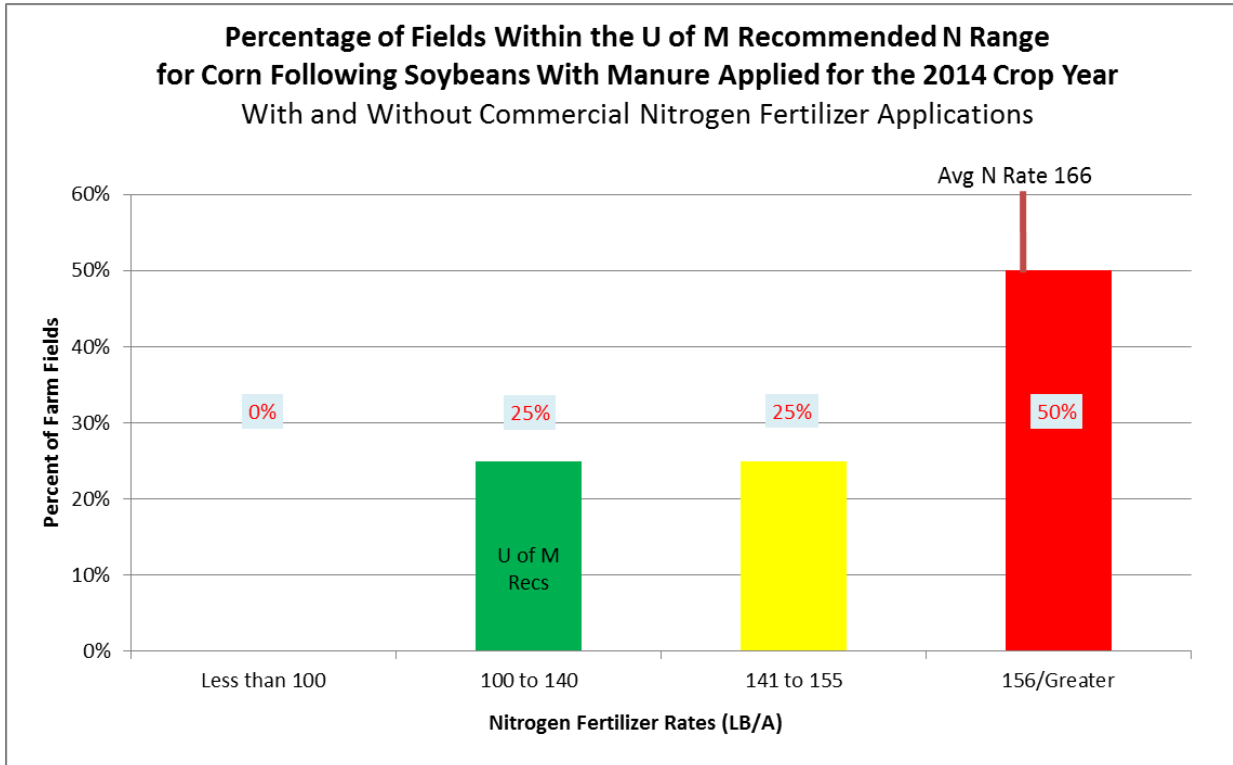


Figure 194. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 8 fields.

Table 174. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 crop year in the SW 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	185	168	177
Avg N Rate LB/A	No Data	115	150	200

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

- 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 195 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 175 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 195.

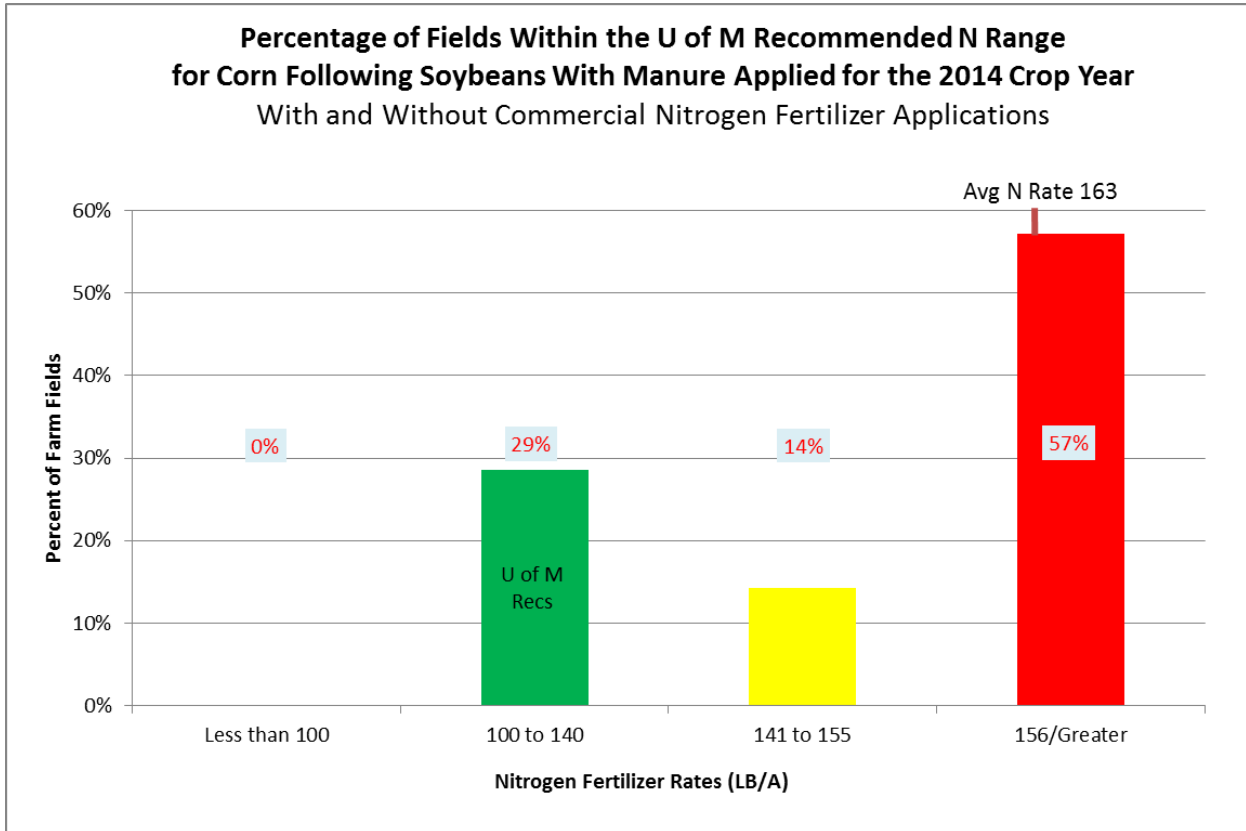


Figure 195. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2014: 7 fields.

Table 175. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 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	No Data	135	85	164
Avg N Rate LB/A	No Data	133	150	181

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 196 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 176 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 196.

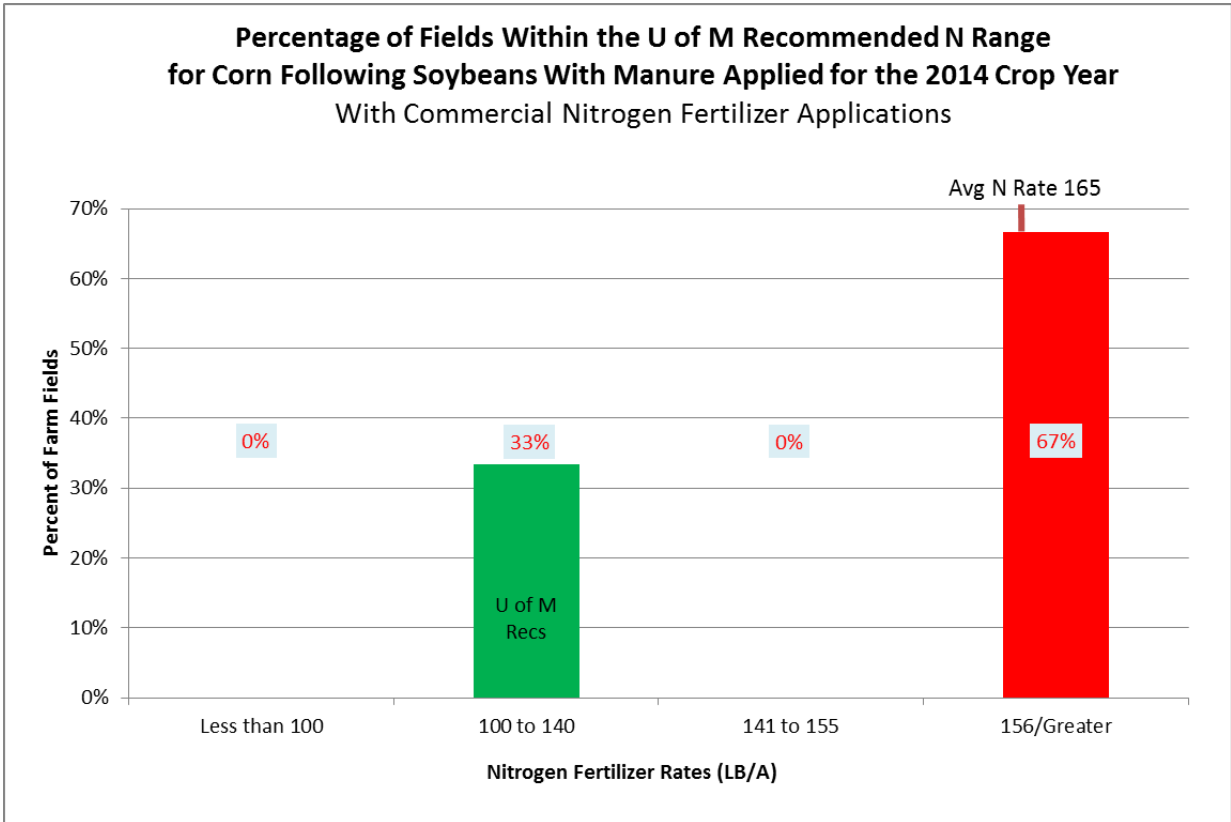


Figure 196. Percentage of fields within the U of M recommended N range for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP for 2014: 6 fields.

Table 176. Nitrogen rates and associated yields for corn following soybeans applied with dairy manure and commercial nitrogen fertilizer for the 2014 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	No Data	135	No Data	164
Avg N Rate LB/A	No Data	133	No Data	181

Statewide: Corn Following Corn

Figure 197 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 177 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 197.

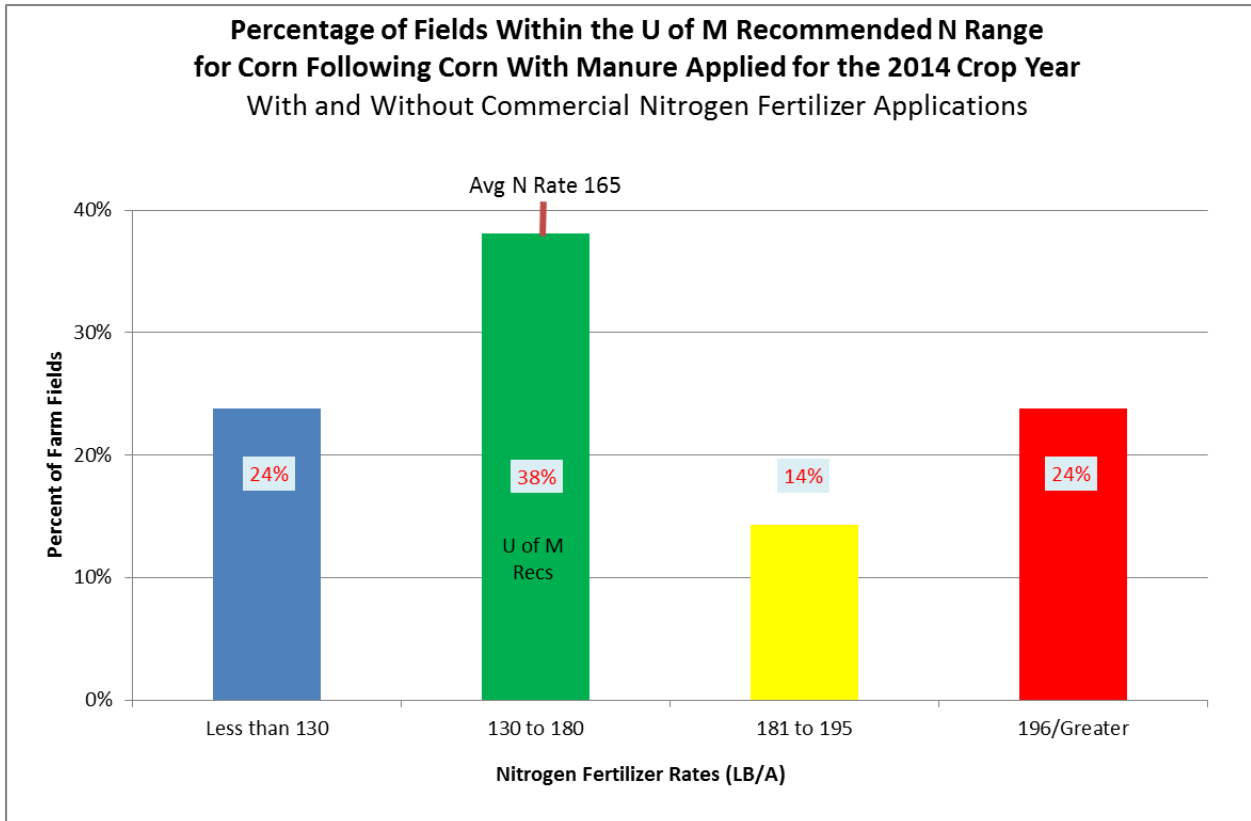


Figure 197. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 21 fields.

Table 177. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 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	175	155	155	172
Avg N Rate LB/A	92	158	190	233

Figure 198 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 178 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 198.

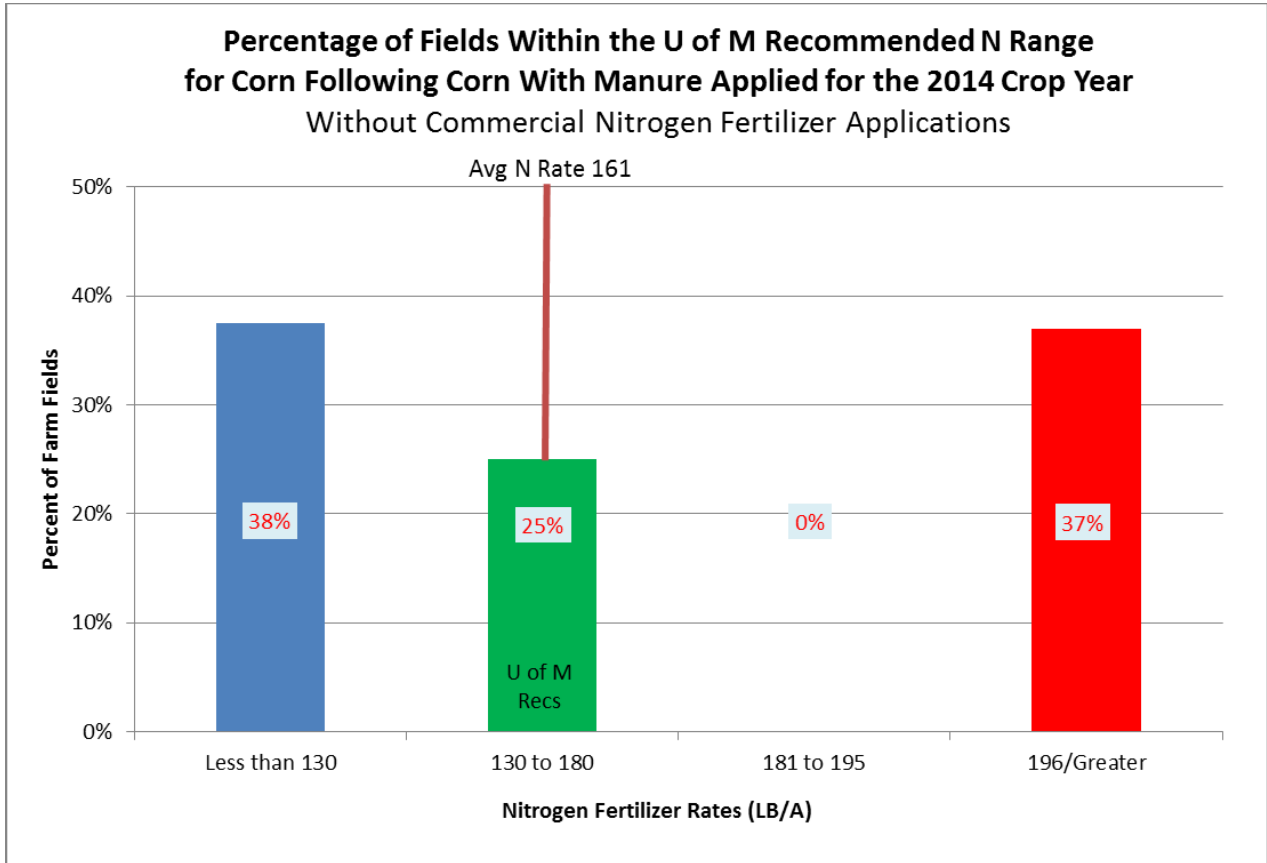


Figure 198. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2014: 8 fields.

Table 178. Nitrogen rates and associated yields for corn following corn applied with dairy manure and no commercial nitrogen fertilizer for the 2014 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	157	135	No Data	186
Avg N Rate LB/A	83	145	No Data	250

Figure 199 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 179 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 199.

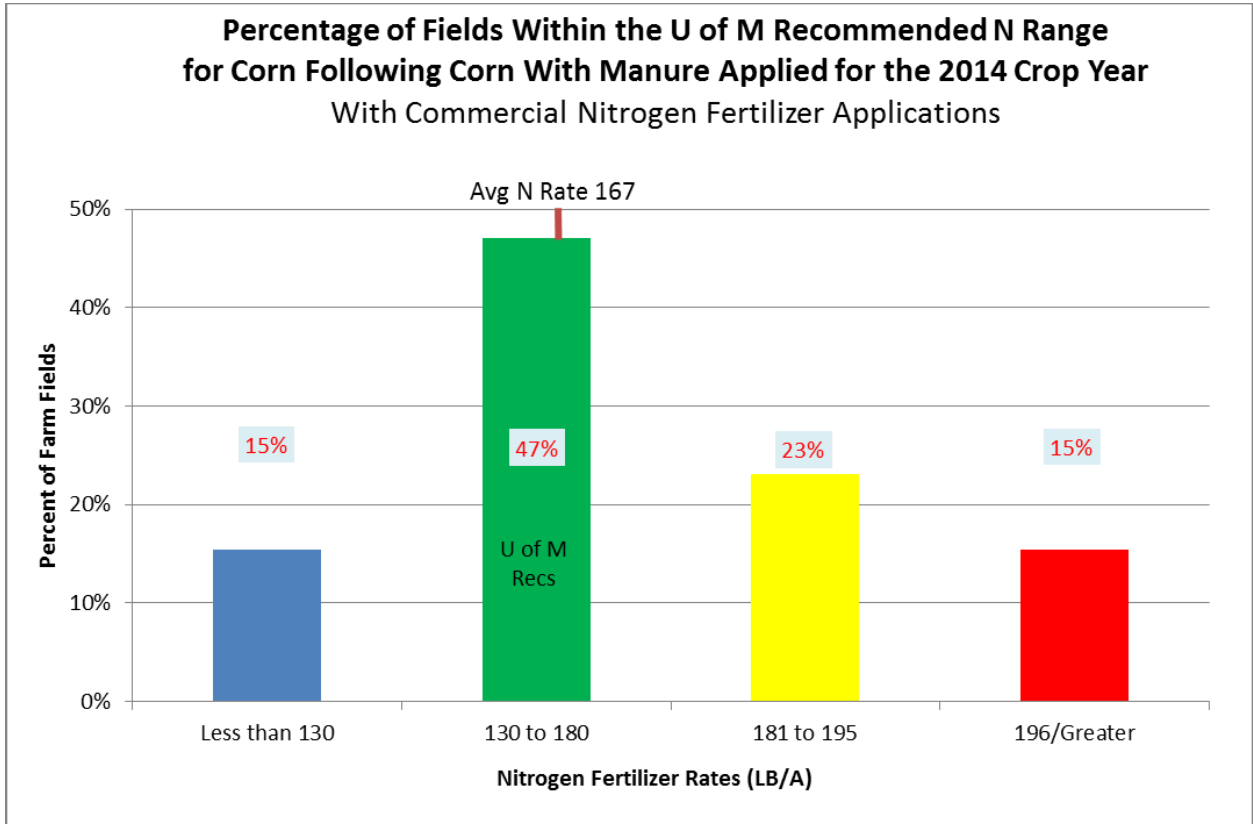


Figure 199. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 13 fields.

Table 179. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2014 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	202	162	155	149
Avg N Rate LB/A	107	162	190	207

Southeastern Region: Corn Following Corn

Less than five farmers reported planting corn following corn 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 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

Less than five farmers reported planting corn following corn 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

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 200 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 180 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 200.

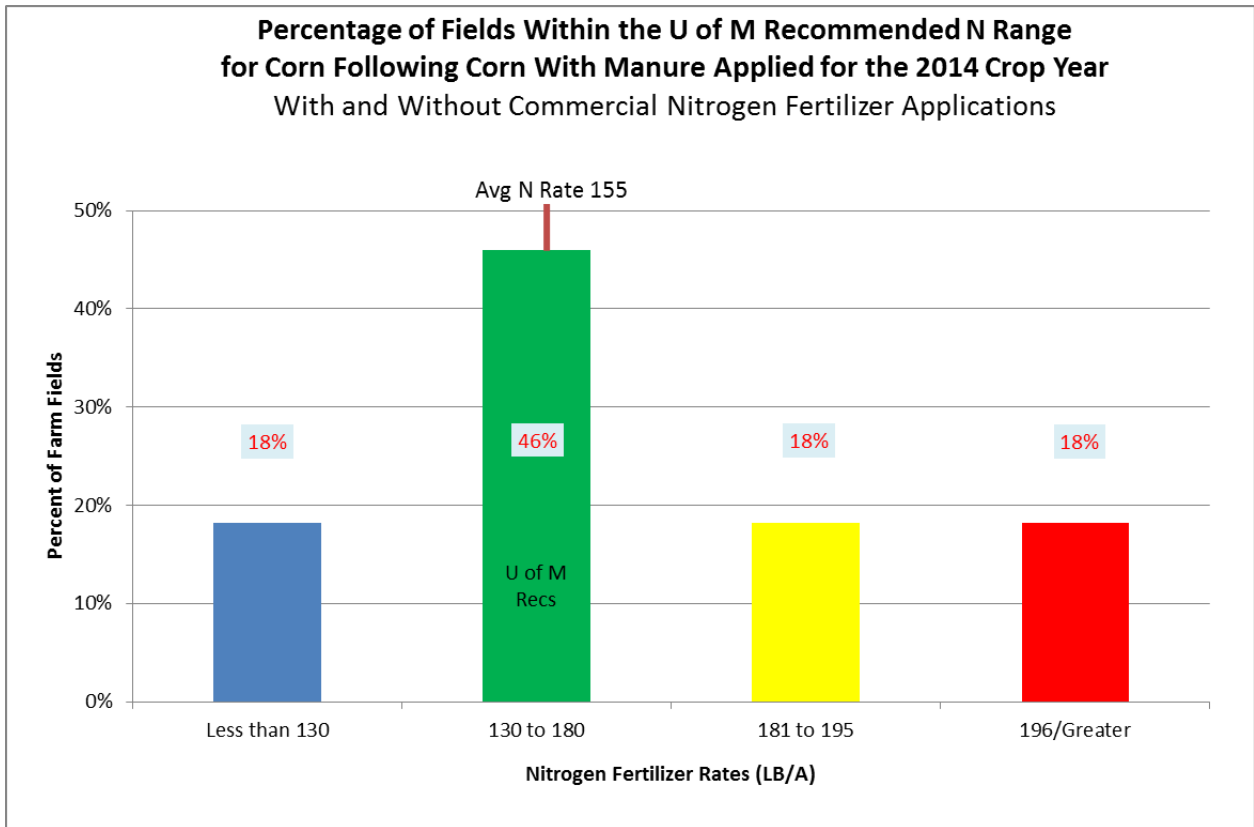


Figure 200. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 11 fields.

Table 180. Nitrogen rates and associated yields for corn following corn applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 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	140	148	143	149
Avg N Rate LB/A	65	157	193	207

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 201 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 181 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 201.

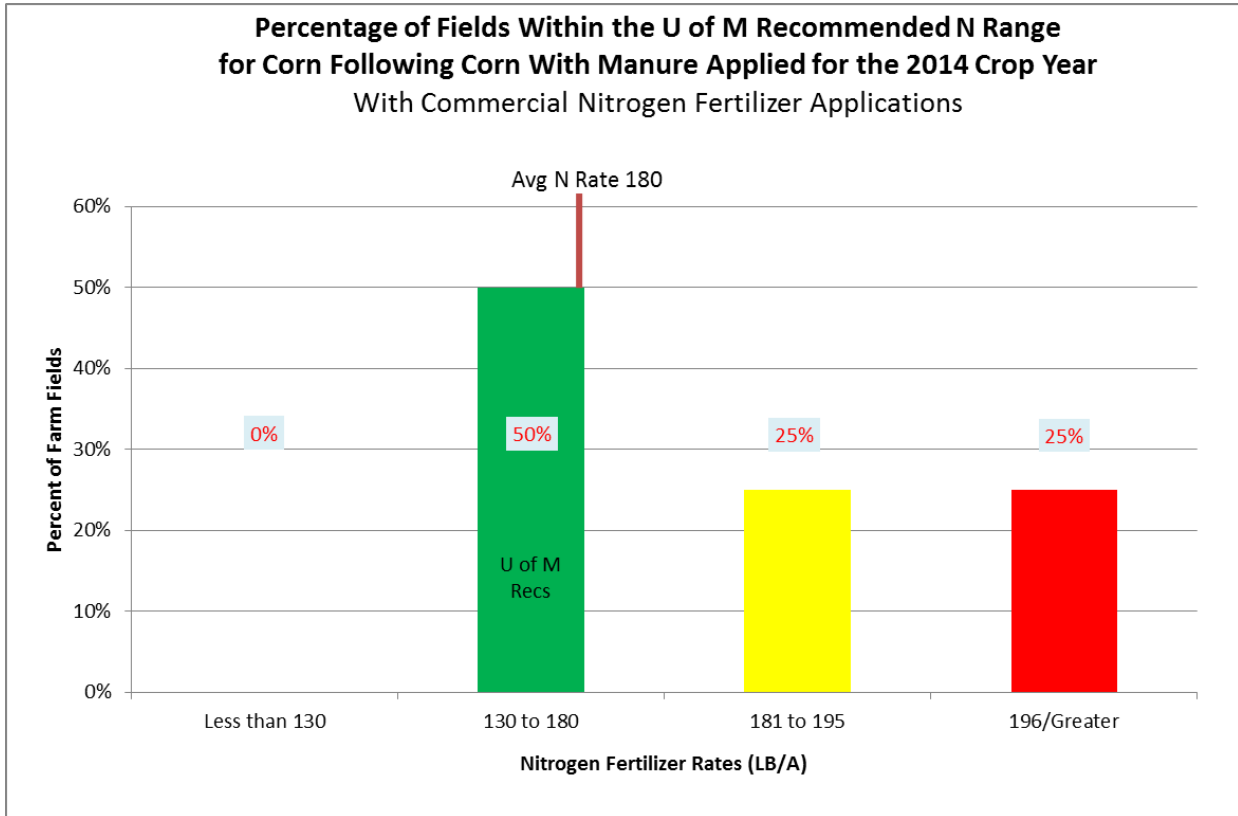


Figure 201. Percentage of fields within the U of M recommended N range for corn following corn applied with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 8 fields.

Table 181. Nitrogen rates and associated yields for corn following corn applied with dairy manure and commercial nitrogen fertilizer for the 2014 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	No Data	147	143	149
Avg N Rate LB/A	No Data	161	193	207

Statewide: Corn Following Corn Following Alfalfa

Figure 202 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 182 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 202.

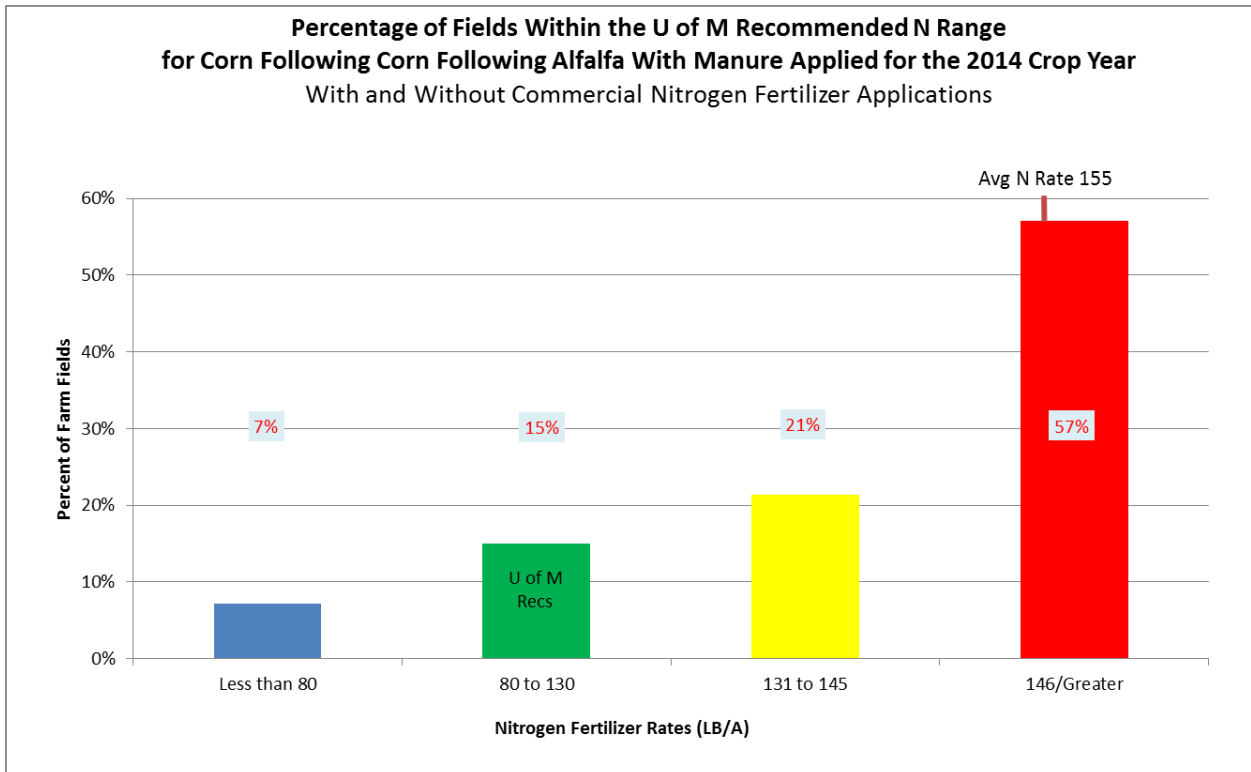


Figure 202. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 14 fields.

Table 182. 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 2014 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	175	161	180	175
Avg N Rate LB/A	70	97	141	185

Figure 203 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 183 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 203.

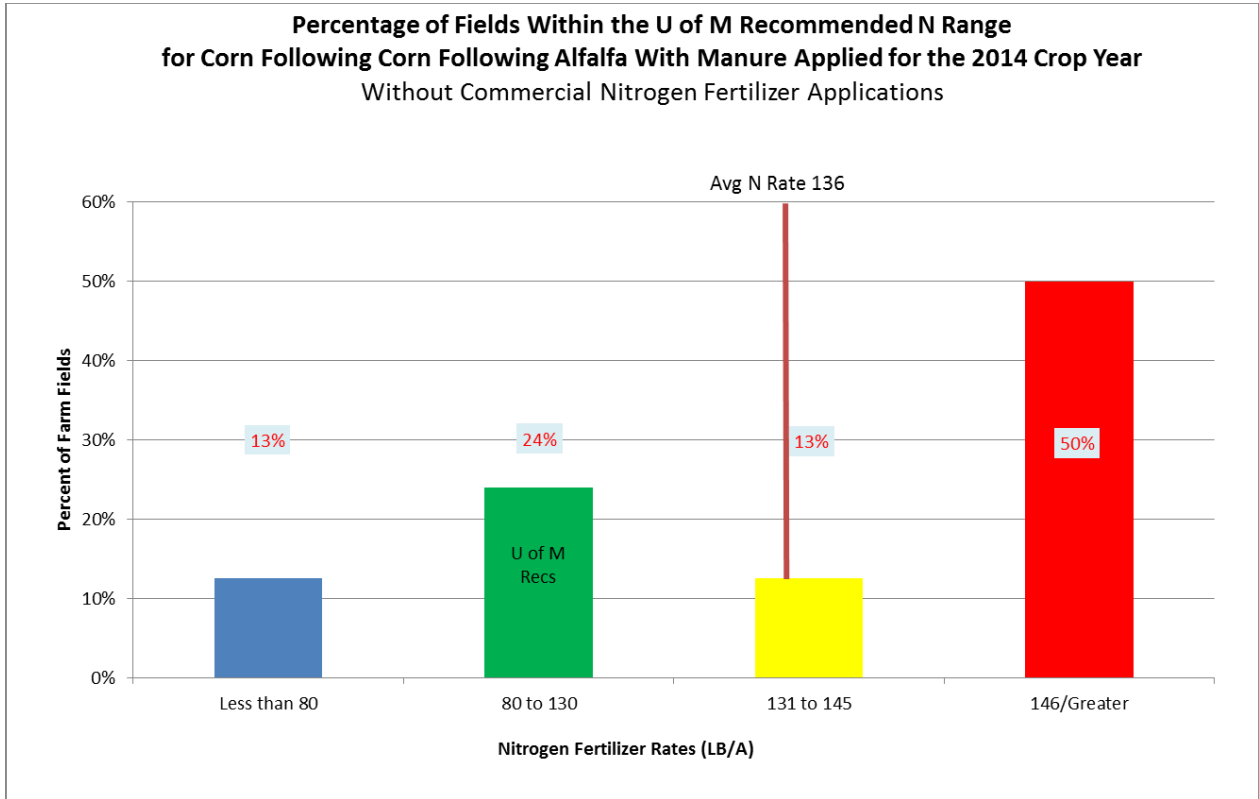


Figure 203. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2014: 8 fields.

Table 183. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2014 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	175	161	210	187
Avg N Rate LB/A	70	97	142	170

Figure 204 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 184 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 204.

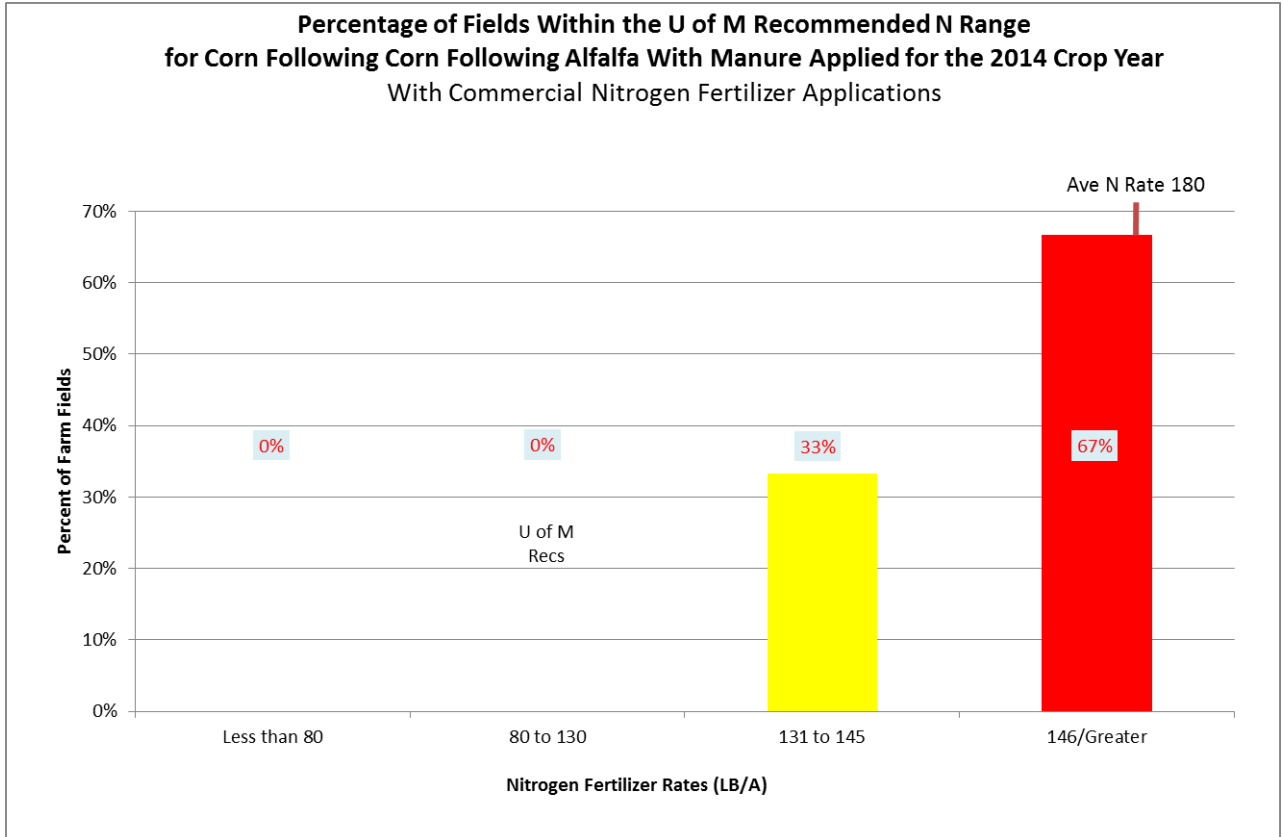


Figure 204. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 6 fields.

Table 184. Nitrogen rates and associated yields for corn following corn following alfalfa applied with dairy manure and commercial nitrogen fertilizer for the 2014 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	165	164
Avg N Rate LB/A	No Data	No Data	140	199

Southeastern Region: Corn Following Corn Following Alfalfa

Figure 205 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 185 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 205.

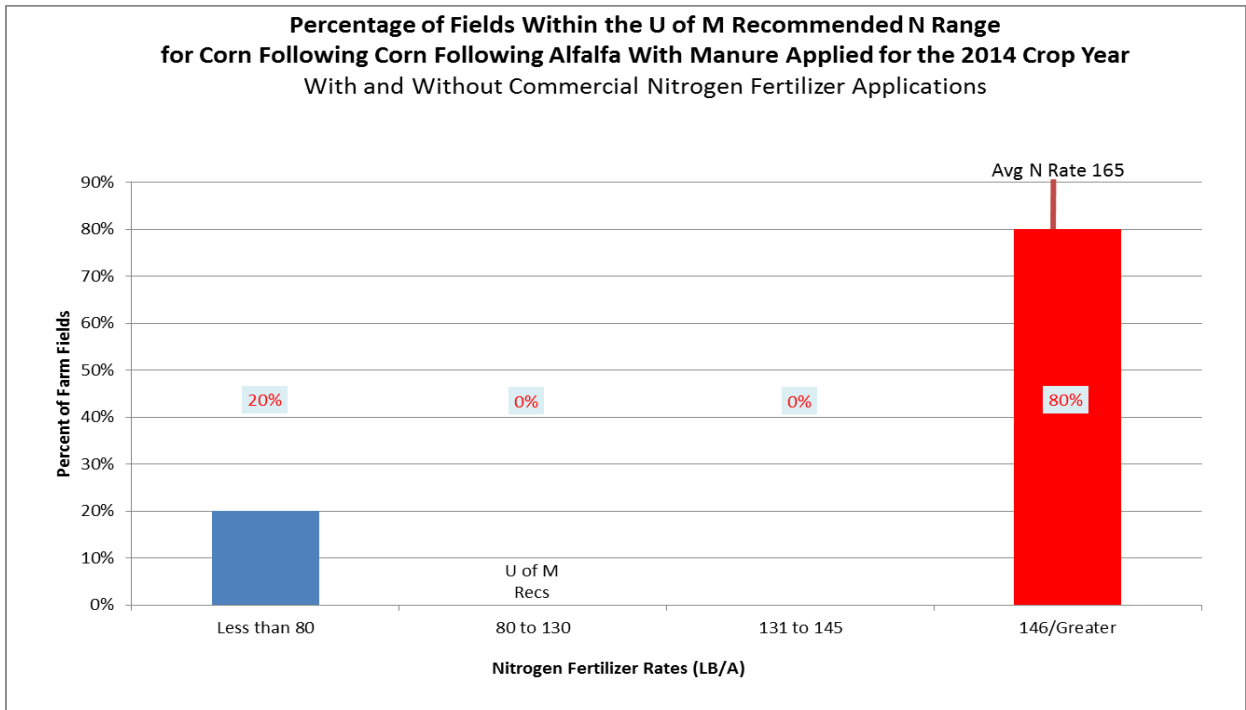


Figure 205. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the SE BMP region for 2014: 5 fields.

Table 185. 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 2014 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	175	No Data	No Data	183
Avg N Rate LB/A	70	No Data	No Data	189

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.
- With dairy 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 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 206 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 186 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 206.

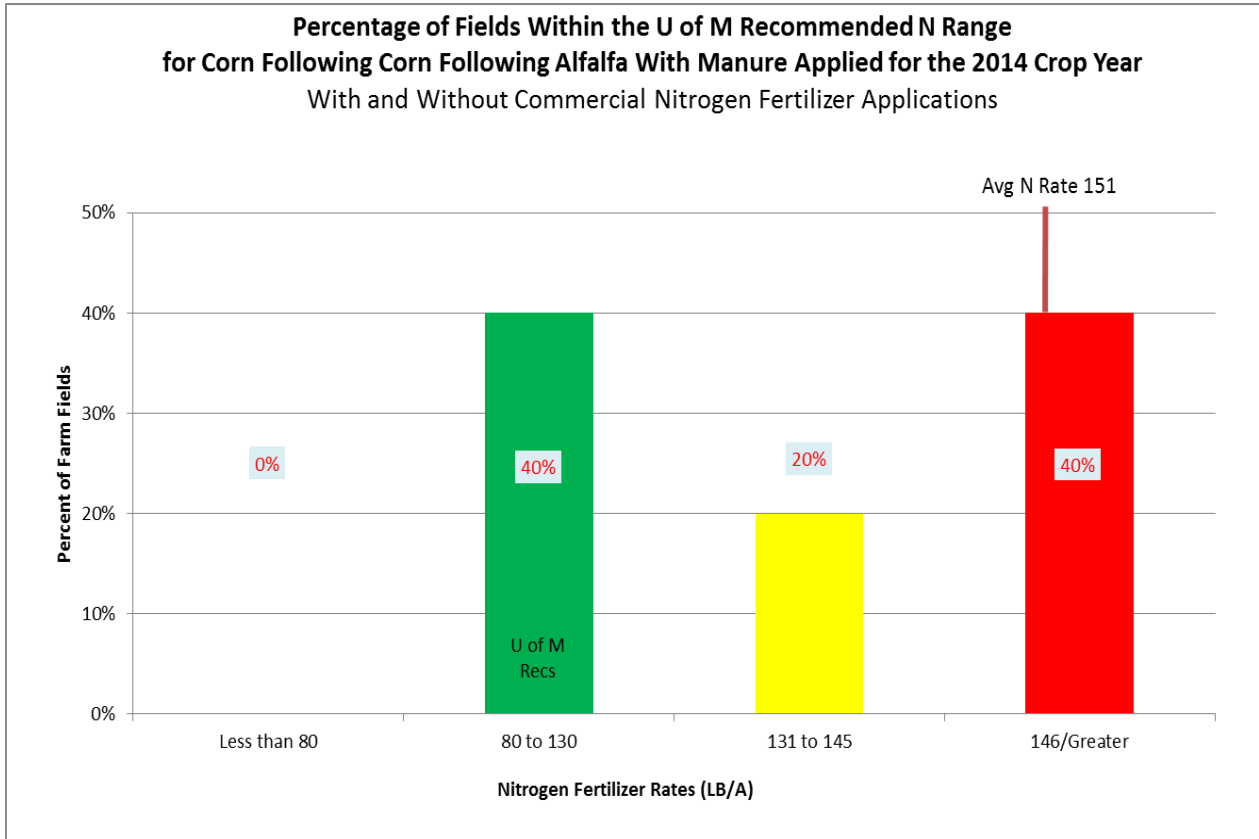


Figure 206. Percentage of fields within the U of M recommended N range for corn following corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in the IRR BMP region for 2014: 5 fields.

Table 186. 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 2014 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	161	150	151
Avg N Rate LB/A	No Data	97	140	210

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

- With dairy manure and no commercial nitrogen fertilizer.
- With dairy manure and commercial nitrogen fertilizer.

Statewide: Corn Following Alfalfa

Figure 207 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 187 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 207.

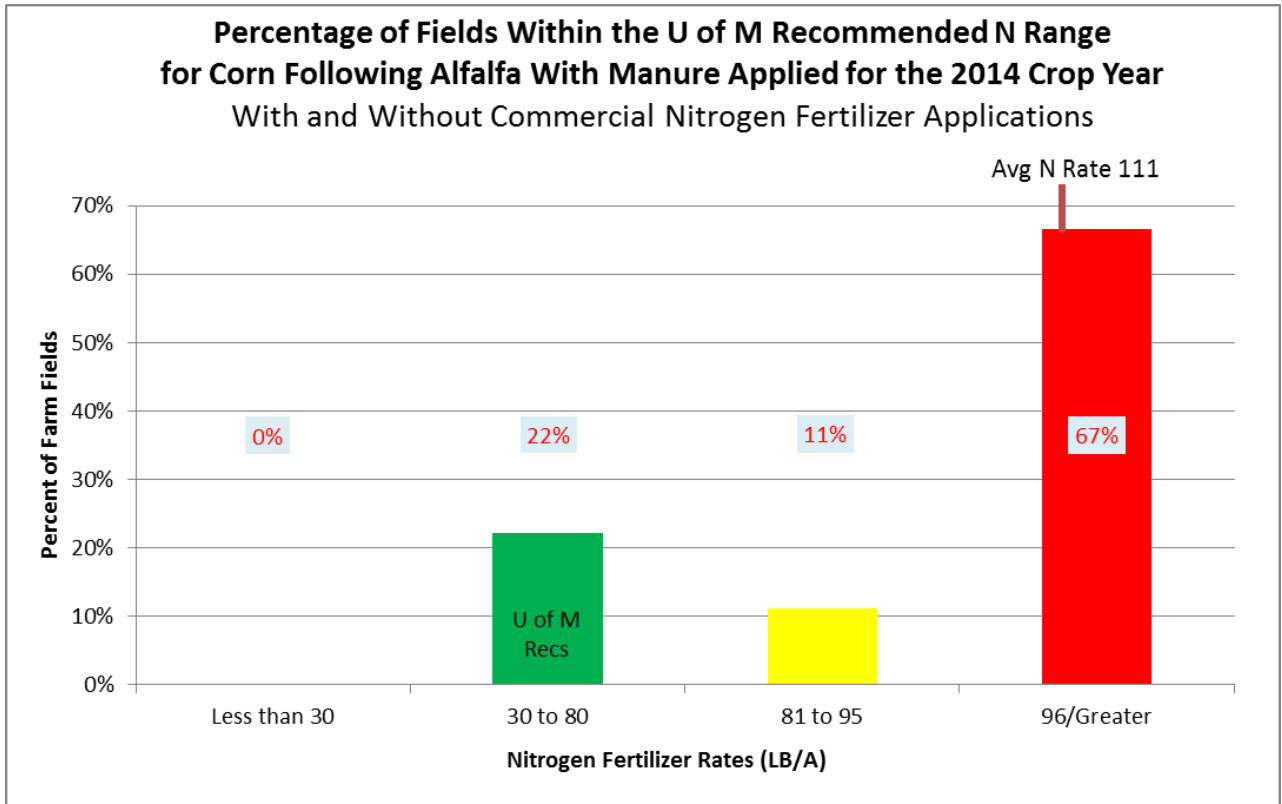


Figure 207. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer in Minnesota for 2014: 9 fields.

Table 187. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure or with dairy manure and commercial nitrogen fertilizer for the 2014 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	150	175	171
Avg N Rate LB/A	No Data	45	90	137

Figure 208 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 188 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 208.

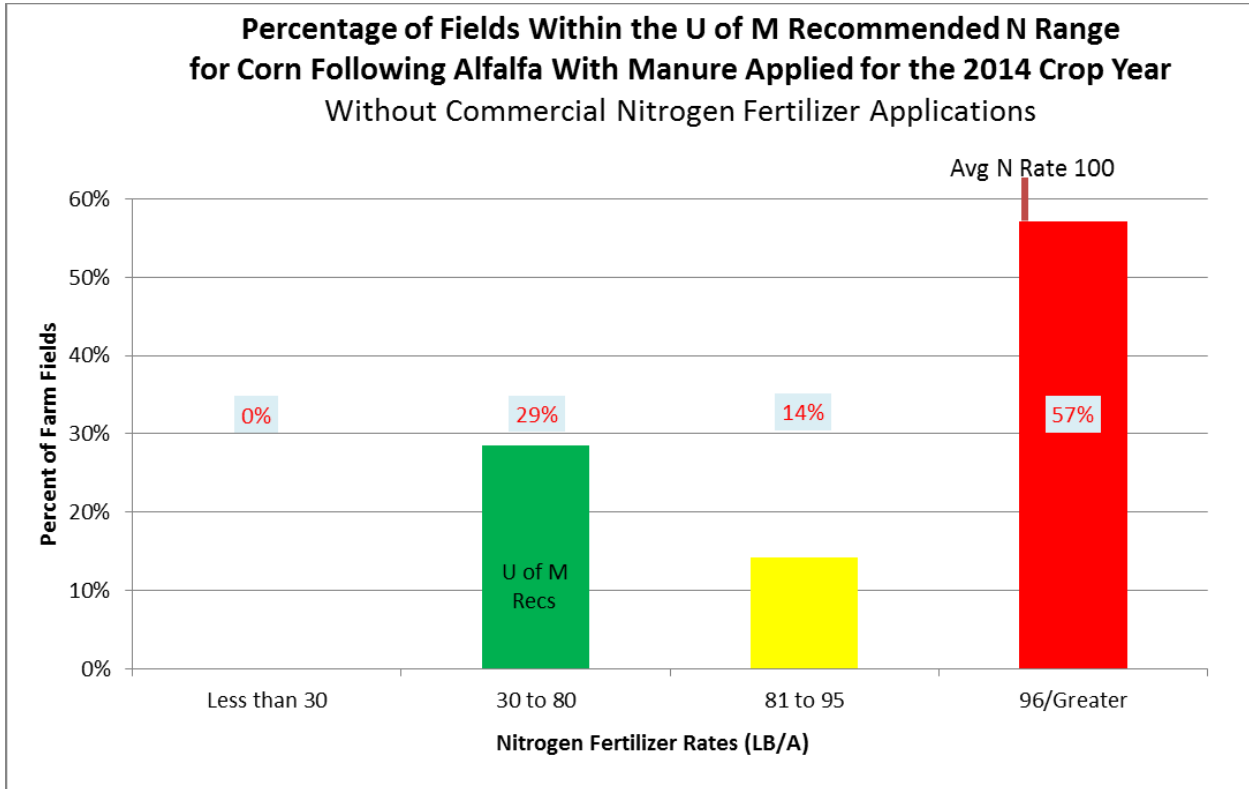


Figure 208. Percentage of fields within the U of M recommended N range for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer in Minnesota for 2014: 7 fields.

Table 188. Nitrogen rates and associated yields for corn following alfalfa applied with dairy manure and no commercial nitrogen fertilizer for the 2014 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	150	175	171
Avg N Rate LB/A	No Data	45	90	130

Less than five farmers reported planting corn following alfalfa in Minnesota on fields applied with dairy 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 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 209 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 189 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 209.

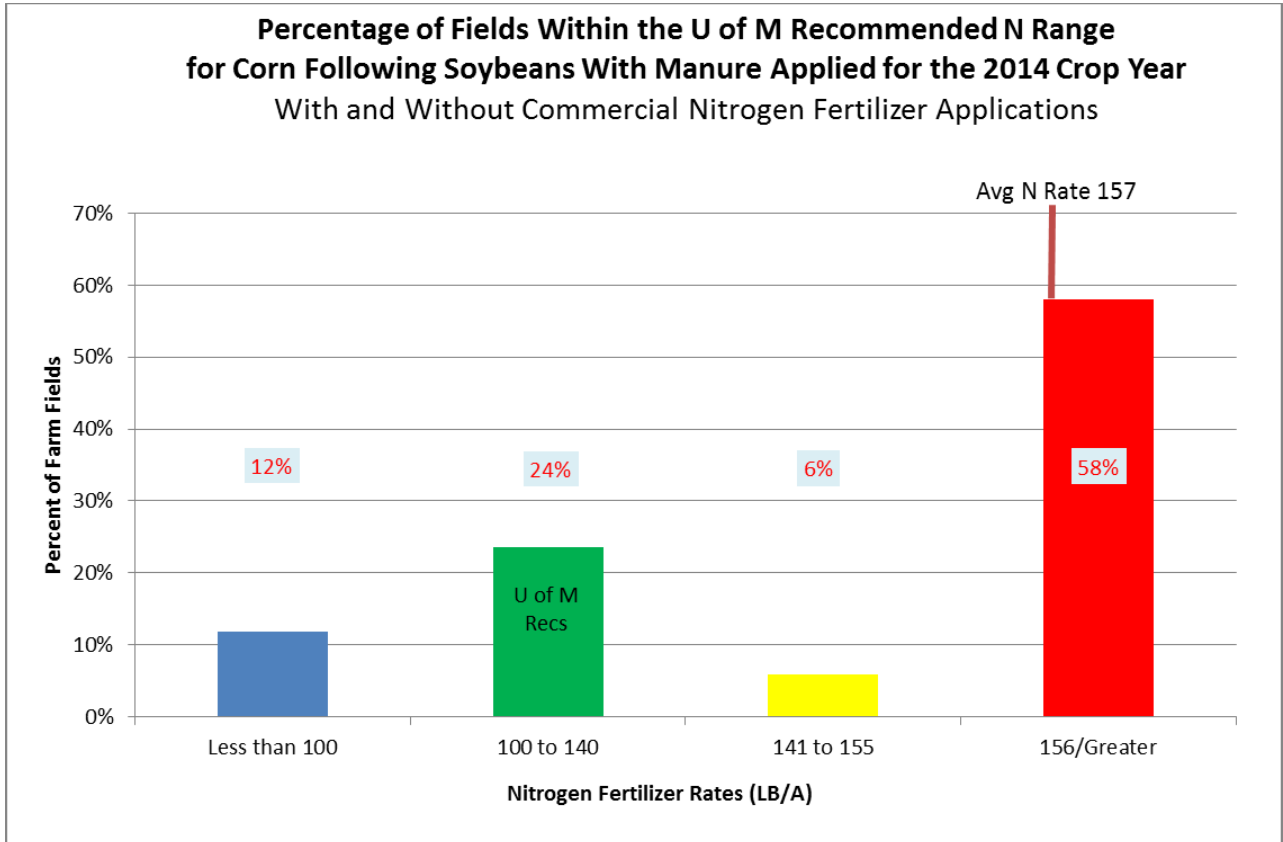


Figure 209. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2014: 17 fields.

Table 189. Nitrogen rates and associated yields for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	171	210	181
Avg N Rate LB/A	68	111	150	194

Figure 210 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with beef manure and no 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.

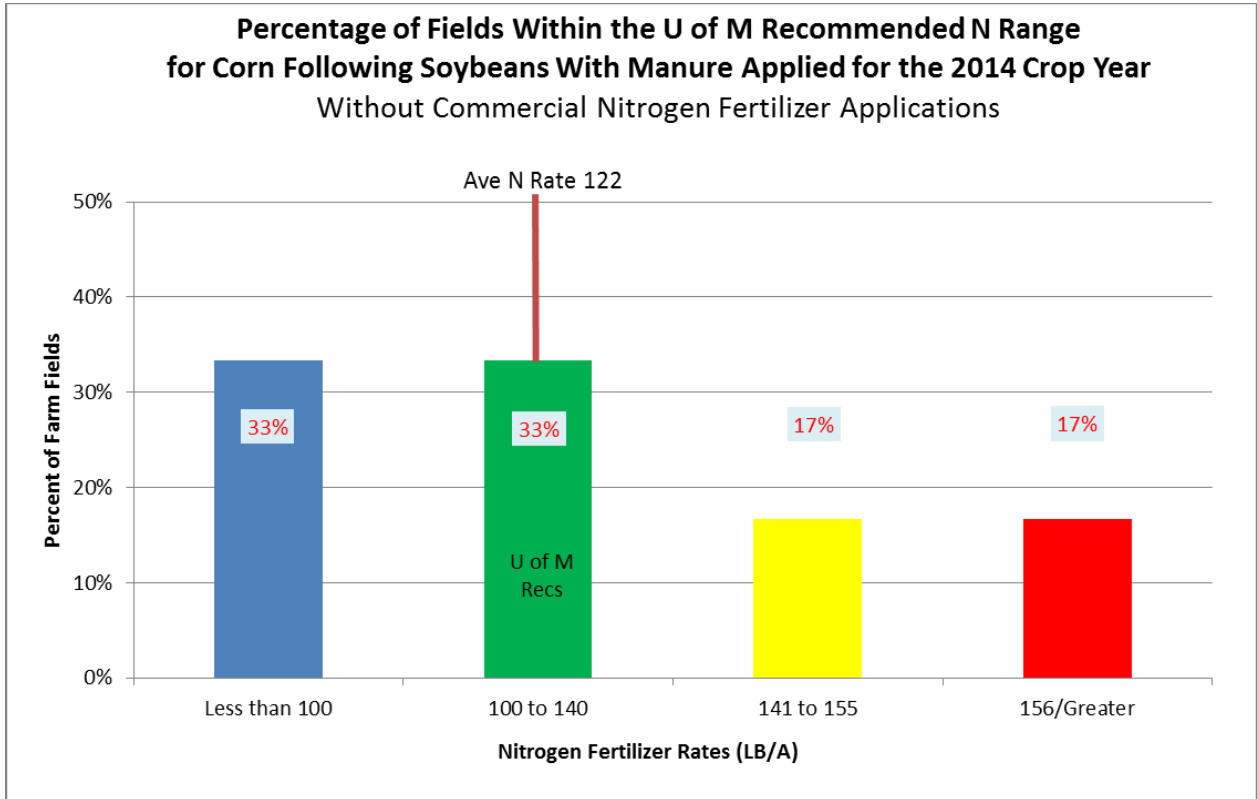


Figure 210. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure and no commercial nitrogen fertilizer in Minnesota for 2014: 6 fields.

Table 190. Nitrogen rates and associated yields for corn following soybeans applied with beef manure and no commercial nitrogen fertilizer for the 2014 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	163	210	190
Avg N Rate LB/A	68	122	150	200

Figure 211 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 191 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 211.

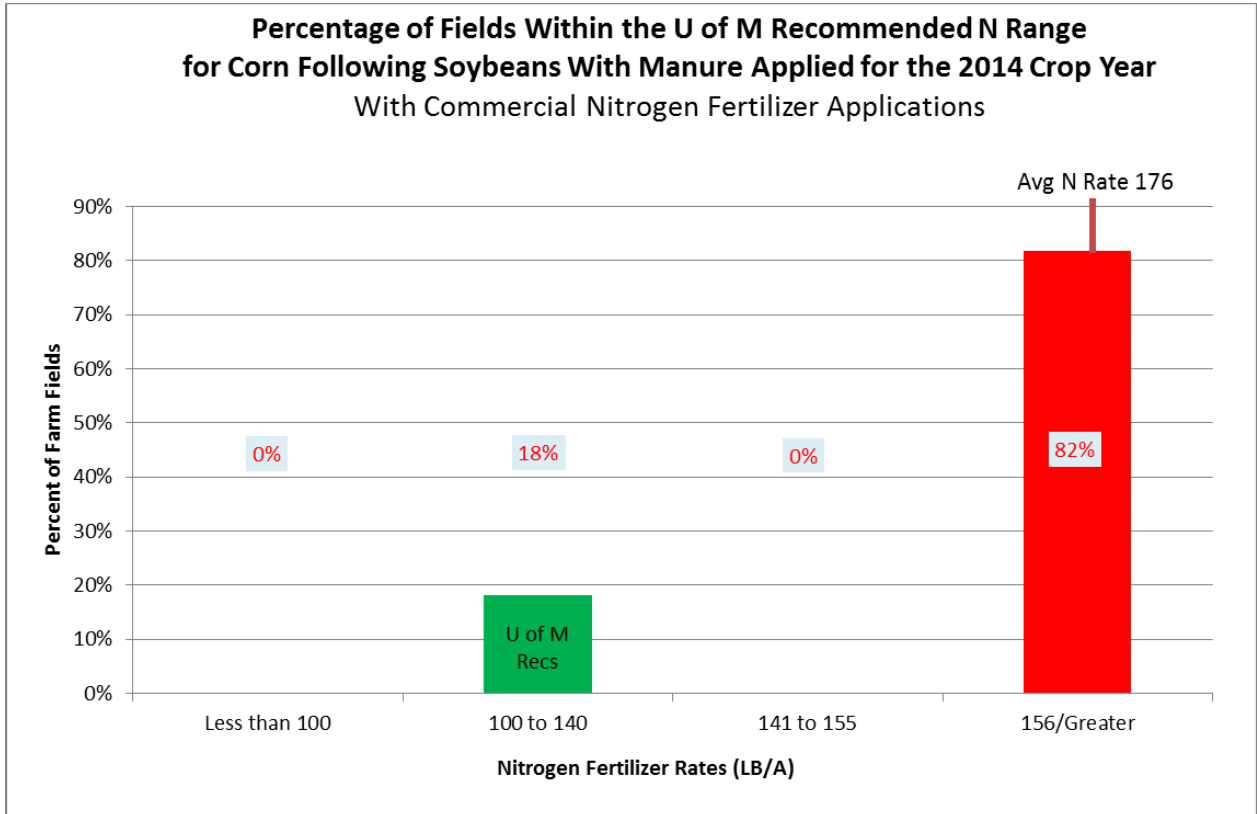


Figure 211. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2014: 11 fields.

Table 191. Nitrogen rates and associated yields for corn following soybeans applied with beef manure and commercial nitrogen fertilizer for the 2014 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	180	No Data	180
Avg N Rate LB/A	No Data	100	No Data	193

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

Figure 212 details the distribution of nitrogen rates in the SC BMP region 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 192 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 212.

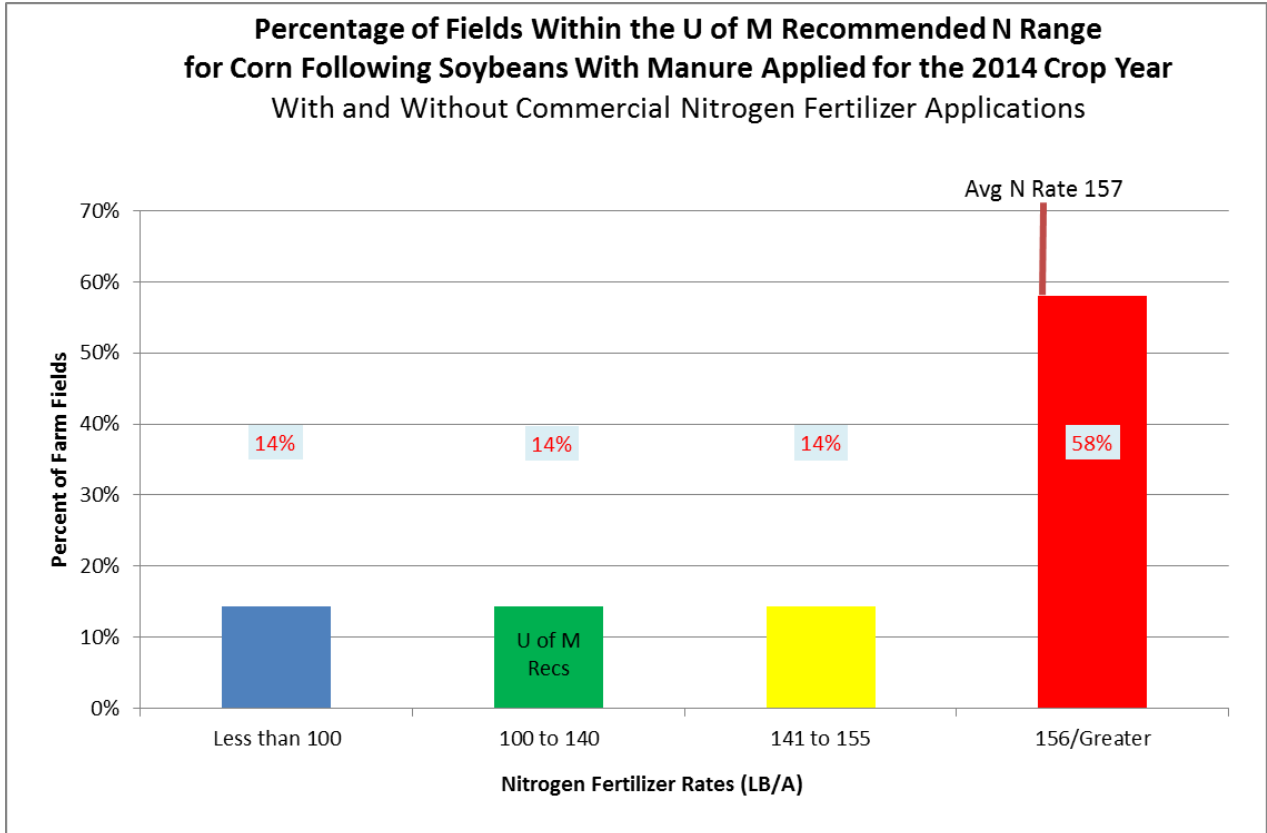


Figure 212. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 7 fields.

Table 192. Nitrogen rates and associated yields for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	185	180	210	183
Avg N Rate LB/A	90	100	150	190

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

Figure 213 details the distribution of nitrogen rates in the SC BMP region for corn following soybeans applied with beef manure and 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.

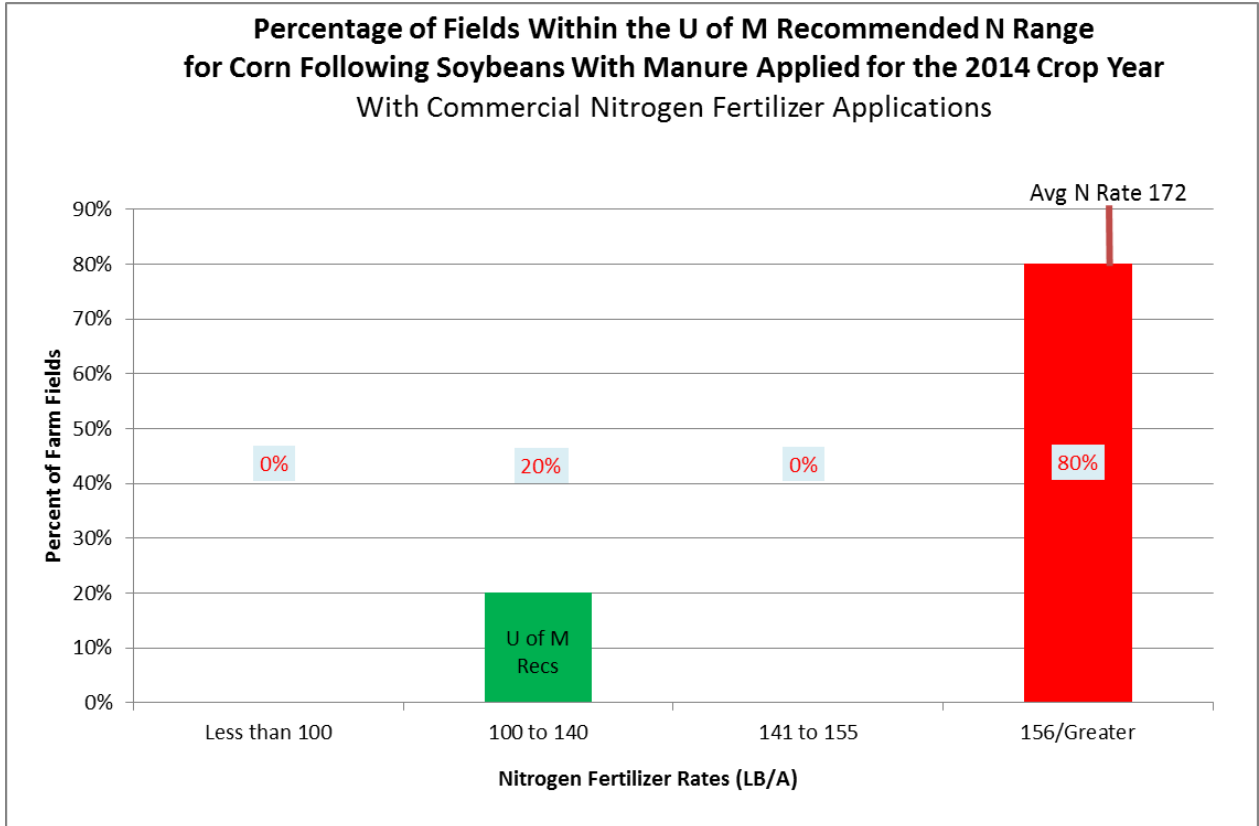


Figure 213. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 5 fields.

Table 193. Nitrogen rates and associated yields for corn following soybeans applied with beef manure and commercial nitrogen fertilizer for the 2014 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	No Data	183
Avg N Rate LB/A	No Data	100	No Data	190

Southwestern and West Central Region: Corn Following Soybeans

Figure 214 details the distribution of nitrogen rates in the SW BMP region 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 194 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 214.

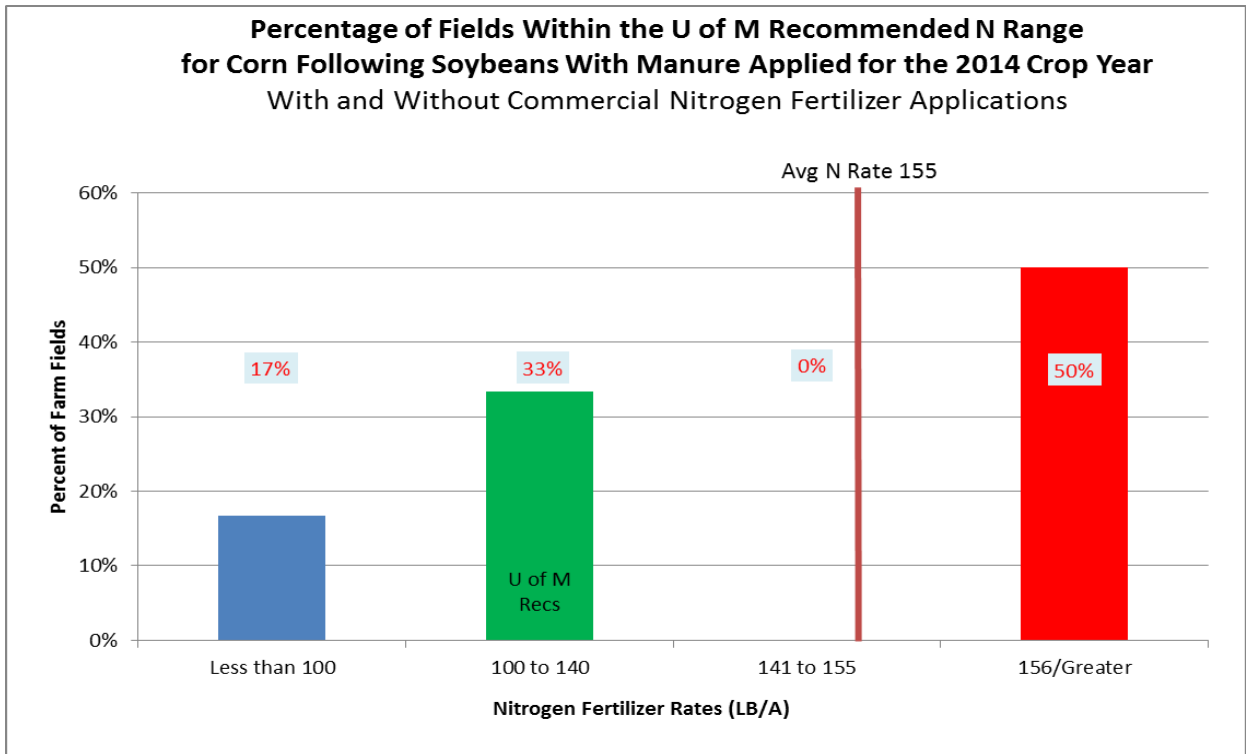


Figure 214. Percentage of fields within the U of M recommended N range for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 6 fields.

Table 194. Nitrogen rates and associated yields for corn following soybeans applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	130	165	No Data	186
Avg N Rate LB/A	45	115	No Data	218

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

- 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 215 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 195 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 215.

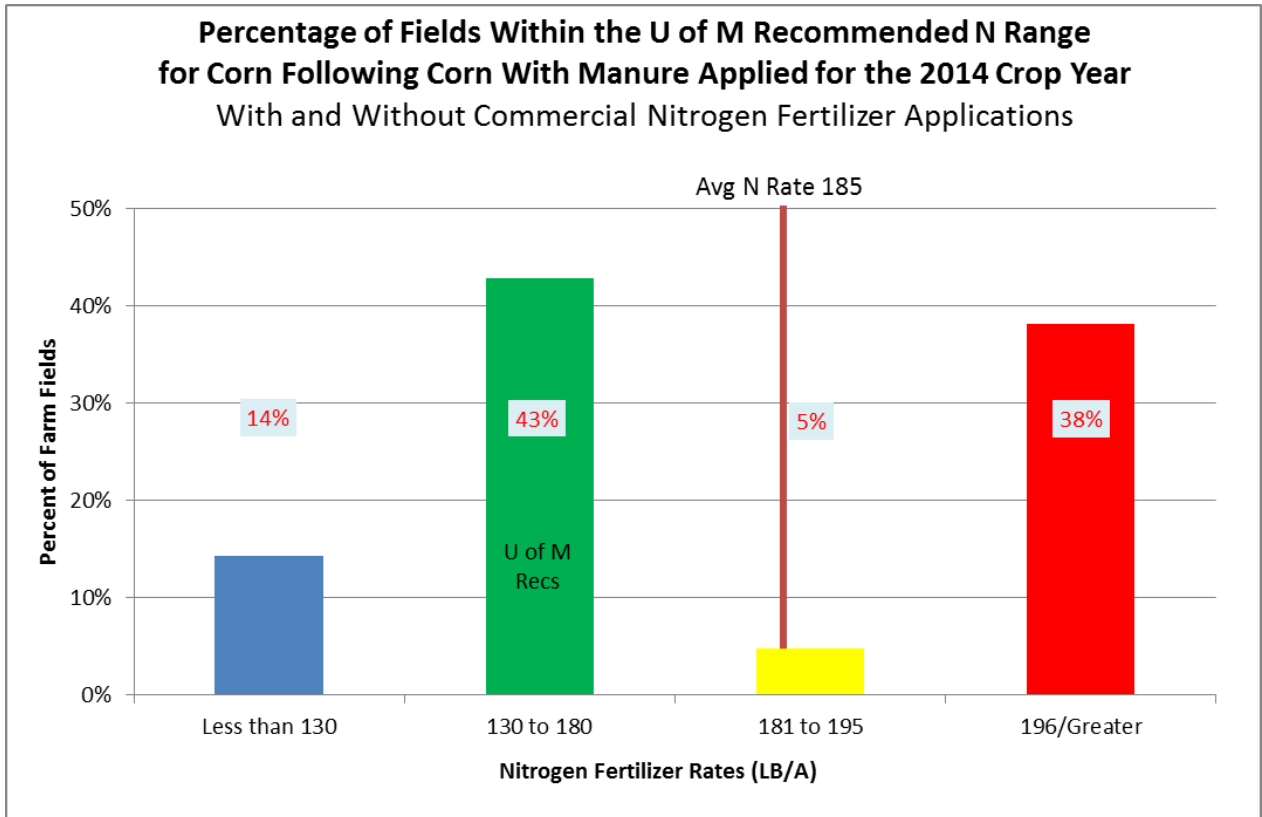


Figure 215. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer in Minnesota for 2014: 21 fields.

Table 195. Nitrogen rates and associated yields for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	196	180	200	177
Avg N Rate LB/A	116	162	195	236

Less than five farmers reported planting corn following corn in Minnesota on fields applied with beef manure and no commercial nitrogen fertilizer.

Figure 216 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 196 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 216.

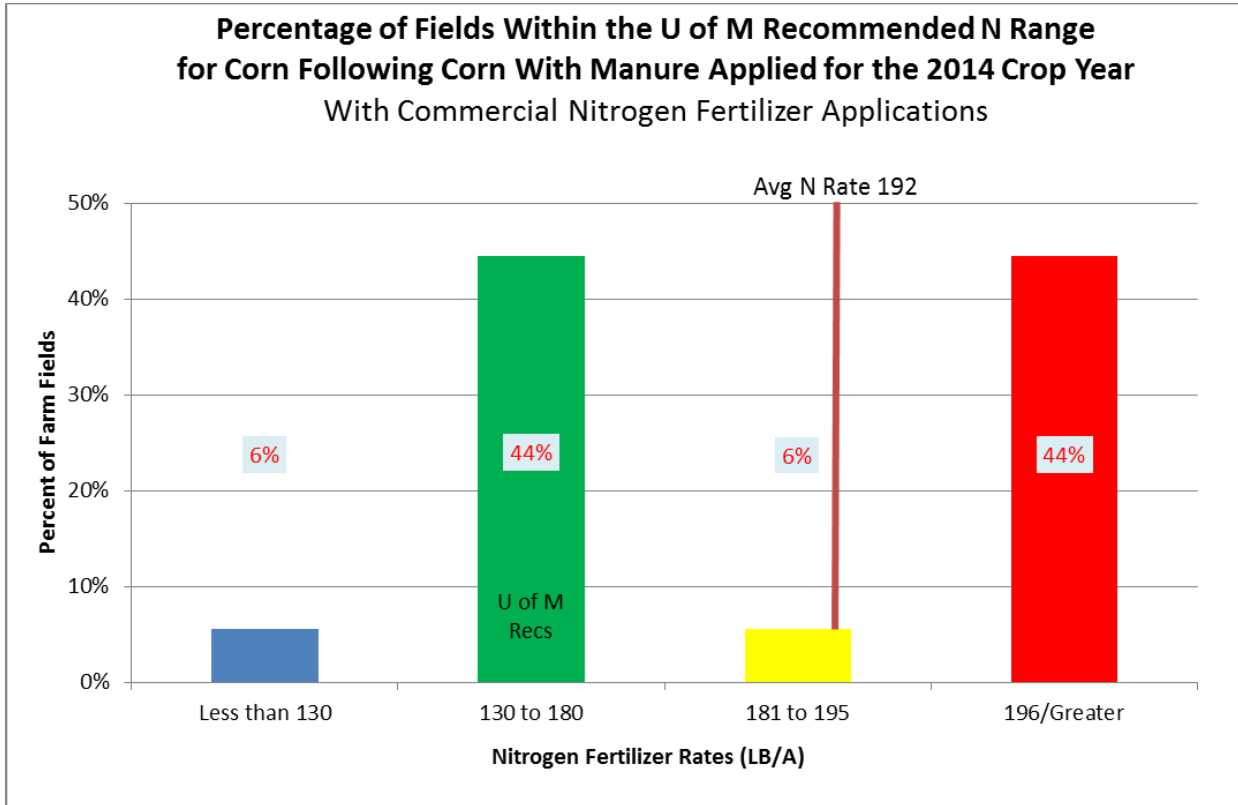


Figure 216. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and commercial nitrogen fertilizer in Minnesota for 2014: 18 fields.

Table 196. Nitrogen rates and associated yields for corn following corn applied with beef manure and commercial nitrogen fertilizer for the 2014 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	188	183	200	177
Avg N Rate LB/A	103	159	195	236

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

Figure 217 details the distribution of nitrogen rates in the SC BMP region 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 197 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 217.

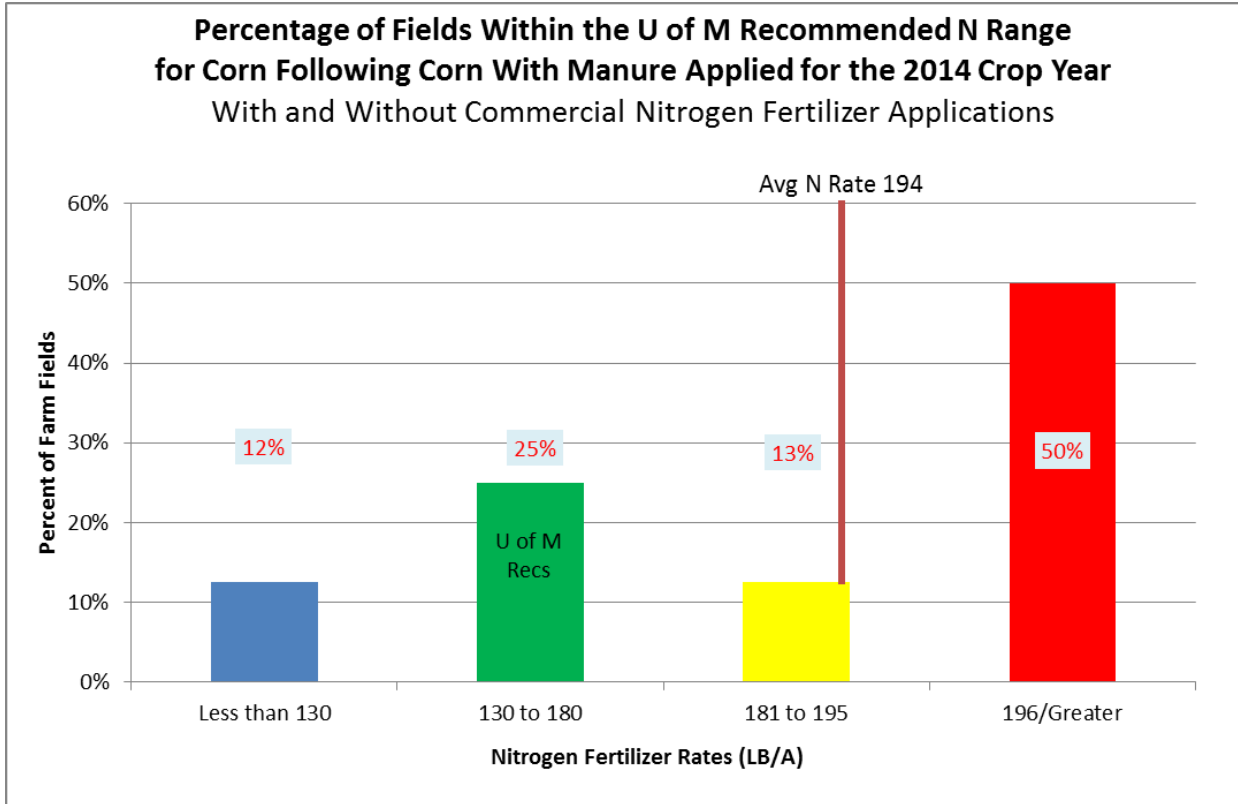


Figure 217. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 8 fields.

Table 197. Nitrogen rates and associated yields for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	188	183	200	184
Avg N Rate LB/A	103	180	195	233

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

Figure 218 details the distribution of nitrogen rates in the SC BMP region for corn following corn applied with beef manure and commercial nitrogen fertilizer using a “nitrogen to corn price ratio” of 0.05. Table 198 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 218.

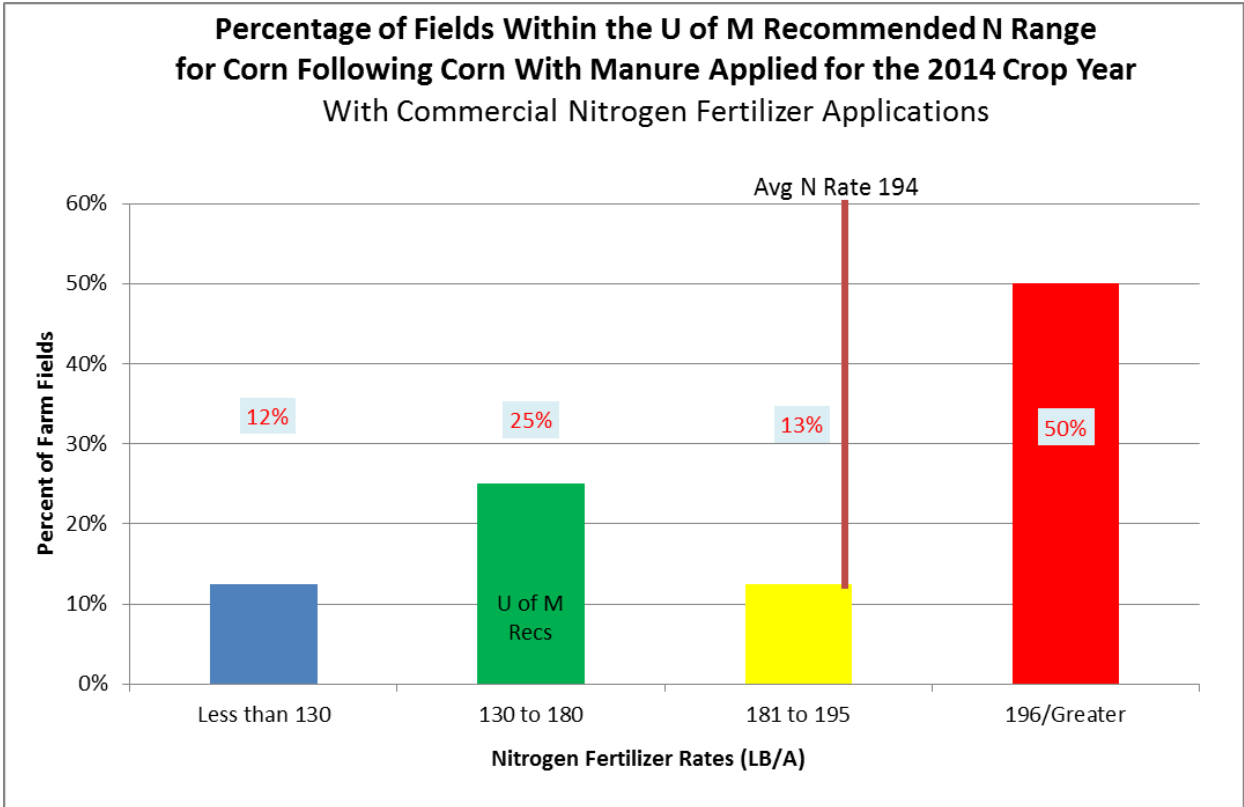


Figure 218. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 8 fields.

Table 198. Nitrogen rates and associated yields for corn following corn applied with beef manure and commercial nitrogen fertilizer for the 2014 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	188	183	200	184
Avg N Rate LB/A	103	180	195	223

Southwestern and West Central Region: Corn Following Corn

Figure 219 details the distribution of nitrogen rates in the SW BMP region 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 199 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 219.

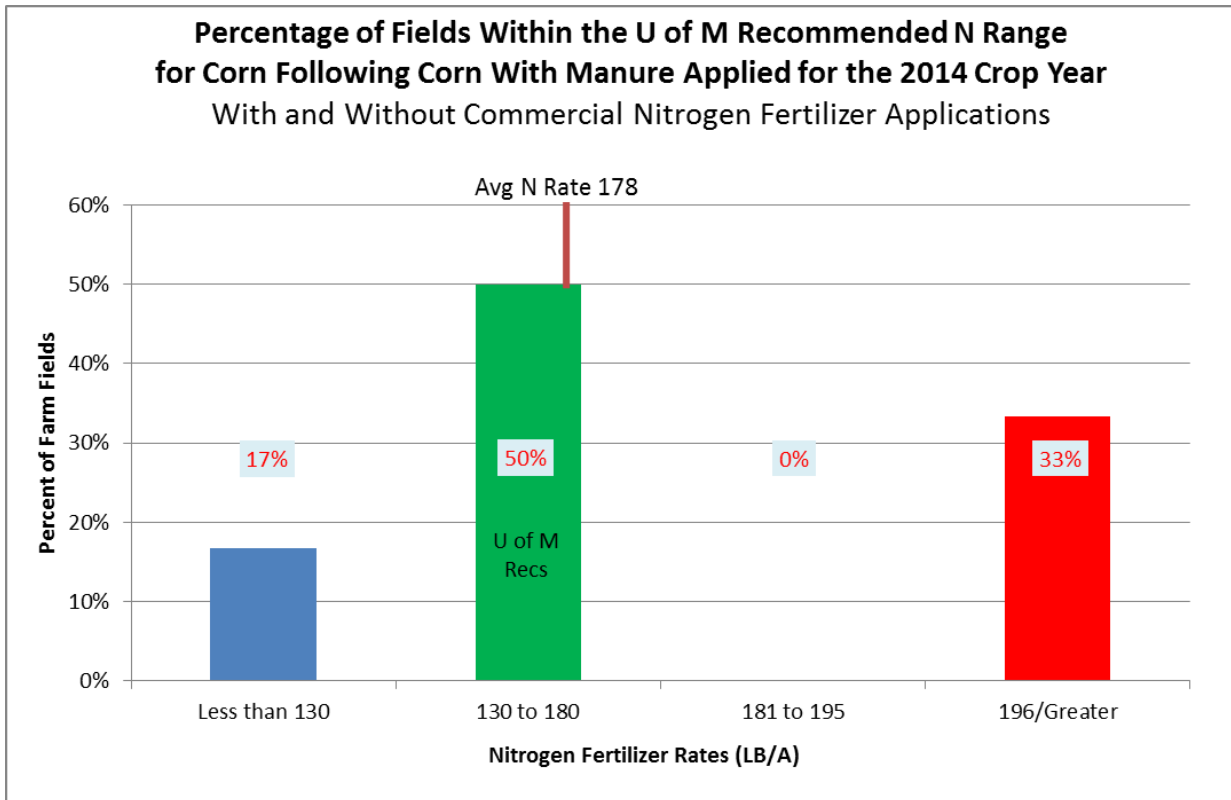


Figure 219. Percentage of fields within the U of M recommended N range for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 6 fields.

Table 199. Nitrogen rates and associated yields for corn following corn applied with beef manure or with beef manure and commercial nitrogen fertilizer for the 2014 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	200	171	No Data	170
Avg N Rate LB/A	120	160	No Data	235

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

- 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

Less than five farmers reported planting corn following 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 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 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 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 220 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 200 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 220.

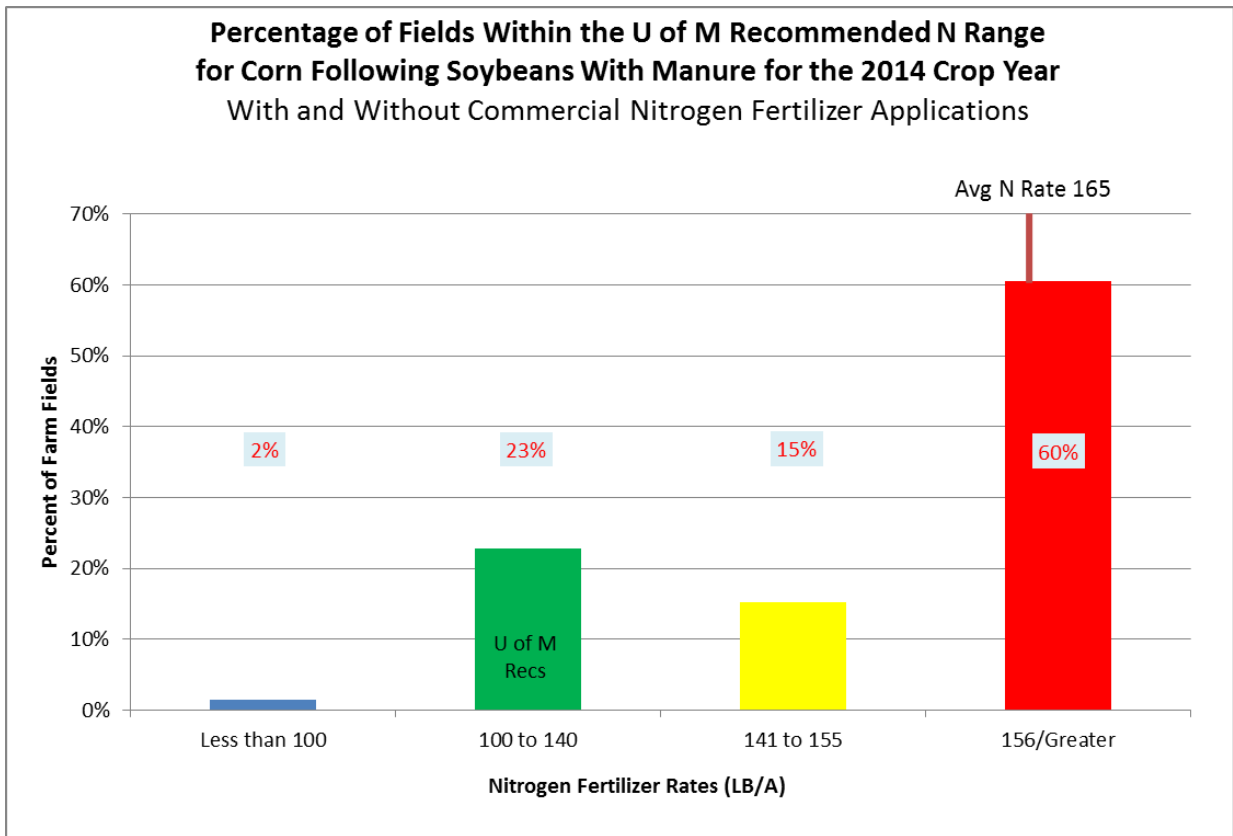


Figure 220. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2014: 66 fields.

Table 200. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	175	189	175	182
Avg N Rate LB/A	80	127	150	186

Figure 221 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 201 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 221.

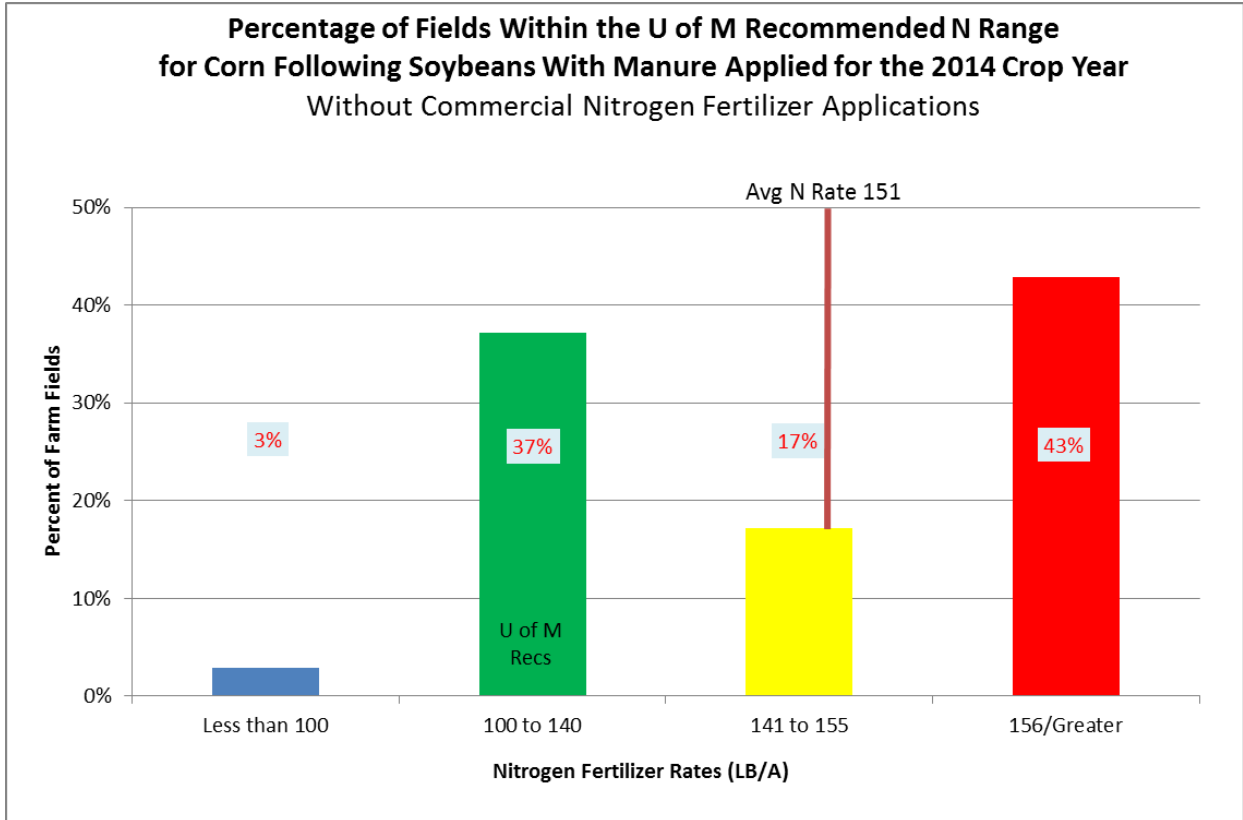


Figure 221. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2014: 35 fields.

Table 201. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	175	188	178	178
Avg N Rate LB/A	80	126	150	179

Figure 222 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 202 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 222.

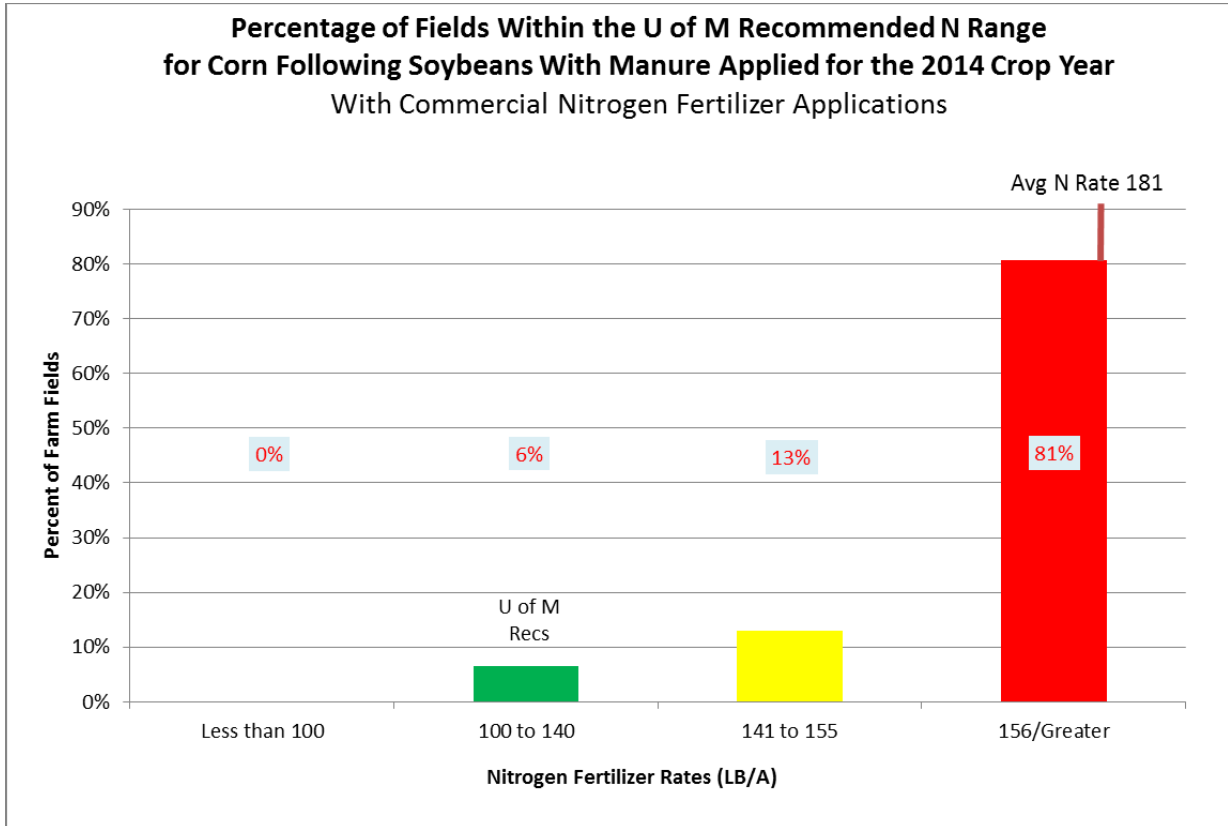


Figure 222. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2014: 31 fields.

Table 202. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2014 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	195	176	183
Avg N Rate LB/A	No Data	138	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 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 223 details the distribution of nitrogen rates in the SC 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 203 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 223.

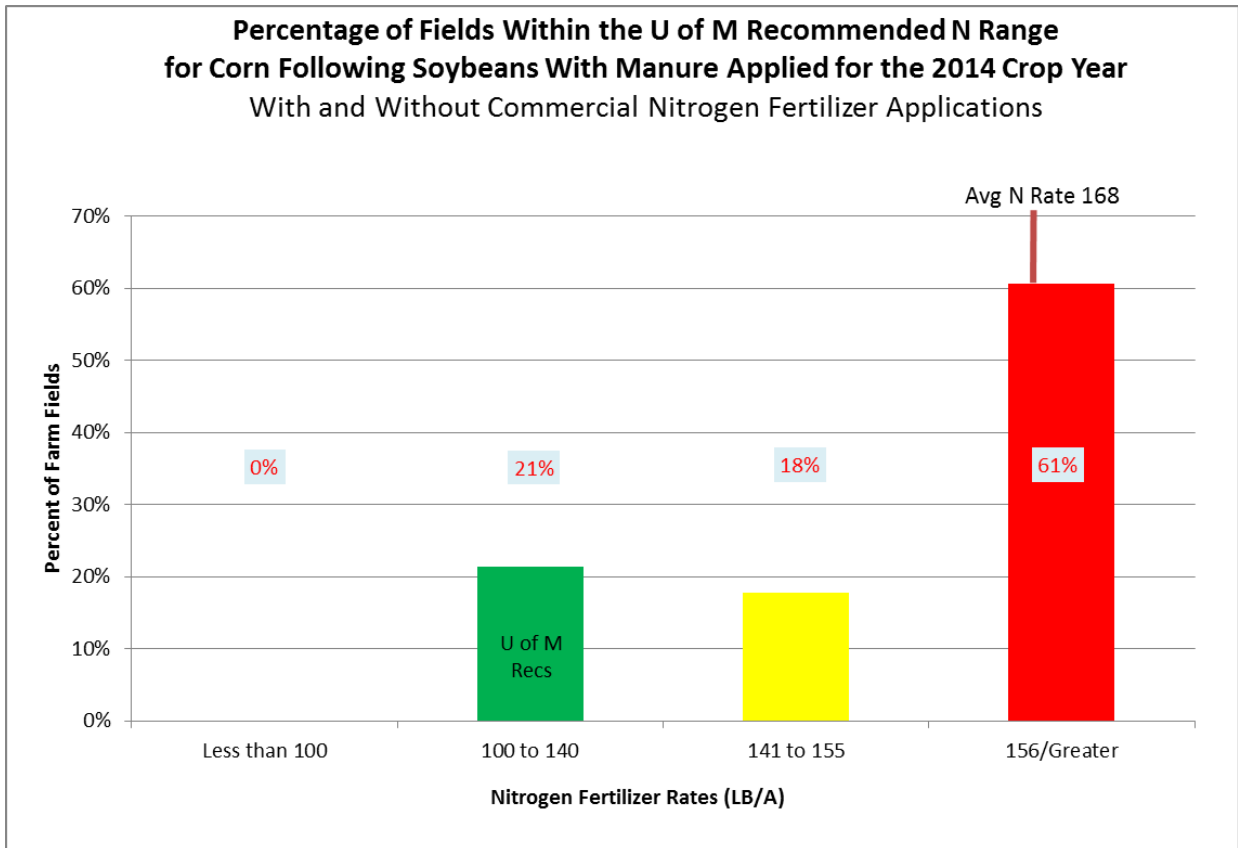


Figure 223. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 28 fields.

Table 203. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	193	171	183
Avg N Rate LB/A	No Data	124	149	189

Figure 224 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 204 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 224.

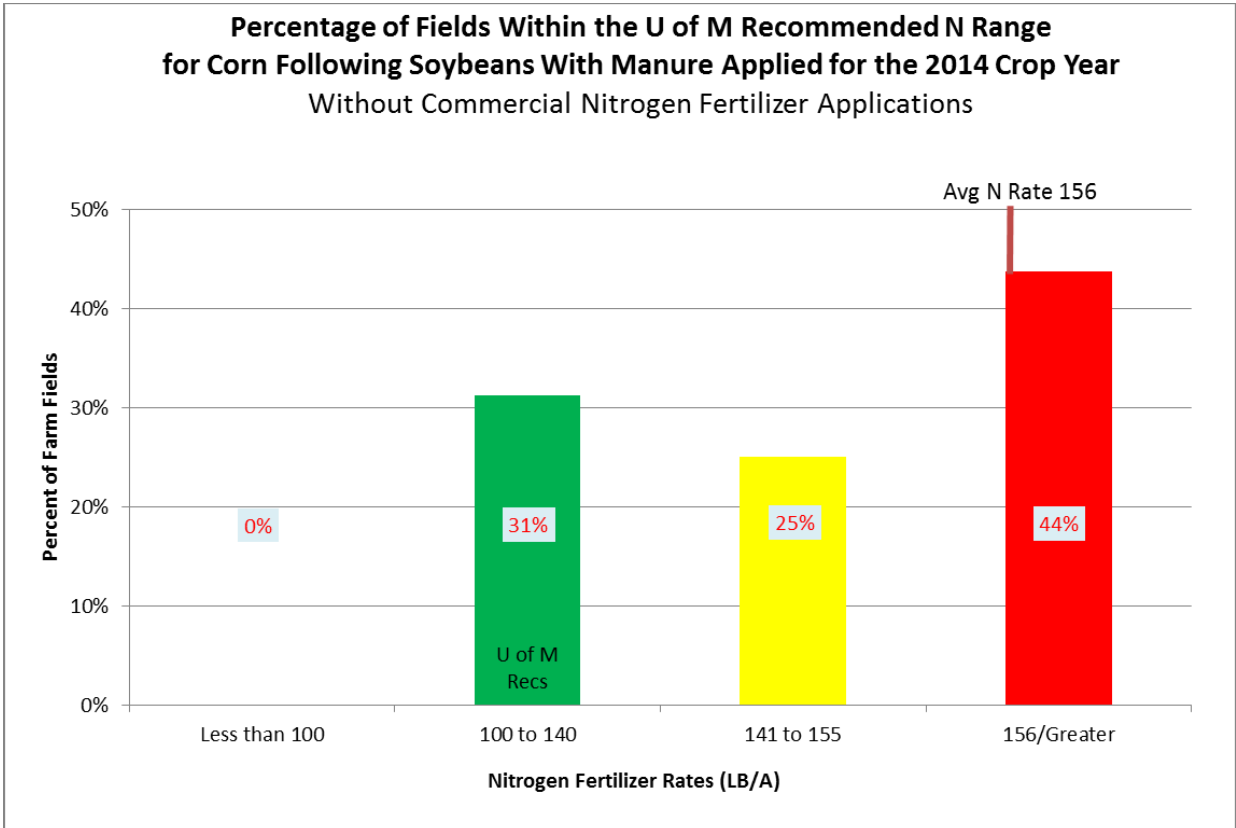


Figure 224 Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2014: 16 fields.

Table 204. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	190	171	185
Avg N Rate LB/A	No Data	122	150	183

Figure 225 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 205 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 225.

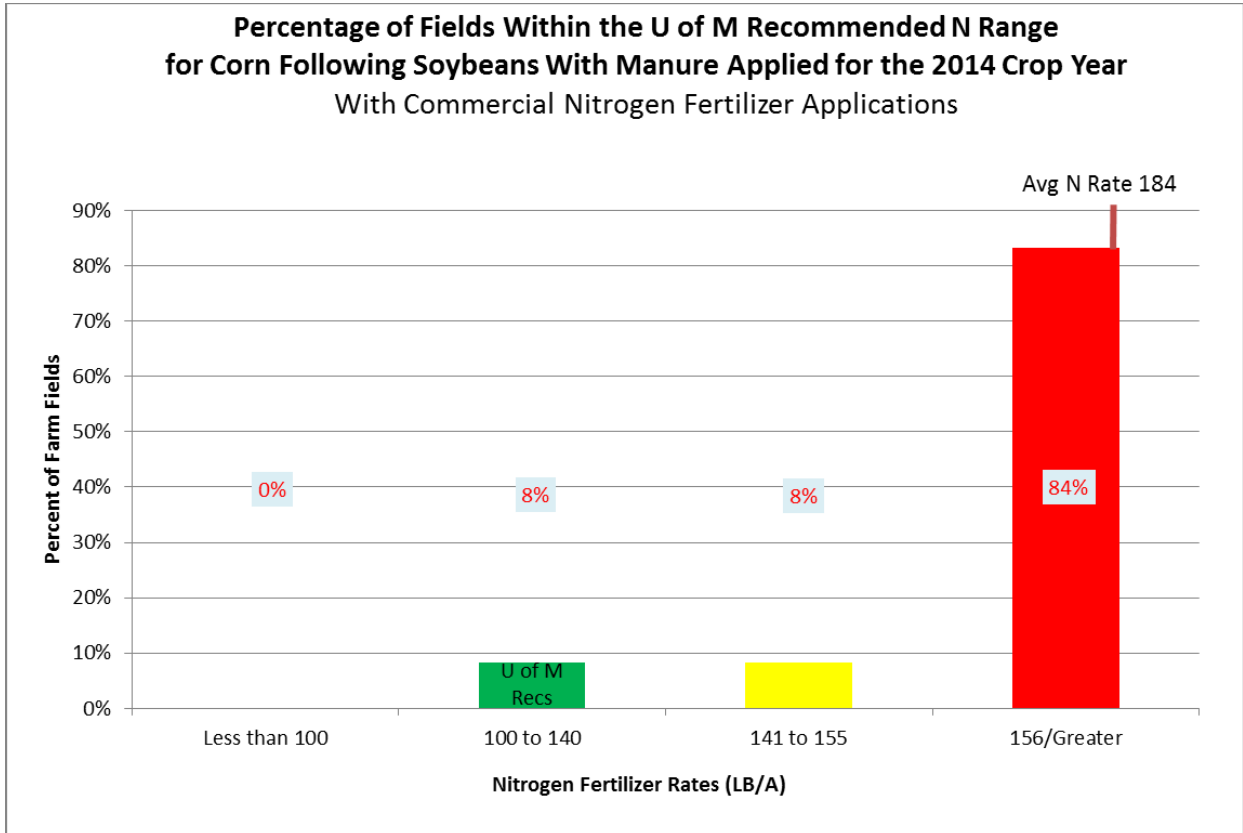


Figure 225. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 12 fields.

Table 205. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2014 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	205	170	182
Avg N Rate LB/A	No Data	135	145	193

Southwestern and West Central Region: Corn Following Soybeans

Figure 226 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 206 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 226.

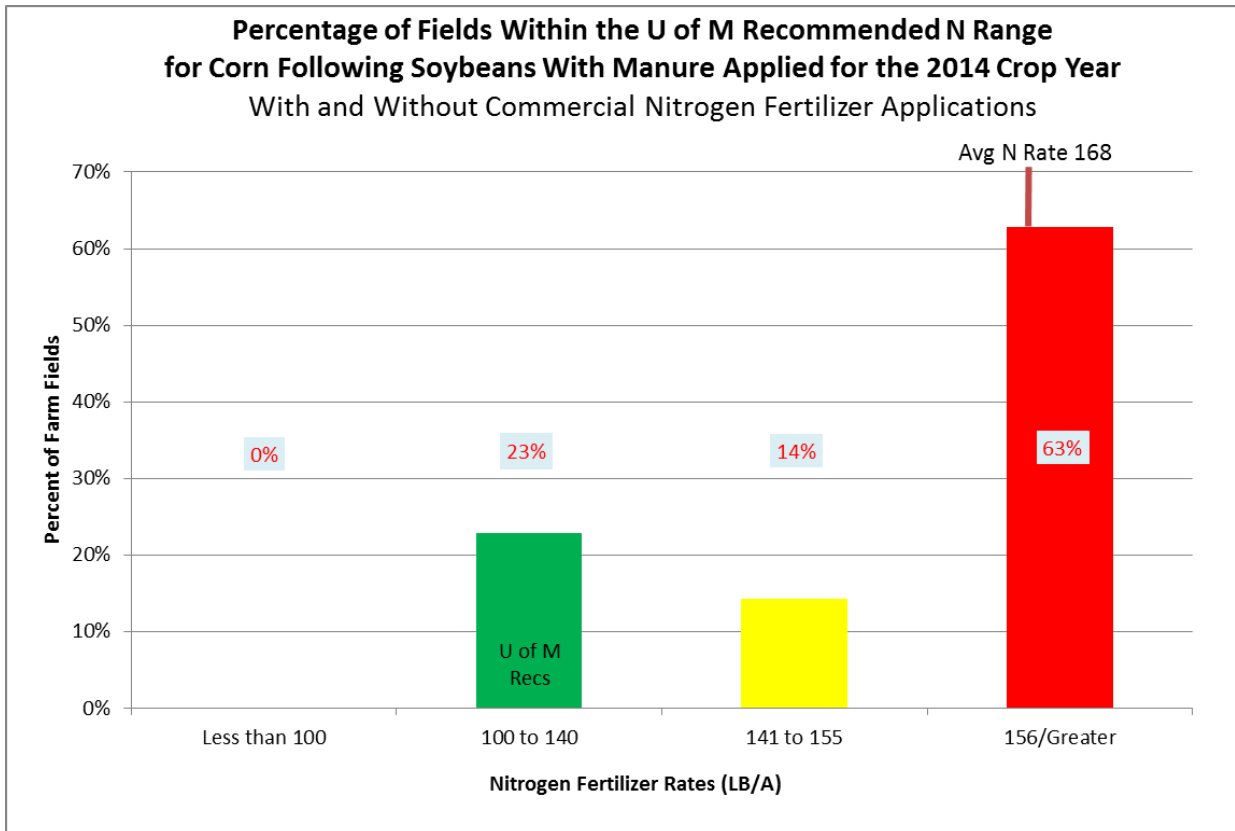


Figure 226. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 35 fields.

Table 206. Nitrogen rates and associated yields for corn following soybeans applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	183	183	180
Avg N Rate LB/A	No Data	133	151	184

Figure 227 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 207 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 227.

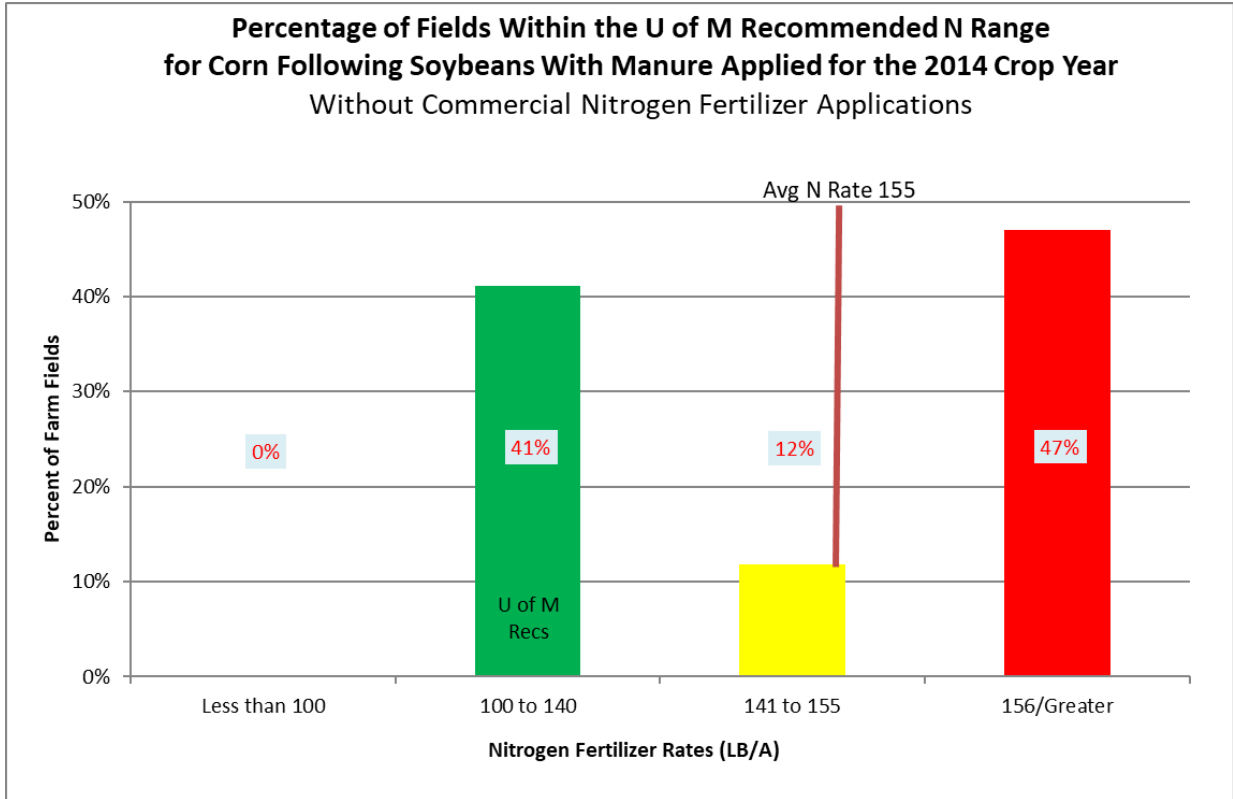


Figure 227. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer in the SW BMP region for 2014: 17 fields.

Table 207. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	182	190	173
Avg N Rate LB/A	No Data	132	150	176

Figure 228 details the distribution of nitrogen rates in the SW 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 208 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 228.

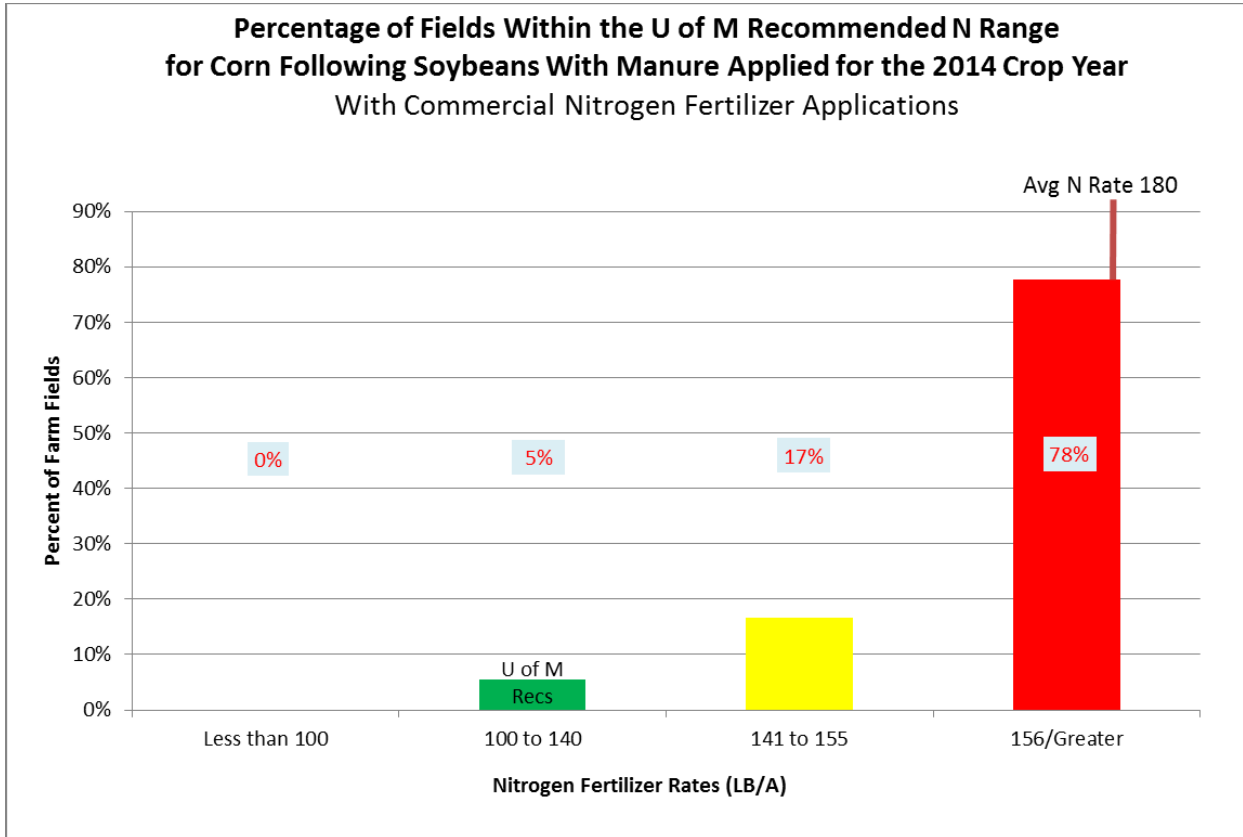


Figure 228. Percentage of fields within the U of M recommended N range for corn following soybeans applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 18 fields.

Table 208. Nitrogen rates and associated yields for corn following soybeans applied with hog manure and commercial nitrogen fertilizer for the 2014 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	185	178	184
Avg N Rate LB/A	No Data	140	151	189

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 229 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 209 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 229.

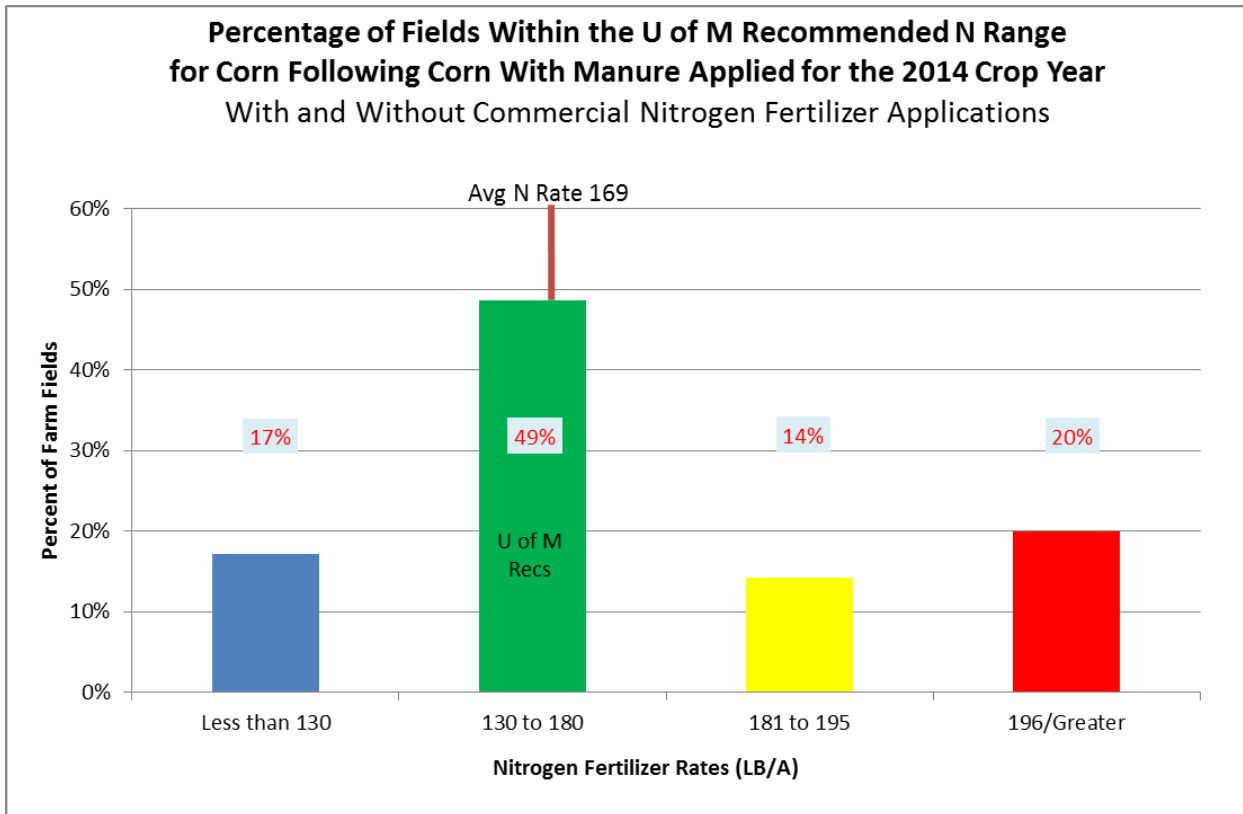


Figure 229. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in Minnesota for 2014: 35 fields.

Table 209. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	179	177	190	171
Avg N Rate LB/A	115	161	187	220

Figure 230 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 210 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 230.

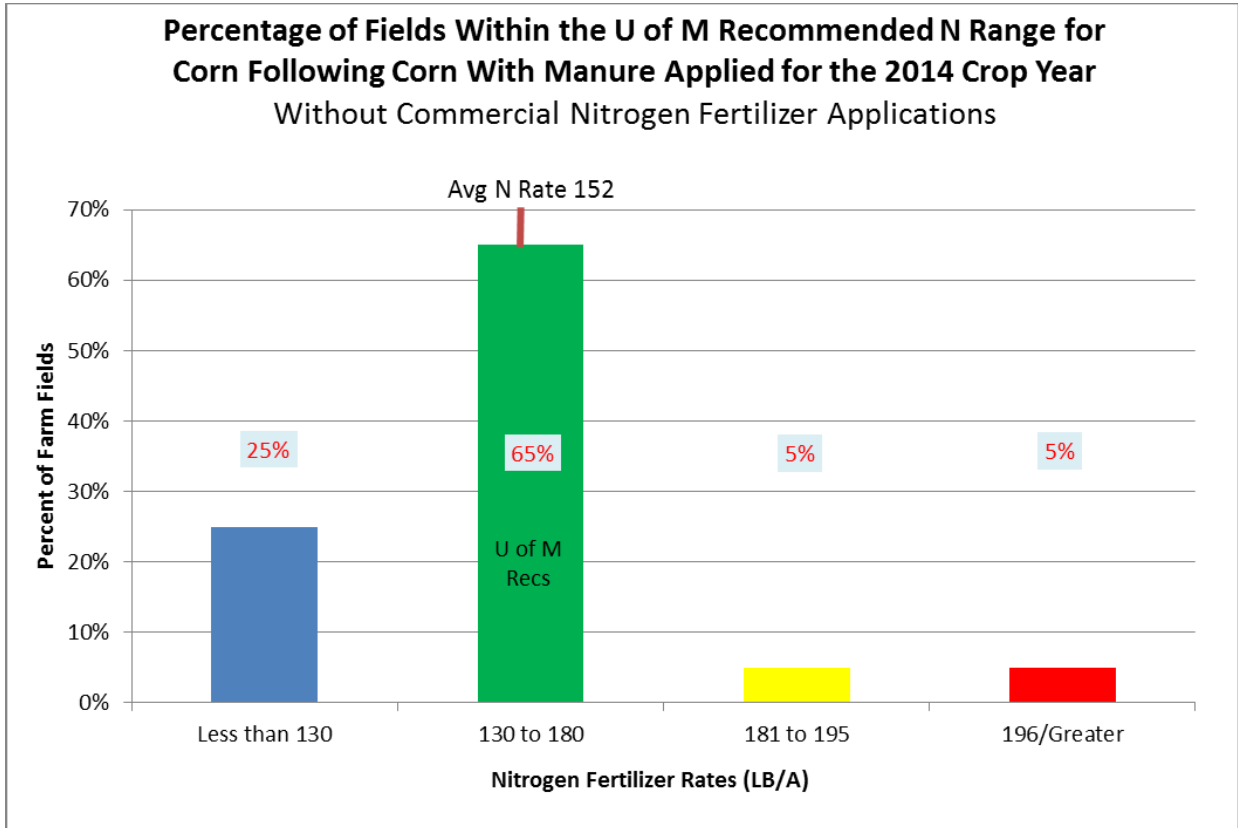


Figure 230. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in Minnesota for 2014: 20 fields.

Table 210. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	179	180	190	180
Avg N Rate LB/A	113	158	190	225

Figure 231 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 211 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 231.

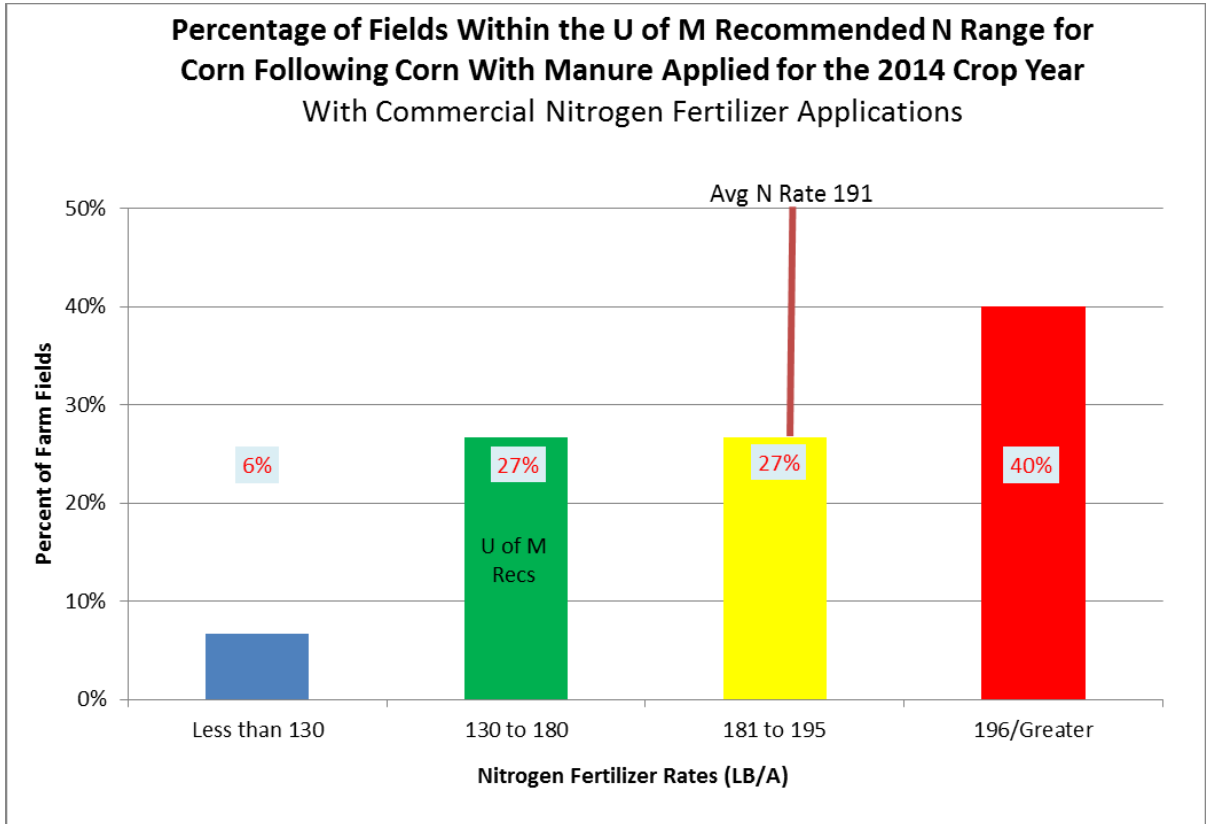


Figure 231. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in Minnesota for 2014: 15 fields.

Table 211. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2014 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	166	190	170
Avg N Rate LB/A	125	168	187	220

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 232 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 212 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 232.

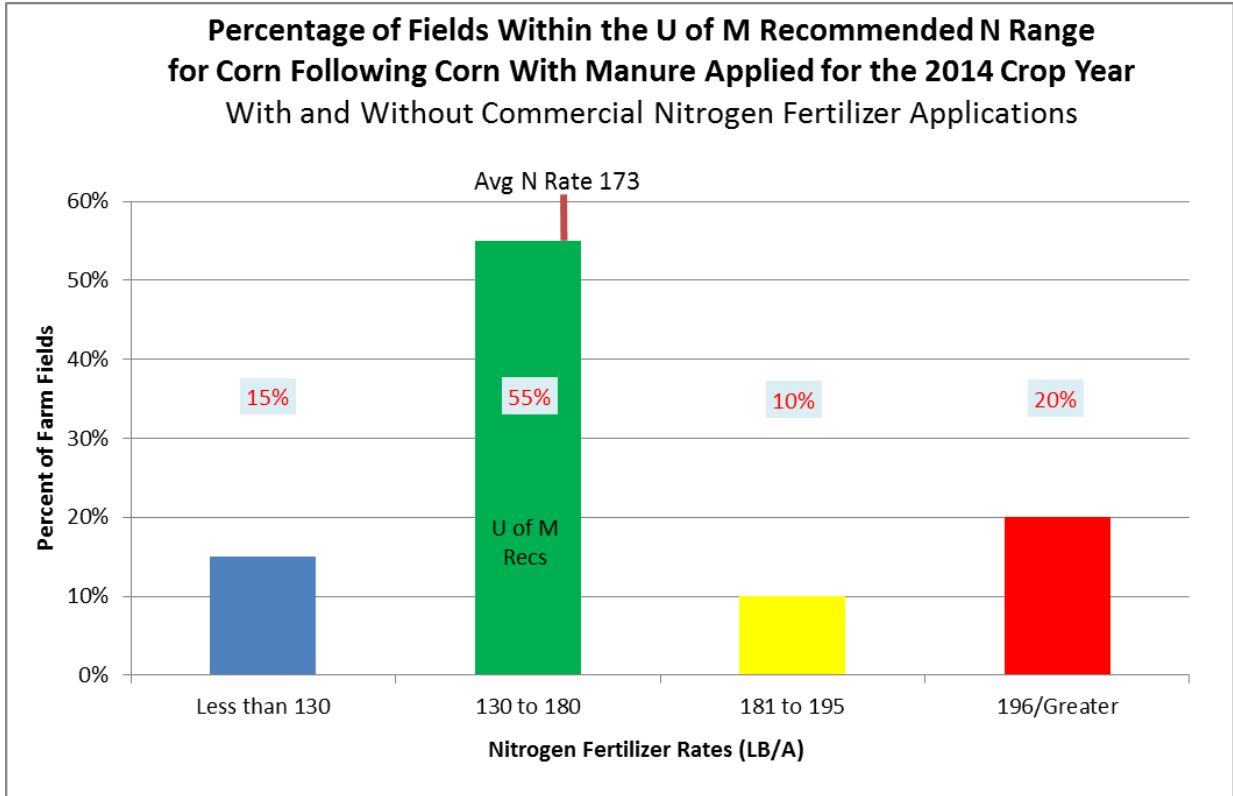


Figure 232. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 20 fields.

Table 212. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	178	175	185	178
Avg N Rate LB/A	117	166	183	229

Figure 233 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 213 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 233.

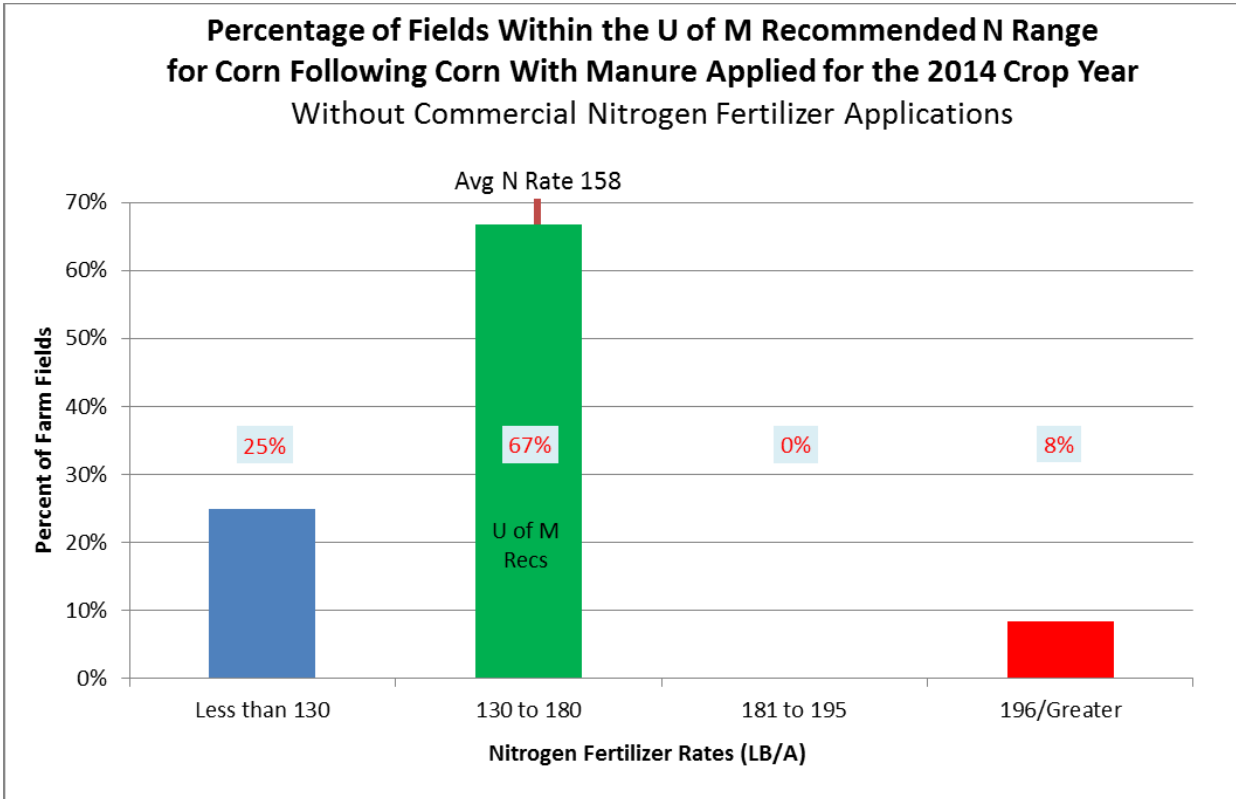


Figure 233. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in the SC BMP region for 2014: 12 fields.

Table 213. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	178	180	No Data	180
Avg N Rate LB/A	117	165	No Data	225

Figure 234 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 214 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 234.

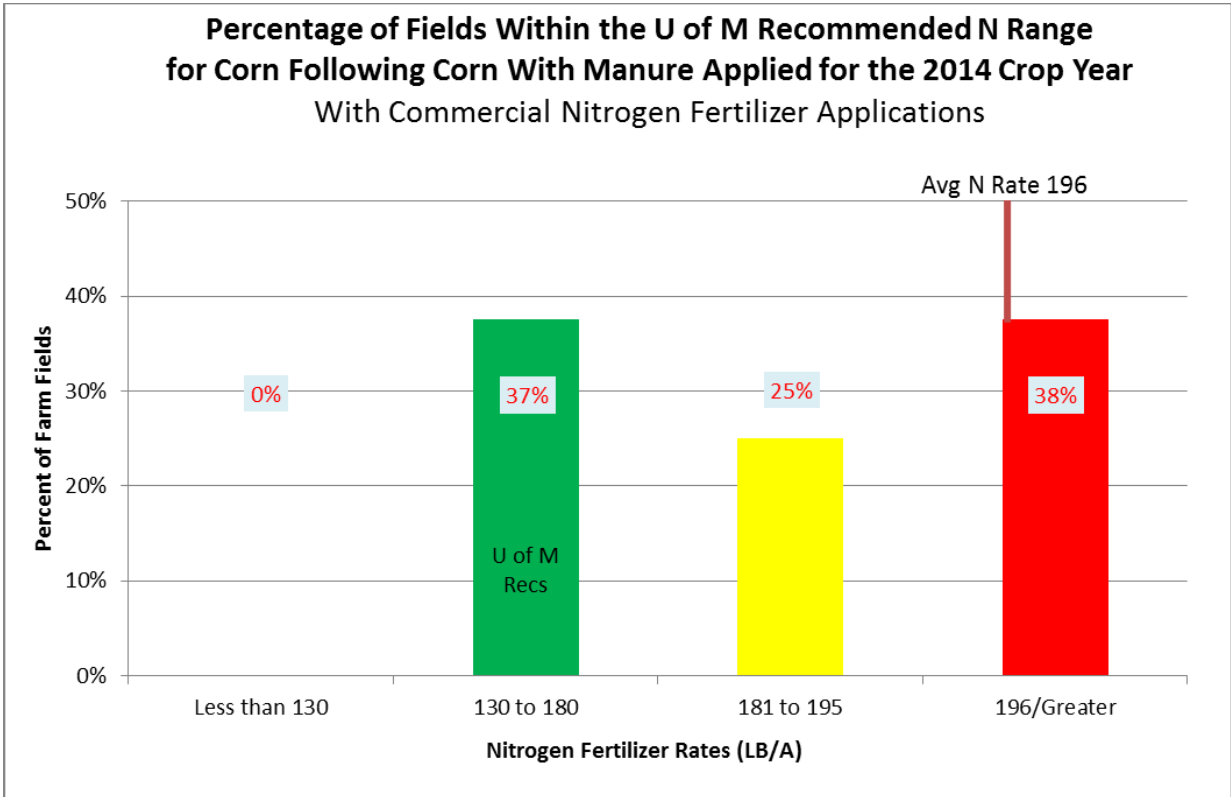


Figure 234. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SC BMP region for 2014: 8 fields.

Table 214. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2014 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	163	185	177
Avg N Rate LB/A	No Data	170	189	230

Southwestern and West Central Region: Corn Following Corn

Figure 235 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 215 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 235.

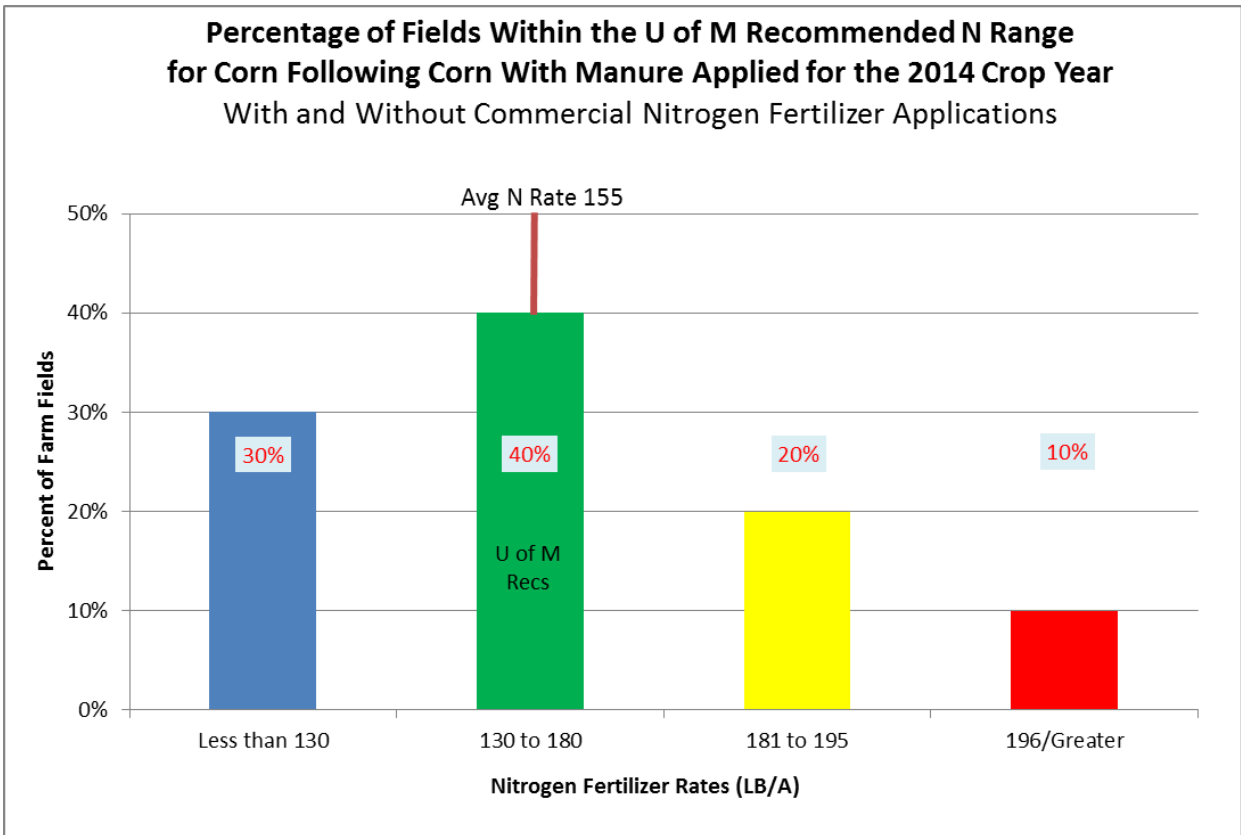


Figure 235. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 10 fields.

Table 215. Nitrogen rates and associated yields for corn following corn applied with hog manure or with hog manure and commercial nitrogen fertilizer for the 2014 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	180	184	195	170
Avg N Rate LB/A	114	153	190	220

Figure 236 details the distribution of nitrogen rates in the SW 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 216 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 236.

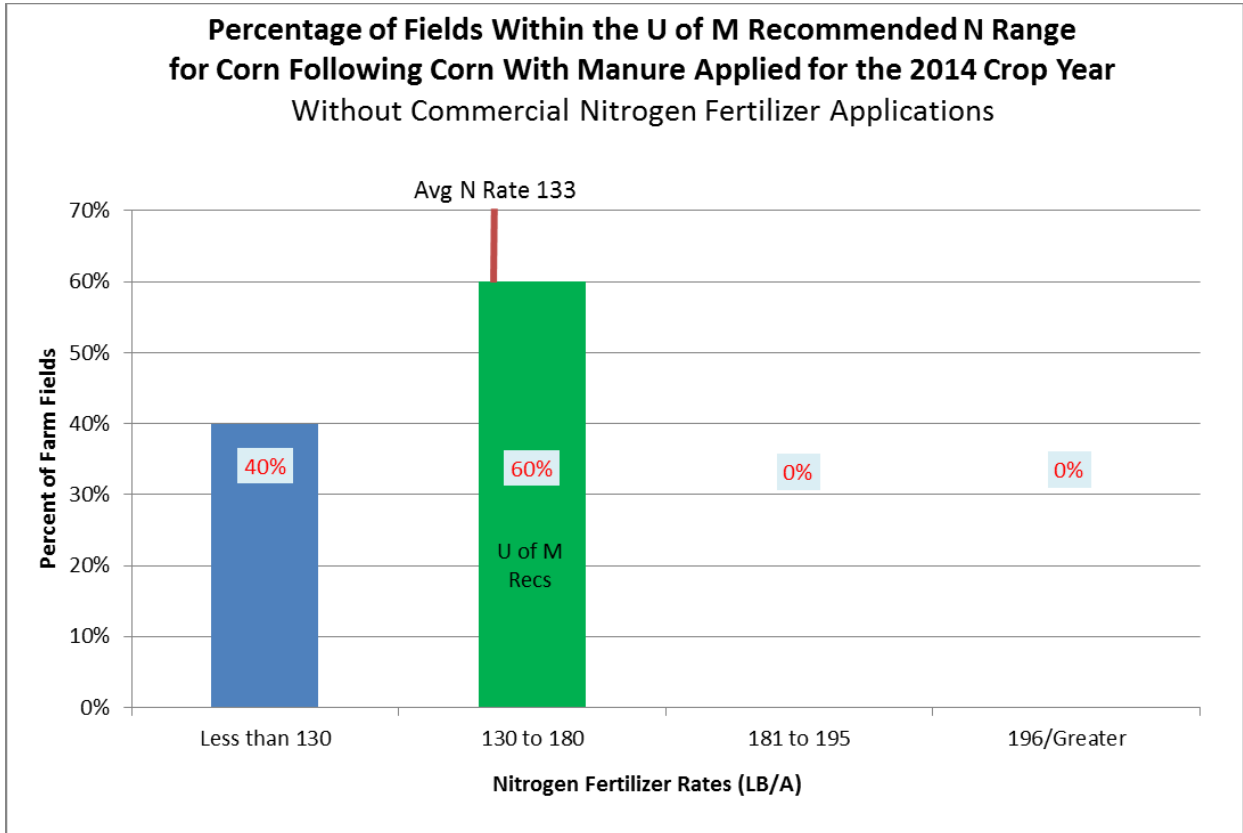


Figure 236. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and no commercial nitrogen fertilizer in the SW BMP region for 2014: 5 fields.

Table 216. Nitrogen rates and associated yields for corn following corn applied with hog manure and no commercial nitrogen fertilizer for the 2014 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	180	187	No Data	No Data
Avg N Rate LB/A	108	150	No Data	No Data

Figure 237 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 217 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 237.

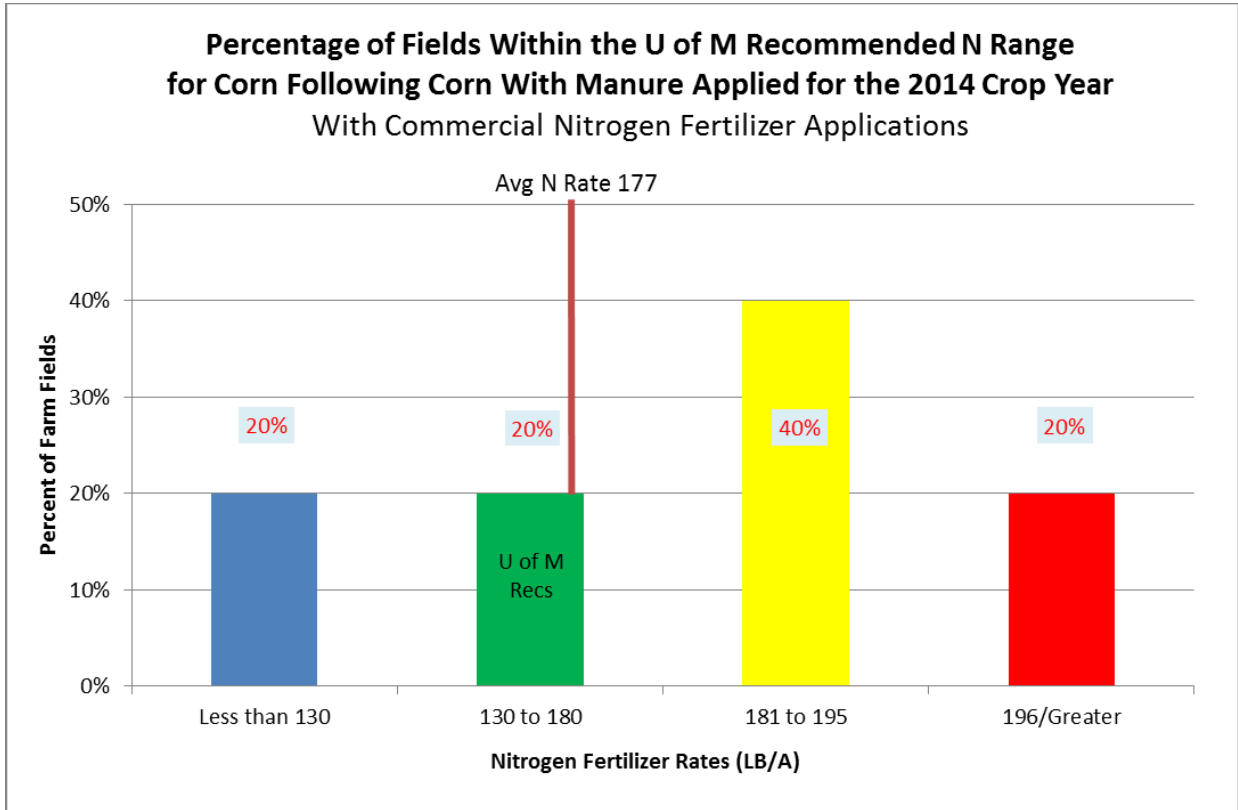


Figure 237. Percentage of fields within the U of M recommended N range for corn following corn applied with hog manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 5 fields.

Table 217. Nitrogen rates and associated yields for corn following corn applied with hog manure and commercial nitrogen fertilizer for the 2014 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	180	175	195	170
Avg N Rate LB/A	125	160	190	220

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 238 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 218 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 238.

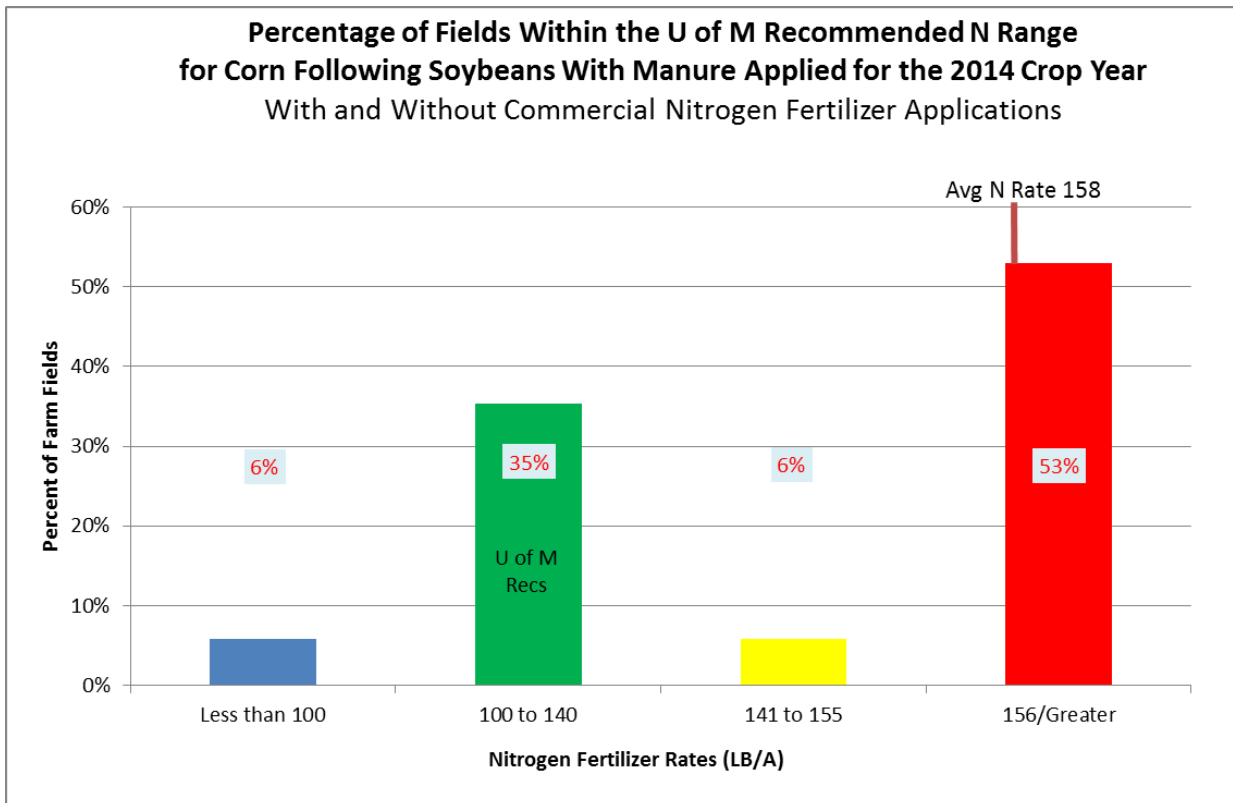


Figure 238. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in Minnesota for 2014: 17 fields.

Table 218. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2014 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	105	134	211	176
Avg N Rate LB/A	45	125	148	193

Figure 239 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 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 soybeans applied with poultry manure and no commercial nitrogen fertilizer in Minnesota for 2014: 11 fields.

Table 219. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer for the 2014 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	105	133	211	174
Avg N Rate LB/A	45	125	148	187

Figure 240 details the distribution of nitrogen rates in Minnesota for corn following soybeans applied with poultry manure and 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.

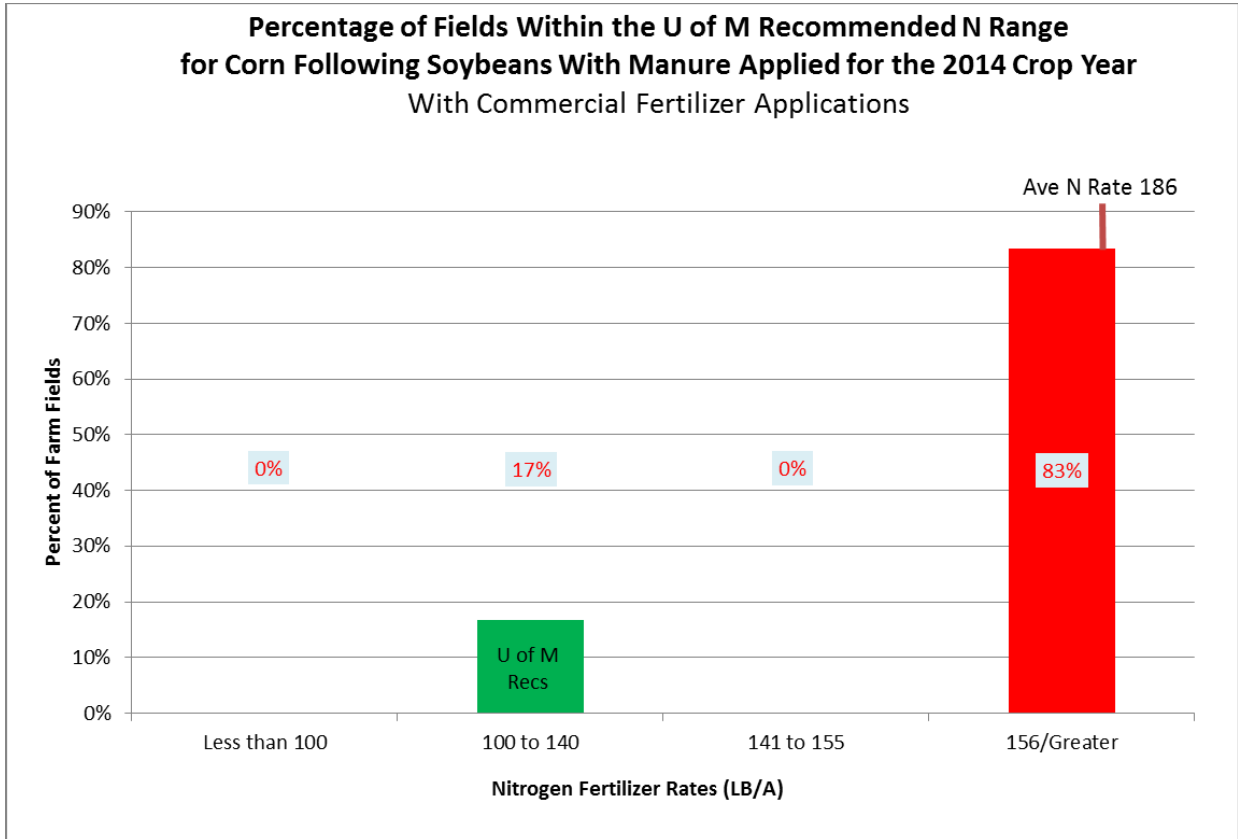


Figure 240. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure and commercial nitrogen fertilizer in Minnesota for 2014: 6 fields.

Table 220. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure and commercial nitrogen fertilizer for the 2014 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	140	No Data	178
Avg N Rate LB/A	No Data	126	No Data	198

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

Figure 241 details the distribution of nitrogen rates in the SW BMP region 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 221 details the average yield and average nitrogen rate for each of the corresponding ranges in Figure 241.

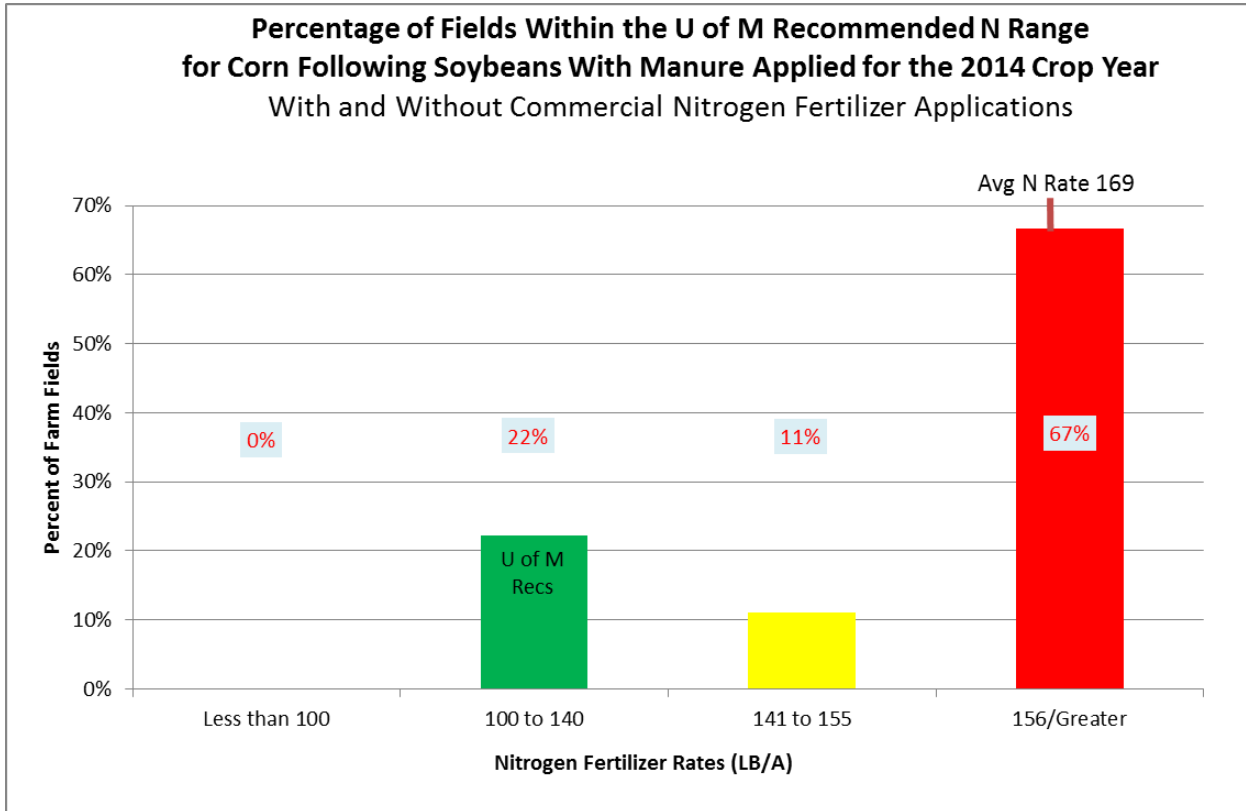


Figure 241. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer in the SW BMP region for 2014: 9 fields.

Table 221. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure or with poultry manure and commercial nitrogen fertilizer for the 2014 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	145	211	174
Avg N Rate LB/A	No Data	123	148	188

Figure 242 details the distribution of nitrogen rates in the SW BMP region for corn following soybeans applied with poultry manure and no 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.

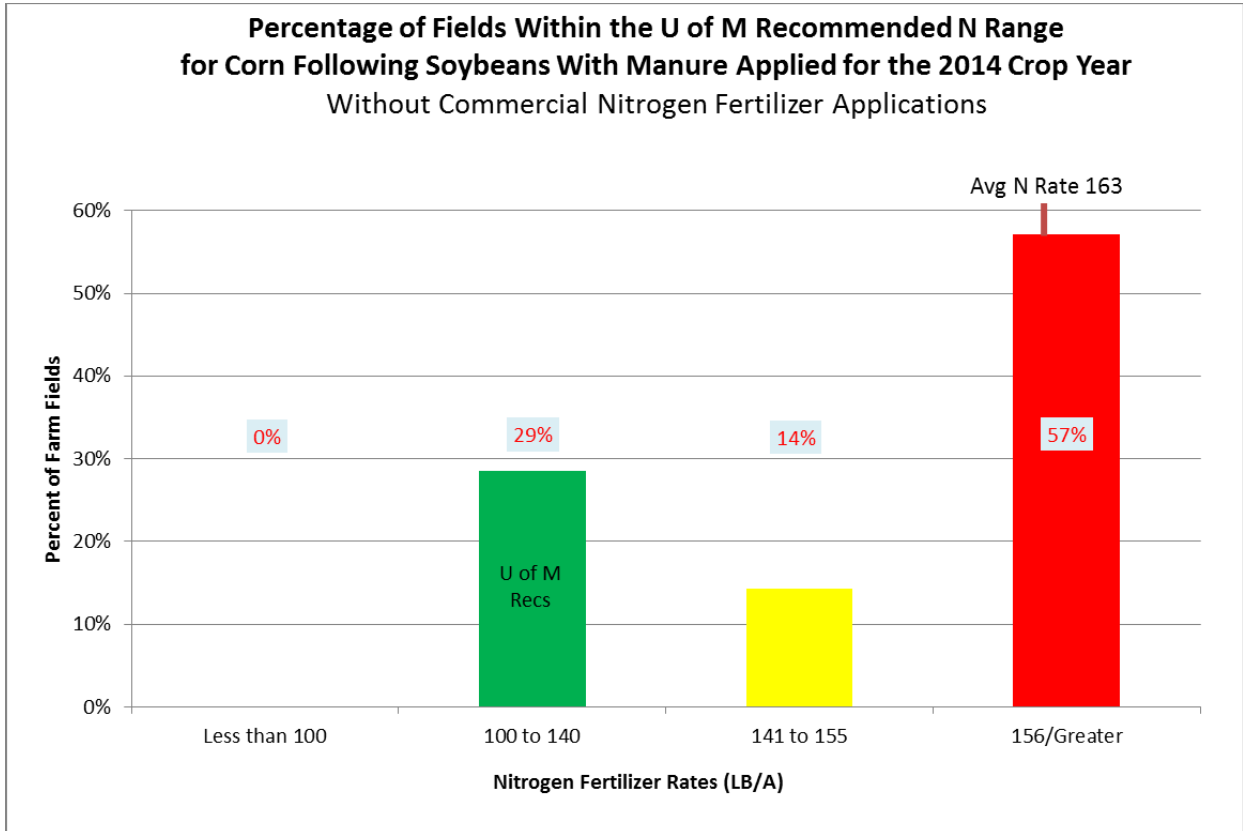


Figure 242. Percentage of fields within the U of M recommended N range for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer in the SW BMP region for 2014: 7 fields.

Table 222. Nitrogen rates and associated yields for corn following soybeans applied with poultry manure and no commercial nitrogen fertilizer for the 2014 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	145	211	174
Avg N Rate LB/A	No Data	123	148	187

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

Less than five farmers reported planting corn following corn 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

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

Less than five farmers reported planting corn following corn 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 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.

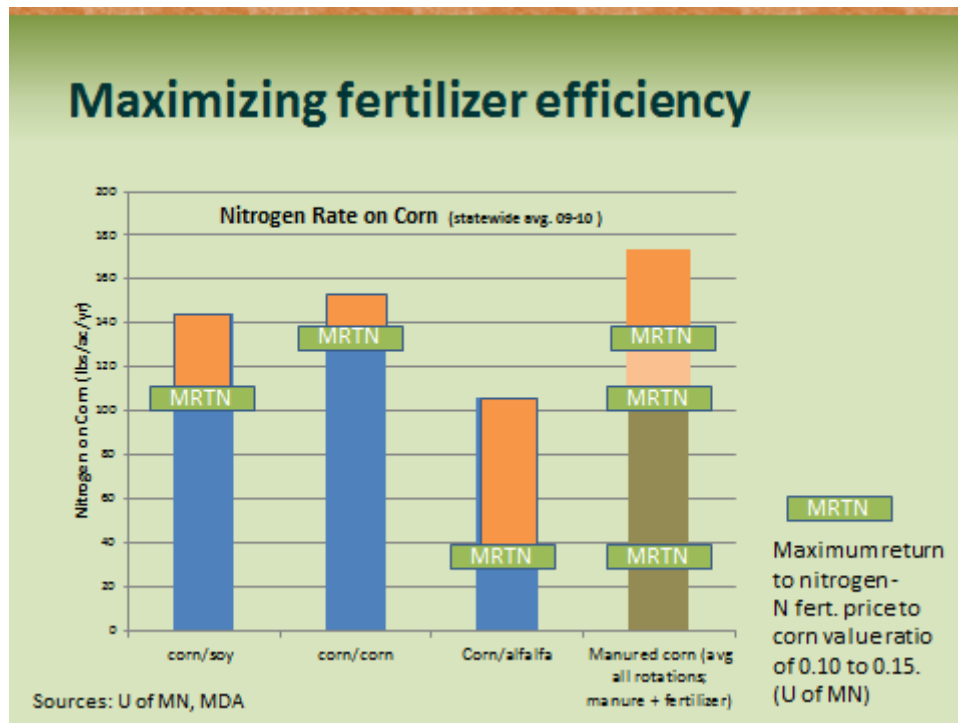


Figure 243. The Minnesota Pollution Control Agency's description on how to use the Maximum Return to Nitrogen (MRTN) on corn.

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.