

Ag Lime Recommendations in Pounds ENP Per Acre

University of Minnesota Soil Testing Laboratory

Lbs. ENP per acre recommendation based on a 6 inch plow layer

To obtain the Ag-Lime recommendation for different plow depths, multiply the Ag-Lime recommendation by a factor of 0.17 for each inch greater than the 6-inch plow depth and add 1.

Example

Ag-Lime recommendation for 9-inch plow depth = (9-inches - 6-inches) X 0.17 + 1.0 = 1.5; then 1.5 X Ag-Lime recommendation listed on this table = Ag-Lime recommendation for a 9-inch plow depth.)

Review and Use the Three Ag-Lime Recommendation Tables that Applies

Table 1. Applies to Soil Samples With Soil-Water pH Test Values of 6.0 and Higher for MINERAL Soils

| Soil-Water | To Raise pH to 6.5 | | To Raise pH to 6.9 | |
|------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | AREA 1 Lbs. ENP Per Acre | AREA 2 Lbs. ENP Per Acre | AREA 1 Lbs. ENP Per Acre | AREA 2 Lbs. ENP Per Acre |
| 6.5 | Not recommended | Not recommended | 2,000 | Not recommended |
| 6.4 | 2,000 | Not recommended | 2,000 | Not recommended |
| 6.3 | 2,000 | Not recommended | 5,000 | Not recommended |
| 6.2 | 3,000 | Not recommended | 5,000 | Not recommended |
| 6.1 | 3,000 | Not recommended | 6,000 | Not recommended |
| 6.0 | 3,000 | 2,000 | 6,000 | Not recommended |

Table 2. Applies to Soil Samples With Soil-Water pH Test Values Lower Than 6.0, Where SMP Buffer Index Method is Used on MINERAL Soils

| SMP Buffer Index | To raise pH to 6.0 | | To raise pH to 6.5 | | To raise pH to 6.9 | |
|------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | AREA 1 Lbs. ENP Per Acre | AREA 2 Lbs. ENP Per Acre | AREA 1 Lbs. ENP Per Acre | AREA 2 Lbs. ENP Per Acre | AREA 1 Lbs. ENP Per Acre | AREA 2 Lbs. ENP Per Acre |
| 6.8 | 2,000 | Not recommended | 3,000 | 2,000 | 5,000 | Not recommended |
| 6.7 | 2,000 | Not recommended | 3,500 | 2,000 | 5,000 | Not recommended |
| 6.6 | 2,000 | Not recommended | 4,000 | 2,000 | 6,000 | Not recommended |
| 6.5 | 2,500 | Not recommended | 4,500 | 2,000 | 6,500 | Not recommended |
| 6.4 | 3,000 | 2,000 | 5,000 | 2,500 | 7,000 | Not recommended |
| 6.3 | 3,500 | 2,000 | 5,500 | 2,500 | 7,500 | Not recommended |
| 6.2 | 4,000 | 2,000 | 6,000 | 3,000 | 8,000 | Not recommended |
| 6.1 | 4,500 | 2,000 | 6,500 | 3,000 | 8,500 | Not recommended |
| 6.0 | 5,000 | 2,500 | 7,000 | 3,500 | 9,000 | Not recommended |
| 5.9 | 5,500 | 2,500 | 7,500 | 3,500 | 9,500 | Not recommended |
| 5.8 | 6,000 | 3,000 | 8,000 | 4,000 | 10,000 | Not recommended |
| 5.7 | 6,500 | 3,000 | 8,500 | 4,000 | 10,500 | Not recommended |
| 5.6 | 7,000 | 3,000 | 9,000 | 4,500 | 11,000 | Not recommended |

Table 3. Applies on ORGANIC soils only (SMP Buffer Index is not used): To raise pH to 5.5

| Soil-Water pH | Area I | | Area II | |
|---------------|----------|--------------|----------|--------------|
| | ENP | AG LIME **** | EPN | AG LIME **** |
| | lb./acre | ton/acre | lb./acre | ton/acre |
| 5.4 | 2000 | 2.0 | 2000 | 2.0 |
| 5.3 | 2000 | 2.0 | 2000 | 2.0 |
| 5.2 | 2000 | 2.0 | 2000 | 2.0 |
| 5.1 | 2000 | 2.0 | 2000 | 2.0 |
| 5.0 | 2000 | 2.0 | 2000 | 2.0 |
| 4.9 | 3000 | 3.0 | 3000 | 3.0 |
| 4.8 | 3500 | 3.5 | 3500 | 3.5 |
| 4.7 | 4000 | 4.0 | 4000 | 4.0 |
| 4.6 | 4500 | 4.5 | 4500 | 4.5 |
| 4.5 or less | 5000 | 5.0 | 5000 | 5.0 |

**** These are approximate recommendations based on the average ENP value of ag lime. An ENP of 1,000 lb. per ton is an average value for ag lime (crushed limestone) in Minnesota.

Boundaries between Area I and Area 2

Area 1 = area in Minnesota that is EAST of the following counties: Roseau, Marshall, Pennington, Polk, Mahnomon, western two thirds of Becker and Ottertail, Douglas, Pope, Kandiyohi, Renville, Brown, Watonwan, and Martin. (Counties/areas listed and west are in Area 2)

- » Area 1 = most subsoils are acid.
- » Area 2 = few subsoils are acid.

Convert pounds ENP per acre recommendation to tons of ag-lime per acre use the following equation

Lbs. ENP/Acre ÷ Ag-Lime Quality Rating (Minimum Lbs. ENP/Ton)

Example: 5,000 Lbs. ENP/Acre recommendation ÷ 1,000 Min. Lbs. ENP/Ton = 5 Tons Ag-Lime/Acre

Sources

- » Lime Needs In Minnesota, Minnesota Extension Bulletin FO-05956-GO, 1992, George Rehm, Robert Munter, Carl Rosen, and Michael Schmitt.
- » Liming Minnesota Soils, Minnesota Extension Service Bulletin/Folder 210, 1978, John Grava, C. J. Overdahl, and W. E. Fenster. In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by call 651/201-6000. TTY users can call the Minnesota Relay Service at 711. The MDA is an equal opportunity employer and provider.

Want More Information or Have Questions

Contact the Minnesota Department of Agriculture at 651-201-6275 or email: Ed.Kaiser@state.mn.us.