

Adding Pelletized Lime and Ammonium Sulfate in Soybean- Year 2

Study ID: 1051081202402

County: Hamilton

Soil Type: Hastings silt loam

Planting Date: 4/24/24

Harvest Date: 10/8/24

Population: 100,000

Row Spacing (in): 15"

Variety: Beck's® 2950E3

Reps: 6, 9 (2023); 8 (2024)

Previous Crop: Corn

Tillage: No-till

Herbicides: *Pre:* 8 oz/ac 2,4-D + 4 oz/ac Anthem

Maxx® + 32 oz/ac glyphosate + AMS

Post: 32 oz/ac Enlist® + 38 oz/ac Liberty® + 32

oz/ac glyphosate + AMS

Seed Treatment: Company standard

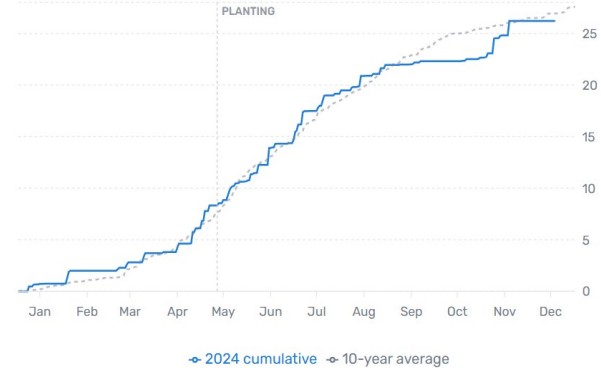
Foliar Insecticides: 8 oz/ac Capture®

Foliar Fungicides: 10 oz/ac Quilt®

Fertilizer: 16.5 lb N/ac, 74 lb P/ac, 72 lb K/ac, 4.5 lb S/ac, 3 lb Zn/ac

Irrigation: Pivot

Rainfall (in):



Introduction: The two-year study evaluated the impact of pelletized lime and ammonium sulfate as a calcium and sulfur source on a Hastings silt loam soil. Grower initially wanted to evaluate gypsum, but had to substitute pelletized lime and ammonium sulfate due to availability. The fertilizer was applied with a dry broadcast spreader in mid-April 2023 and corn (2023)/soybean (2024) were no-till planted. The nitrogen and sulfur rates were adjusted to keep the rates the same as that applied to the check strips. The treatments were as follows:

- Check – grower standard fertilizer.
- Applied grower standard + 200 lb Pell Lime/ac + 150 lb ammonium sulfate/ac.

Grain moisture, yield, and marginal net return were evaluated. The variety was Beck's® 2950 E3. This is the second year of a two-year study. In year two, no additional applications were made, and yield and net return impacts will be evaluated. The cost of the product is spread over two years.

Results: Year 1 (2023) results in corn field trials

	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
<i>DEKALB® DKC114-01 White (9 replications)</i>			
Check	19.0 A*	229 A	1355 A
Pelletized Lime + Ammonium Sulfate	18.9 A	232 A	1362 A
P-Value:	0.289	0.289	0.634
<i>DEKALB® DKC1474 White (6 replications)</i>			
Check	19.5 A	235 A	1389 A
Pelletized Lime + Ammonium Sulfate	19.5 A	242 A	1419 A
P-Value:	0.972	0.447	0.555

*Values with the same letter are not significantly different at a 90% confidence level.

†Bushels per acre corrected to 13% moisture.

‡Marginal net return based on \$11/bu soybeans, \$9.11/ac lime + ammonium sulfate (cost was spread over two years).

Year 2 (2024) results in soybean field.

	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
Check	9.8 A*	84.8 A	\$932 A
Pelletized lime + Ammonium Sulfate	9.7 A	85.6 A	\$932 A
P-Value:	0.97	0.87	0.99

*Values with the same letter are not significantly different at a 90% confidence level.

†Bushels per acre corrected to 13% moisture.

‡Marginal net return based on \$11/bu soybeans, \$9.11/ac lime + ammonium sulfate (cost was spread over two years).

Summary:

- There were no significant differences in moisture, yield, or marginal net return in either year regardless of crop.
- Soil series and health may play a factor in determining whether to apply additional lime + ammonium sulfate as a calcium source.