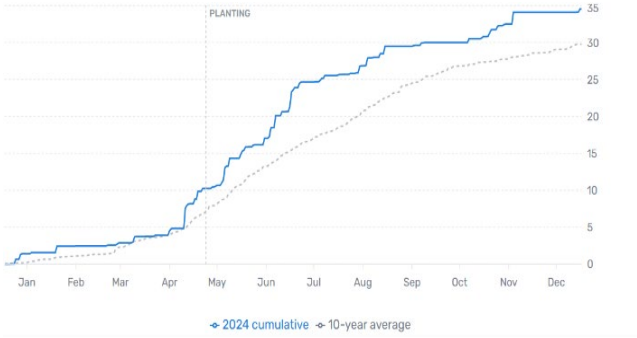
Adding Pelletized Lime + Ammonium Sulfate in Corn - Year 2

Study ID: 1051081202401
County: Hamilton
Soil Type: Thurman fine sandy loam; Ortello fine sandy loam
Planting Date: 5/8/24
Harvest Date: 10/18/24
Population: 34,000
Row Spacing (in): 30”
Hybrid: Beck’s® 6046PQ & 6373 Conventional
Reps: 11
Previous Crop: Soybean
Tillage: No-till
Herbicides: ***Pre:*** 8 oz/ac 2,4-D + 4 oz/ac Anthem Maxx® + 32 oz/ac glyphosate + AMS ***Post:*** 5 oz/ac Status ® + 16 oz/ac Outlook® + 48 oz/ac atrazine + 4 oz/ac Callisto®

Seed Treatment: Company standard
Foliar Insecticides: None
Foliar Fungicides: 8 oz/ac Veltyma® (Applied at VT)
Fertilizer: 205 lb N/ac, 40 lb P/ac, 10 lb S/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 Thurman and Ortello fine sandy loam soil in the Platte River Valley. The farmer initally wanted to evaluate gypsum, but had to substitute pellitized lime and ammonium sulfate due to availability. The fertilizer was applied with a dry broadcast spreader in mid-April 2023 and soybean (2023)/Corn (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. In year 1 (2023), there were 4 replications of pelletized lime + ammonium sulfate in soybean hybrid Paloma® 2E260, and 5 replications in soybean hybrid Beck’s® 2630. In year 2 (2024), only one corn hybrid was evaluated. The treatments were as follows:

- Check – grower standard fertilizer applied with dry spreader.
- Applied grower standard plus 200 lb pelletized lime/ac and 150 lb ammonium sulfate/ac.

Grain moisture, yield, and marginal net return were evaluated for two hybrids, Beck’s® 6046PQ and 6373. This is the second year of a two-year study. In year two, no additional applications were made, and yield and net return impacts were evaluated. The product cost is spread over two years.

Results:

2024 (year 2) results in corn field.

	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
Check	16.3 A*	242 A	1,054 A
Pelletized lime + Ammonium Sulfate	15.7 A	244 A	1,027 A
P-Value:	0.45	0.72	0.1

*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 soybean and $32.7/ac for the pelletized lime and ammonium sulfate.

Year 1 (2023) Results

	Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ ($/ac)
	Paloma® 2E260 (4 replications)		
Check	10.9 A*	88.9 A	1222.80 A
Pelletized Lime + Ammonium Sulfate	10.9 A	88.7 A	1188.50 A
P-Value:	0.762	0.929	0.132
	Beck's® 2630 (5 replications)		
Check	11.1 A	85.8 A	1180.20 A
Pelletized Lime + Ammonium Sulfate	11.4 A	86.9 A	1162.40 A
P-Value:	0.436	0.262	0.194

*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 $13.76/bu soybean and $9.11 for the pelletized lime and ammonium sulfate

Summary:

- There were no significant differences between moisture, yield, or marginal net returns in either soybeans (2023, year 1) or corn (2024, year 2).
- Soil series and health may play a factor in determining whether to apply additional lime + ammonium sulfate as a calcium and sulfur source.