



ACRES Research Facility - Central Iowa 2017 Guardian[®]-L Study - Usage with Anhydrous Ammonia (Corn)

Purpose

To evaluate anhydrous ammonia alone against anhydrous ammonia with two different nitrogen stabilizers in a corn-on-corn test.

2017 Results

Treatments	Bu./A.	Bu./A. Difference
Control - No Nitrogen	177	-
180 lb. AA Pre-Plant	247	70
1.5 qt. Guardian-L Pre-Plant 180 lb. AA Pre-Plant	266	89 (+19 over AA only)
1 qt. Competitor (nitrapyrin) Pre-Plant 180 lb. AA Pre-Plant	259	82 (+12 over AA only)

Anhydrous ammonia is a common, low-cost source of nitrogen for corn production. This trial tested the impact of two different forms of nitrogen stabilizers applied through a separate tube into the same band the anhydrous was applied. Results of this trial indicate that both nitrogen stabilizer products (competitor - nitrapyrin) and Guardian-L (liquid DCD) outperformed the anhydrous by itself. Both products helped to keep the nitrogen in the ammonium form longer, creating a longer opportunity for nitrogen uptake by the plant.



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2017 ACRES Research Additional Information

Treatment plots were laid out in a complete randomized block design to minimize effects from field conditions. Each treatment was replicated five (5) times and data was averaged.

Total rainfall recorded at the research site in the growing months (May-September) equaled 18.8 inches. During the same period, the 30-year rainfall average at this site is 23.8 inches.

Guardian-L was applied with the anhydrous ammonia using a N-Serve direct-injection applicator.

Corn variety: Pioneer P0825AM

Soil Characteristics:

(Analyzed by Midwest Labs in Omaha, NE)

OM - 6.8%

CEC - 17.9

pH - 6.3

Sand - 40% Silt - 43% Clay - 18% (Aredale loam)

Conventional tillage