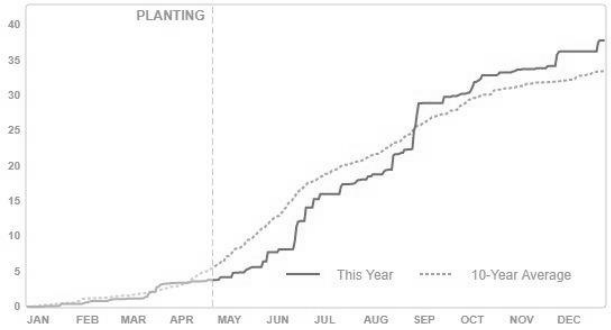
Impact of NutriSphere-NH3™ with Anhydrous Ammonia Application

Study ID: 0822109201801
County: Lancaster
Soil Type: Kennebec silt loam occasionally flooded
Planting Date: 4/28/18
Harvest Date: 10/6/18 and 10/29/18
Population: 29,000
Row Spacing (in): 30
Hybrid: Fontanelle® 13D843
Reps: 5
Previous Crop: Soybean
Tillage: No-Till

Fertilizer: 130 lb N/ac as anhydrous ammonia on 11/15/17
Irrigation: None
Rainfall (in):



Introduction: The purpose of this study was to evaluate NutriSphere-NH3® applied with anhydrous ammonia. NutriSphere-NH3® is marketed by Verdisian Life Sciences to manage and protect nitrogen fertilizer applied as anhydrous ammonia. The active ingredient is partial calcium salt of maleic-itaconic copolymer, which is promoted to act as a urease and nitrification inhibitor.

Past research on NutriSphere-N® with urea and UAN applications had mixed results. To access a review of research studies evaluating NutriSphere-N®, visit https://go.unl.edu/nutrisphere.

On August 2, the field was flown over with a drone equipped with a MicaSense RedEdge 5 band sensor (Figure 1). The normalized difference red edge index (NDRE) was calculated. The NDRE index is correlated to plant biomass and chlorophyll content and is often used to assess nitrogen status of corn plants. Yield and grain moisture were collected at harvest with a yield monitor.

Results:

	Moisture (%)	Yield† (bu/acre)
Check	16.1 A*	251 B
NutriSphere-NH3™	16.0 A	261 A
P-Value	0.536	0.086

*Values with the same letter are not significantly different at a 90% confidence level.
†Yield values are from cleaned yield monitor data. Bushels per acre adjusted to 15.5% moisture.

Summary:

- Visual differences in NDRE and true color imagery were not apparent on August 2 (Figure 1).
- The NutriSphere-NH3™ treatment had an 11 bu/ac yield increase compared to the untreated check.
- As with any product, this study should be repeated in future years.

Figure 1. True color imagery (top) and normalized difference red edge index (NDRE) from August 2, 2018.

Sponsored by: University of Nebraska Lincoln

In Partnership with: Nebraska Corn Board; Nebraska Soybean Checkoff; Nebraska Corn Growers Association; Nebraska Dry Bean Commission