

Effects of various nitrogen stabilizers on grain yield in corn fertilized with urea

Trial ID: 2014 – University of Tennessee

RESEARCHER(S): Data compiled and submitted by Dr. Frank Yin, University of Tennessee. Write-up of results by Kyle Lilly, CCA and Dr. John D. Bailey, Timac Agro USA.

OBJECTIVE

The current study was conducted to determine the effects of Excelis Maxx treated urea on final grain yield in corn compared to other nitrogen stabilizers and untreated urea at a rate of 150 lb N/ac.

INTRODUCTION

Excelis Maxx is a fertilizer additive that is more than just a stabilizer. It is designed to protect urea-based fertilizers from various loss pathways. It contains NBPT, DCD, LCN Complex, and other proprietary technology that help control volatility, denitrification and leaching. With the addition of our patented root biostimulant (Rhizovit) and organic acids, Excelis Maxx enhances nutrient availability and stimulates root growth and nutrient uptake.

MATERIALS AND METHODS

Excelis Maxx was applied at 1 qt/ton of dry urea and compared to competing stabilizers including Agrotain (2 qt/ton) and Nutrisphere-N (2 qt/ton) and untreated urea (Control). The rate tested was 150 lb N/ac. All treatments were applied in a single, preplant application.

KEY FINDINGS

+9.6 bu/ac
Excelis Maxx vs. Control
at 150 lb N/ac



DETAILED RESULTS

Corn grown with Excelis Maxx treated urea showed higher average yields (151.6 bu/ac) compared to both Control (142.05 bu/ac) and Nutrisphere-N (142.7 bu/ac) (Table 1). Yields between Excelis Maxx and Agrotain were similar at 151.6 and 152.6, respectively. The NBPT-containing stabilizers generally reduced yield loss more effectively than the Nutrisphere-N treatment. NBPT, which is widely accepted as the industry standard to reduce volatility loss of ammonia in surface-applied urea, which is supported by the current findings. **Results suggest that under these study conditions, NBPT-containing stabilizers helped prevent yield loss associated with surface applied urea compared to a stabilizer that did not contain NBPT.**

Table 1 – Treatments, grain yield and gross revenue in corn fertilized with urea and various stabilizers*

Treatment	Grain Yield (bu/ac)	Yield Difference vs. Control (bu/ac)	Gross Revenue vs. Control @ \$3.50/bu (\$/ac)
Excelis Maxx	151.6	+9.6	\$530.60
Agrotain	152.6	+10.6	\$534.10
Nutrisphere-N	142.7	+0.7	\$499.45
Untreated Urea	142	-	\$497.00

^{*}All treatments received 150 lb N/ac applied pre-plant

