

DESIGN: Randomized Complete Block Design, 5 replicates per treatment

RESEARCHER(S): Data compiled and submitted by Dr. Henry Mascagni of Louisiana State University. Write up of results by Dr. John D. Bailey, Timac Agro USA.

OBJECTIVE

The objective of this trial was to compare Excelis Maxx and Agrotain treated UAN (30-0-0-2 S) on dryland corn grain yield comparing two different application methods.

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 controls volatility, denitrification and leaching. With the addition of our patented root biostimulant (Rhizovit) and organic acids, Excelis Maxx also enhances nutrient availability and stimulates root growth and nutrient uptake, all of which are unique to this product.

MATERIALS AND METHODS

Excelis Maxx was applied at 25 oz/ton and Agrotain at 48 oz/ton; these treatments were compared against an untreated UAN (Control). The nitrogen treatments were applied at V2 at a rate of 120 lb N/ ac using two different application methods, knifed-in versus dribbled. No additional nitrogen was added. Knifed-in treatments were applied about 3 inches deep on the side of the row. The applicator knives were raised approximately 6-inches above the soil surface to facilitate the dribble application.

KEY FINDINGS

+6.3 lbs/ac
Excelis Maxx vs.
Untreated Control
(Dribbled on Surface)

DETAILED RESULTS

Corn grown with **Excelis Maxx treated urea showed higher average yield compared to both Agrotain treated UAN and Untreated UAN, but only when the UAN was dribbled onto the surface (see Table 1)**. In general, NBPT-containing stabilizers protect against volatility loss associated with urea based fertilizers; by knifing-in UAN, it is expected that volatility loss would be minimized and stabilizers would not bring much benefit. The addition of a biostimulant with Excelis Maxx did seem to bring more benefit as a stabilizer since yield was higher compared to Agrotain when UAN was knifed-in. However, in both cases, yield loss was not detectable in Control plots, which out-yielded both stabilizers. When UAN was dribbled on, Excelis Maxx likely contributed to not only reduced N loss but also enhanced availability and uptake of N, both of which could explain the higher yields. This study helps demonstrate that NBPT-containing stabilizers have the greatest chance of bringing value when a single application of UAN is applied to the surface of the soil. The root biostimulant technology in Excelis Maxx seems to bring additional value in this scenario.

Table 1: Treatments, application method, and grain yields in corn fertilized with UAN treated with various stabilizers

<u>Side-Dress Treatment</u>	Average Corn Yields, bu/ac	
	<u>Knifed In*</u>	<u>Dribbled on Surface</u>
Excelis Maxx	141.2	140.2
Agrotain	136.4	132.1
Untreated Control	144.3	133.9
<u>Excelis vs. Control</u>	-3.1 bu/ac	+6.3 bu/ac

***Volatility loss minimized. Additives are generally not useful here**