

RESEARCH FOR RESULTS



University of Illinois Nitrogen Trials 2016

OVERVIEW: This is part 1 of a 2016 University of Illinois Nitrogen Management Study. This portion focused on Increased Biomass, Nitrogen Content, and Total Nitrogen Uptake. Preplant applied SoilBiotics **4 - Ultra Boost** treated urea was compared to other nitrogen treatments to show differences in Biomass, nitrogen content, and total nitrogen uptake in corn grain and stover. Part 2 is on the back side of this document.

LOCATION: University of Illinois Crop Sciences Research and Education Center, Champaign, IL.

HYBRID: Croplan 6640 VT Triple PRO. Previous crop: Corn (4th straight year).

PLANTING DATE: 4/23/2016

HARVEST DATE: 10/5/2016

POPULATION: 34,000 plants/acre. Plots were arranged using an RCBD with six replications.

ROWS: 30"

PLOT SIZE: 37.5ft long by 4 rows wide

SOIL TYPE: Silty clay loam

SOIL %OM, CEC and pH: OM 4.2 - CEC 21.8 - PH 5.9

SOIL P and K LEVELS: P = 26ppm - K = 115ppm (Melich 3)

TILLAGE: Conventional: Fall Chisel Plow & Spring Field Cultivator (2 passes)

WEED TREATMENT: Preplant: Harness Extra, Postemergence: Roundup, Status (BASF), AMS.

FERTILIZER: 160lbs of N (no N applied to control)

TREATMENTS: Nutrisphere: 2qt/ton urea
Agrotain: 3qt/ton urea
4 - Ultra Boost: 1gal per ton urea
Hydrahume: 10lbs per 60lbs of N from urea

Treatment	Biomass	N Concentration		N Content		Total N Uptake
		Grain	Stover	Grain	Stover	
	lbs Ac ⁻¹	----- % -----		----- lbs Ac ⁻¹ -----		
Champaign						
No Applied N	5705	0.98	0.41	29	24	54
Upfront N (Urea)	6652	1.2	0.62	115	42	156
+ Agrotain	7046	1.16	0.6	113	42	155
+ Nutrisphere	7278	1.19	0.61	117	44	161
+ Hydra-Hume	7739	1.19	0.67	107	51	158
+ Ultra Boost	8195	1.19	0.64	114	53	167

Summary: **4 - Ultra Boost** treated urea caused greater total nitrogen uptake and nitrogen content in corn grain and stover versus other nitrogen treatments resulting in greater total Biomass.

University of Illinois Nitrogen Trials 2016

OVERVIEW: This portion of the study focused on Increased Greenness and Soil Nitrogen Concentration. Preplant applied SoilBiotics **4 - Ultra Boost** treated urea was compared to other nitrogen treatments to show differences in R2 leaf greenness and soil NO₃ concentration, soil NH₄ concentration, and total soil N concentration in corn grain and stover.

LOCATION: University of Illinois Crop Sciences Research and Education Center, Champaign, IL.

HYBRID: Croplan 6640 VT Triple PRO. Previous crop: Corn (4th straight year).

PLANTING DATE: 4/23/2016

HARVEST DATE: 10/5/2016

POPULATION: 34,000 plants/acre. Plots were arranged using an RCBD with six replications.

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SOIL P and K LEVELS: P = 26ppm - K = 115ppm (Melich 3)

TILLAGE: Conventional: Fall Chisel Plow & Spring Field Cultivator (2 passes)

WEED TREATMENT: Preplant: Harness Extra, Postemergence: Roundup, Status (BASF), AMS.

FERTILIZER: 160lbs of N (no N applied to control)

TREATMENTS: Nutrisphere: 2qt/ton urea
 Agrotain: 3qt/ton urea
4 - Ultra Boost: 1gal per ton urea
 Hydrahume: 10lbs per 60lbs of N from urea

Treatment	Leaf Greenness	Soil Concentration			Total N +/-
		NO ₃ ⁻	NH ₄ ⁺	Total N	
	Units	ppm			
Champaign					
No Applied N	28.2	4.8	8.6	13.4	
Upfront N (Urea)	54.5	16.5	13.7	30.2	+16.8
+ Agrotain	54.5	19	11	30	+16.6
+ Nutrisphere	52.6	23.7	14.7	38.3	+24.9
+ Hydra-Hume	50.7	28.7	16.5	45.2	+31.8
+ Ultra Boost	53.8	33.8	20.3	54.2	+40.8

Summary: **4 - Ultra Boost** treated urea resulted in greater nitrate and ammonium soil concentration versus other nitrogen treatments, showing greater soil nitrogen stability and plant availability.