

# RESEARCH FOR RESULTS



## University of Illinois Nitrogen Trials 2017-04 Leaf Greenness-Soil N Concentration

**OVERVIEW:** This document features results from the 2017 University of Illinois Nitrogen Management Study. The SoilBiotics treatment was either a preplant applied **4 - Ultra Boost** treated urea compared to other products and a control, or a sidedress applied UAN plus **3 - Growth Boost** vs. other products and a control.

**LOCATIONS:** University of Illinois Crop Sciences Research and Education Center, Champaign, IL. **(CU)**  
University of Illinois Crop Physiology Laboratory Research Plots, Harrisburg, IL **(HA)**

**HYBRID:** Croplan 6640 VT Triple PRO. Previous crop: Soybeans.

**PLANTING DATE:** **(CU)** 5/30/17 **(HA)** 5/9/17

**HARVEST DATE:** Various

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

**ROWS:** 30"

**PLOT SIZE:** 37.5 ft long by 4 rows wide

**SOIL TYPE:** Silty clay loam

**SOIL %OM, CEC and pH:** **(CU)** OM 4.1% - CEC 32.0 - pH 5.2; **(HA)** OM 2.2% - CEC 12.0 – pH 7.2

**SOIL P and K LEVELS:** **(CU)** P = 33 ppm - K = 236 ppm; **(HA)** P = 26 ppm – K = 120ppm.  
Both sites (Melich 3 extraction)

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

**WEED TREATMENT:** Preplant: Harness Extra, Postemergence: Roundup, Status (BASF), AMS **(CU)**.  
Preplant: Lumax EZ, Postemergence: Armezon, Roundup, AMS **(HA)**.

**FERTILIZER:** Both locations, 140 lbs of N (**No Applied N = Control**),

**TREATMENTS:** Nutrisphere: 2qt/ton urea  
Agrotain: 3qt/ton urea  
**4 - Ultra Boost:** 1 gal per ton urea (preplant broadcast)  
**3 - Growth Boost** 2qt/acre 50/50 Split N treatment (UAN Y-drop)  
Hydra-Hume: 10 lbs per 60lbs of N from urea

This section features some of the results for mid-season (R2) leaf greenness and soil NO<sub>3</sub><sup>-</sup> concentration, soil NH<sub>4</sub><sup>+</sup> concentration, and total soil N concentration.

Treatment	Leaf Greenness units	Soil Concentration		
		NO <sub>3</sub> <sup>-</sup>	NH <sub>4</sub> <sup>+</sup>	Total N
Champaign				
No Applied N	46.7	7.3	2.8	10.0
Upfront N (Urea)	56.4	20.2	14.5	34.7
+ Agrotain	56.9	13.9	5.9	19.8
+ Nutrisphere	57.3	17.0	8.1	25.1
+ Hydra-Hume	56.1	18.0	7.0	25.0
+ Ultra Boost	58.0	19.3	7.0	26.3

**Summary:** **4 - Ultra Boost** treated urea applied as upfront N in Champaign had highest leaf greenness, NO<sub>3</sub>, and Total N concentration versus other treatments.