NITROGEN & MANURE WITH L-CBF BOOST CORN TRIAL

Heritage Ag Research

Fairbanks, IA

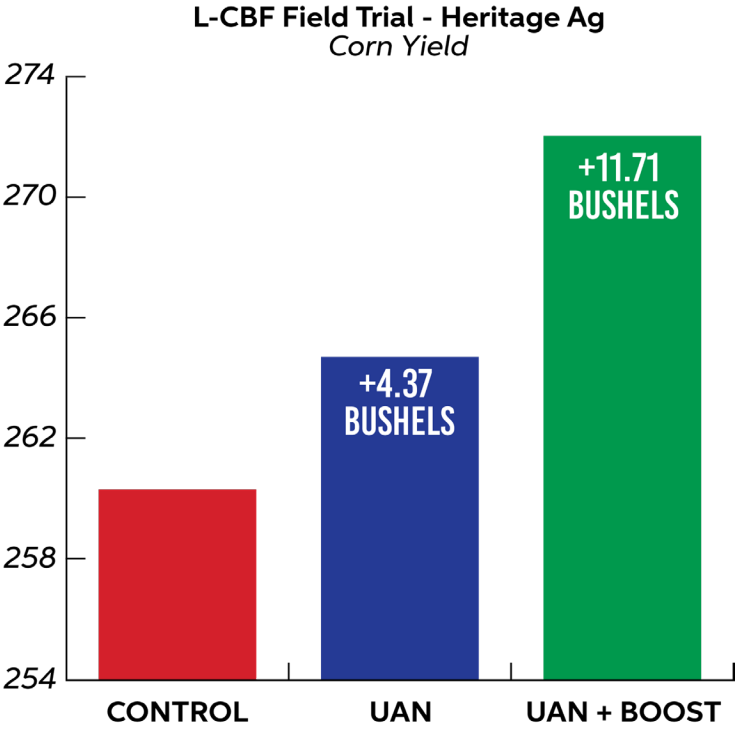
Plot Location: Readlyn, IA
Study Design: Randomized Complete Blocks
Planting Date: May 3rd
Population: 36,000
Emergence Date: May 12th

Broadcast N Application: May 7th
Side-Dress N Application: June 4th
Soil Health Analysis: June 7th & July 20th
Harvest Date: October 19th

SUMMARY

The dry year of 2023 kicked off a 3-year study on applying Nitrogen with Manure in Bremer County, IA. Heritage Ag Research manages the location, chosen because of its great soil quality, long history of successful crops, and regular manure use over 25 years. The site's soil quality exceeded expectations. Soil tests from Midwest Labs showed high levels of reserve Phosphorus (P2 Strong Bray Test) and Potassium base saturation, along with over 6% Organic Matter and a decent Cation Exchange Capacity (CEC=21). Mineral levels like Calcium and Magnesium were also well-balanced, suggesting the potential for high yields.

Soil Test Results			Weak Bray	Strong Bray				% Base Saturation				
pH	OM	CEC	P1	P2	K	Mg	Ca	K	Mg	Ca	H	Na
	%		ppm	ppm	ppm	ppm	ppm	%	%	%	%	%
7.1	**6.9**	**21.2**	**63**	**114**	**462**	**539**	**3083**	**5.6**	**21.3**	**73.1**	**0**	**0**



The study began in the spring of 2023, following a fall application of 3,500 gallons of hog manure in November 2022. This manure application served as the sole additional base fertility, delivering 159 pounds of Nitrogen, 60 pounds of Phosphorus (P2O5), and 104 pounds of Potassium (K2O) per acre. Each treatment plot consisted of 6 replications. On average, the plots yielded 264 bushels per acre, with a wide range of resulting yields (ranging from 238 to 282 bushels per acre).

Notably, treatments incorporating BOOST with UAN28% demonstrated more consistent results, yielding between 265 and 282 bushels per acre. Interestingly, despite using approximately 45 fewer pounds of commercially purchased nitrogen, the BOOST-treated UAN28% applications outperformed both straight UAN28% and the control, producing more bushels per acre.

APPLICATION	CONTROL	#N/A	UAN	#N/A	UAN + BOOST	#N/A
PRE-PLANT (BROADCAST)	0 Gallons UAN 0 Gallons BOOST	**0.0** lbs	20 Gallons UAN 0 Gallons BOOST	**119** lbs	8 Gallons UAN 2 Gallons BOOST	**74** lbs
SIDE-DRESS	0 Gallons UAN 0 Gallons BOOST		20 Gallons UAN 0 Gallons BOOST		16 Gallons UAN 4 Gallons BOOST	

*Results may vary. Always perform a jar test before application.

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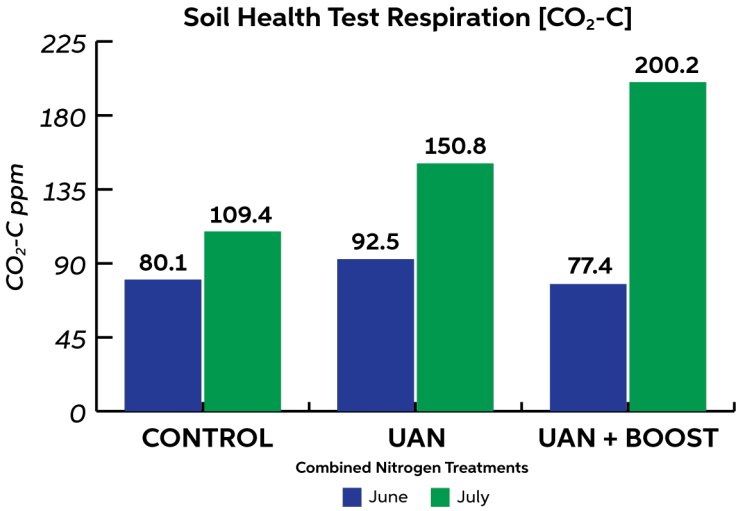
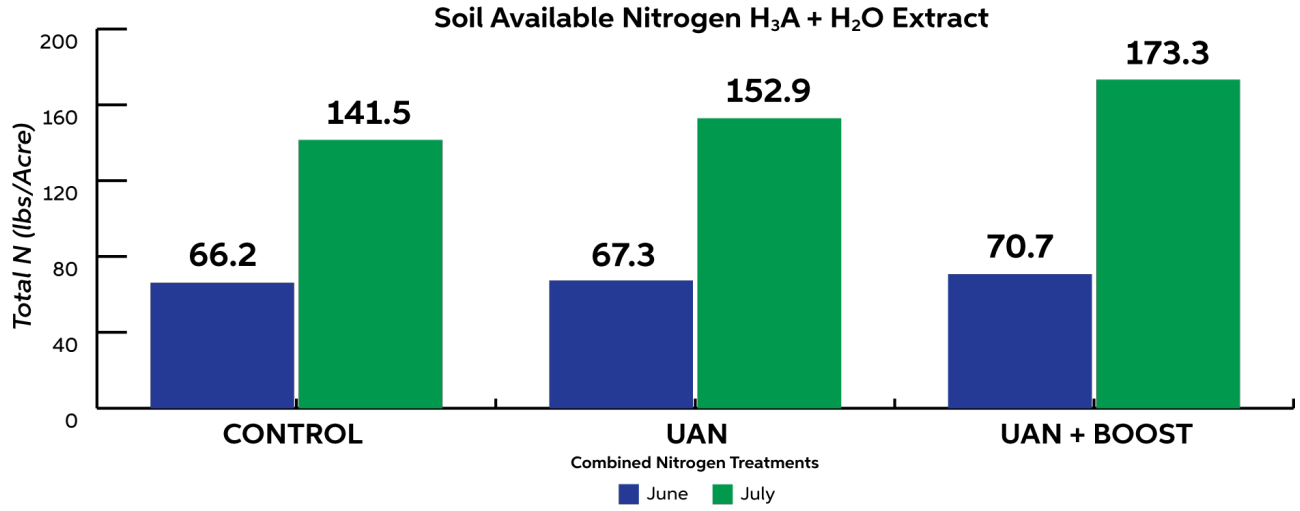
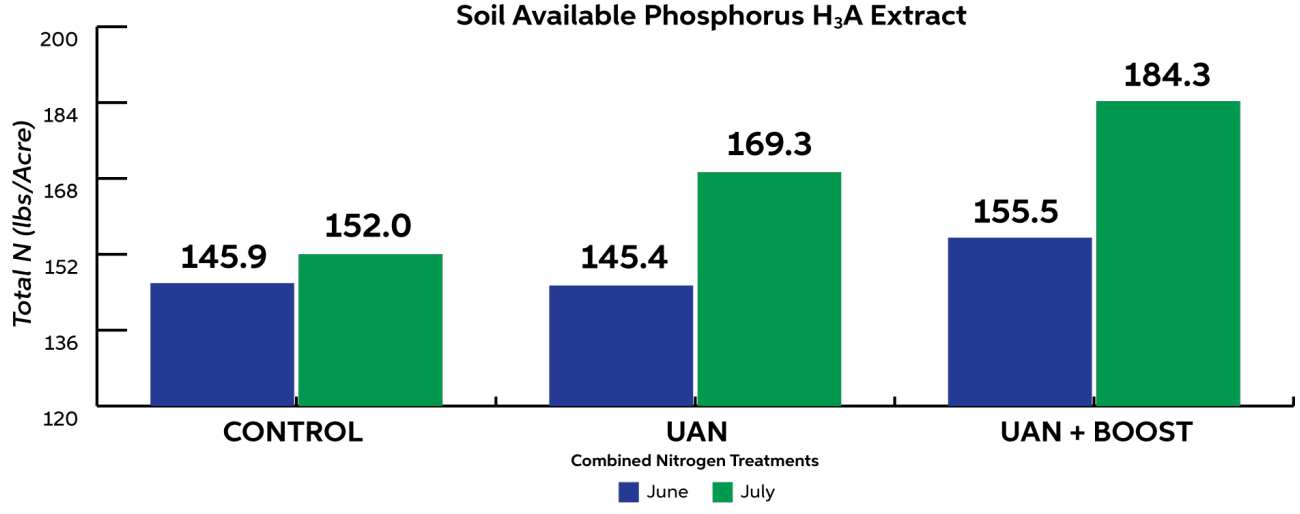


Soil biology plays a vital role in nutrient recycling and mobilization. L-CBF BOOST has demonstrated its effectiveness in stimulating biological activity, as evidenced by increased Soil Respiration (CO2-C) levels measured by Regen Ag Labs. Summer soil samples further indicated an uptick in Total Available Nitrogen (measured in pounds per acre) and Soil Available Phosphorus (measured in pounds per acre of P2O5) using the H3A Extract method. These findings suggest improved utilization and availability of nutrients with the application of L-CBF BOOST.





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