

Total Acre Trials

Evan Schattler - Paulding, OH

"Unfortunately, this plot incurred a projected yield loss of around 40% due to drought. In summary, the standard N rate with EnSoil Algae™ applications yielded less than the grower's standard N rate without EnSoil Algae™ applications (-5.15 bu/ac). On the other hand, the reduced N rate with EnSoil Algae™ applications showed a positive response of around +3.43 bu/ac. Alongside the yield gain, the reduction in nitrogen saved the grower an additional \$51.43/ac (with an overall reduction of 27.5 gal/ac of UAN28% applied at the V10 growth stage). This makes for a very nice ROI during a tough year."

77 Acres Corn

Planted 6/11/24; Harvested 11/22/24

Three Treatments:

- Control - standard fertility - 232 units N
- Treatment 1- standard fertility + EnSoil Algae™ x 4 applications
- Treatment 2 - planting N only (47% N reduction) + EnSoil Algae™ x 4 applications

EnSoil Algae™ applications applied In furrow, Sprayer Broadcast (V3-6), Y-Drop (V8-10), Sprayer Broadcast (VT-R1)

Soil Health and Biomass

- Increased biomass indicates an opportunity to improve residue breakdown and delayed nutrient release.
- The soil health calculation (SHC) is a general indicator of healthy soil, taking into account respiration, organic carbon, and organic nitrogen.

9/5/24	Soil Resp. (ppm CO2-C)	H2O Org. C (ppm)	%MAC	SHC	Biomass (ng/g)	Protozoa (ng/g)
Control	63.9	220	29	12.39	941.29	0
Treatment 2	85.4	247	34.6	15.01	1340.46	7.28

Figure 2. Haney Soil Test and PLFA Results from 9/5/24.

Long Term Fertility Storage

9/5/24	N (lbs/A)	P (lbs/A)	K (lbs/A)	Ca (lbs/A)	Mg (lbs/A)	S (lbs/A)	Zn (lbs/A)	Fe (lbs/A)	Mn (lbs/A)	Cu (lbs/A)	Al (lbs/A)
control	3798	1260	4680	12600	7560	360	117	38637	512	34.9	23842
treatment 2	4050	1440	5940	14400	9720	360	143.1	52131	630	45.7	31631

Figure 3. TND Results from 9/5/24. Soil nutrients are replenished, not extracted.

Return on Investment & Nitrogen Use Efficiency

	yield (bu/A)	Applied Nitrogen (lbs/A)	NUE	\$ savings for applied N @ 100 acres	Commodity Pricing \$4.75/ bu @ 100 acres difference from Grower Standard	Total ROI on 100 acres	Total ROI on 100 acres w/ Cost of EnSoil @ \$9/acre
Control	137.86	232	1.68	0	0	0	0
treatment 1	132.71	232	1.75	0	-\$2446	-\$2446	-\$5146
treatment 2	141.29	125	.88	\$5143	\$1629	\$6772	\$4072