

Evaluating N Rates and Pivot Bio PROVEN® 40 in Corn

Study ID: 0085141202402

County: Platte

Soil Type: Janude fine sandy loam

Planting Date: 5/18/24

Population: Variable 27,000-34,000

Row Spacing (in): 30

Hybrid: DEKALB® DKC62-69

Reps: 3

Previous Crop: Corn

Tillage: No-till

Herbicides: **Pre:** 64 oz/ac of Degree Xtra® + 3 oz/ac

Balance® Flexx + 6 oz/ac Sterling® Blue + 28 oz/ac

Roundup PowerMAX®

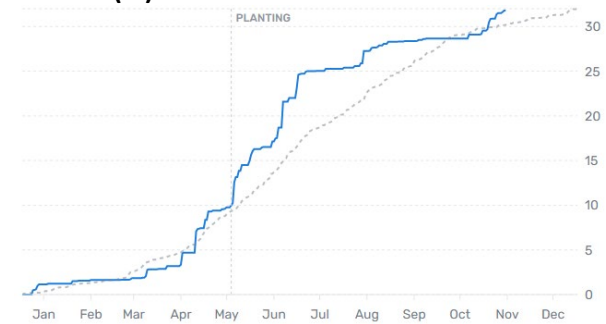
Seed Treatment: Acceleron®

Fertilizer: Preplan: 55 lb N/ac (3-18-24) At planting:

5 gal (6-24-6-1ZN) + pint of micronutrients

Irrigation: Pivot

Rainfall (in):



Introduction: This study evaluated the use of the Pivot Bio PROVEN® 40 as a replacement for commercial N fertilizer with and without cover crops terminated prior to planting. Prior to in-season N application, all treatments received 55 lb N/ac as urea (March 18) and 60 lb N/ac at planting (May 18). The treatments were established with the sidedress application on June 7. Soil samples were collected at 0-1' and 1-2' and soil N and organic matter content were assessed. Total N credit was used to calculate the total N applied using the UNL N recommendation calculator. The numbers are given in the tables below.

Soil OM OM N Credit	Irrigation Water N Credit	Soil N Credit	Legume N Credit	Total N Credit	Yield Goal	UNL N Requirement Before Credits
% lb N/ac	Lb N/ac	Lb N/ac	Lb N/ac	Lb N/ac	(bu/ac)	Lb N/ac
2.1 73.4	5	26.5	0	104	250	335

UNL Suggested N application	Applied N Pre Plant	Applied N at Planting	Required N at Sidedressing	Treatment t1	Treatment 2	Treatment 3
Lb N/ac	Lb N/ac	/ac	Lb N/ac	Lb N/ac	Lb N/ac	Lb N/ac
231	55	60	116	120	80	80 + Pivot Bio

Results:

Treatment		Moisture (%)	Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
No Cover Crops	195 lb N/ac	16.2 ABC*	203 A	882 A
	195 lb N/ac + Pivot Bio PROVEN® 40	15.9 BC	202 A	858 A
	235 lb N/ac	15.9 C	208 A	885 A
Cover Crops	195 lb N/ac	16.8 A	203 A	856 A
	195 lb N/ac + Pivot Bio PROVEN® 40	16.7 AB	198 A	838 A
	235 lb N/ac	16.6 ABC	210 A	894 A
P-Value:		0.019	0.098	0.145

*Values with the same letter are not significantly different at a 90% confidence level.

†Bushels per acre corrected to 15.5% moisture.

‡Marginal net return based on \$4.35/bu corn, and \$22/ac for Pivot Bio, and \$20.4/ac for 120 lb N/ac.

Summary:

- There was no significant difference in yield or marginal net return between the treatments. From this, the suggestion is to use the lowest rate of the tested N rates.
- The addition of cover crops (P:0.4) did not influence yield between N rates.
- The addition of Pivot Bio PROVEN® 40 did not influence yield when applying 195 lb N/ac (P:0.7).
- There were significant differences in moisture between treatments.
- Further testing should be done in future years to find the optimal N rate.