On-Farm Demonstration Trial: Fertility and Soil Studies NACHURS Triple Option® on Soybean Trials

Mike Witt—on-farm trials coordinator and agronomist, ISU Extension and Outreach

Zachary Koopman—agricultural specialist, Agricultural and Engineering/Agronomy Research Farm

Craig Riesberg—agricultural specialist, Western Research and Demonstration Farm

Objective

Determine the effects of NACHURS Triple Option Starter fertilizer on soybean yields.

Introduction

All cropping systems require fertilizer inputs to maintain crop yields. However, excess fertilizer, especially nitrogen (N) and phosphorus (P), can increase problems with soybean growth and development. NACHURS Triple Option is promoted as a versatile NPKS liquid fertilizer that contains 100% orthophosphate, sulfur, and NACHURS Bio-K technology. NACHURS Triple Option also is promoted as a high orthophosphate fertilizer offering immediate nutrient availability. It is important for farmers to use the appropriate rates and methods of fertilizer application to optimize yields and minimize the impact on the environment. The purpose of these trials was to investigate the effect of NACHURS Triple Option® (4-13-17) applied in furrow at planting, and compared with strips with no starter in soybean.

Materials and Methods

Crop Year–2021		
Trial	210308	210504
Trial County	Monona	Boone
Soil Type	Forney, Onawa	Webster, Clarion
Previous Crop	Corn	Corn
Tillage	No-Till (Rye CC)	No-Till
Current Crop	Soybeans	Soybean
Hybrid Number	GH2922 E3	P31T64E
Hybrid Company	Golden Harvest	Pioneer Corteva
Row Spacing	30 in.	30 in.
Seeding Rate	120,000/ac.	120,000/ac.
Planting Date	5/7/2021	4/28/2021
Harvest Date	9/27/2021	9/29/2021
Experimental Type	On-Farm Demo	On-Farm Demo
Replications	4	4
Fertilizer	NACHURS Triple Option® (4-13-17)	NACHURS Triple Option® (4-13-17)
Application Rate	4 gal./ac. In-furrow	4 gal./ac. In-furrow

Results

Trial Number	Treatment	Yield (bu./ac.)[a]	P-value[b]
210308	NACHURS Triple Option®	64.2 a	0.42
	Untreated Control	65.2 a	
210504	NACHURS Triple Option®	65.4 a	0.40
	Untreated Control	66.1 a	

[a]Values denoted with the same letter within a trial are not statistically different at the significance level of 0.10.
[b]P-value = the calculated probability that the difference in yields can be attributed to the treatments and no other factors. For example, if a trial has a P-value of 0.10, there is 90% confidence the yield differences are in response to treatments. This is consistent for demonstration trials.

Key Takeaways

- There was no statistical difference between treatments for yields in all experiments.
- The in-furrow starter fertilizer on soybean did not have a detrimental effect on yield.
- NOTE: The results presented are from replicated demonstration trials. Statistics are used to detect differences at a location and should not be interpreted beyond the single location.