



# STARTER FERTILIZER STUDY

2X2X2

The goal of this study was to compare different starter fertilizer products applied 2x2x2 and their impact on yield and profitability. Four of the six locations experienced a very positive response to 30 units of nitrogen up front in a 2x2x2 system. However, 2023 was definitely a good year for nitrogen returns. Earlier planting dates and cool spring conditions could have driven this outcome. Both treatments provided a positive yield and positive ROI every year for three years and, as such, are now PFR Proven™ practices.

## 2023 MULTI-LOCATION RESULTS

2X2X2 TREATMENTS	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control	62.6	--	--
30 units UAN	65.8	+3.2	+\$21.55
2 gal. Thio-Sul® (12-0-0-26S)	63.4	+0.8	+\$4.90
2 gal. KTS® (0-0-25-17S)	63.6	+1.0	+\$4.85

Soybeans \$13.39/Bu. Thio-Sul® (12-0-0-26S) \$2.91/gal. UAN \$0.71/unit of nitrogen. KTS® (0-0-25-17S) \$4.27/gal. These results are based on the disclosed study parameters and participating sites.

## 3-YEAR MULTI-LOCATION STARTER FERTILIZER - 2X2X2 RETURN ON INVESTMENT



## 2023 NODULE COUNT RESULTS @ V5

	% ACTIVELY FIXING NODULES		
	KY	CIL	IA
Control	98%	100%	99%
UAN	100%	93%	90%
Thio-Sul® (12-0-0-26S)	94%	100%	96%
KTS® (0-0-25-17S)	98%	98%	95%

PARTICIPATING SITES





# STARTER FERTILIZER STUDY

## DUAL DRIBBLE

This study compared different starter fertilizer products, applied dual dribble on the surface, and their impact on yield and profitability. While some growers are investing in a 2x2x2 system for corn, they come at a cost. Because of this, there is interest in lower-cost alternatives, so we chose to test dual dribble systems. Most sites received nice rainfall soon after the application, which helped incorporate the products into the root zone, 2023 was a good year to test this system.

### 2023 MULTI-LOCATION RESULTS

DUAL DRIBBLE TREATMENTS	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control	75.1	--	--
<b>30 units UAN</b>	<b>77.7</b>	<b>+2.6</b>	<b>+\$13.51</b>
2 gal. Thio-Sul® (12-0-0-26S)	76.5	+1.4	+\$12.93
2 gal. KTS® (0-0-25-17S)	75.7	+0.6	-\$0.51

Soybeans \$13.39/Bu. Thio-Sul® (12-0-0-26S) \$2.91/gal. UAN \$0.71/unit of nitrogen. KTS® (0-0-25-17S) \$4.27/gal. These results are based on the disclosed study parameters and participating sites.

### 2023 STARTER FERTILIZER - DUAL DRIBBLE RETURN ON INVESTMENT

	30 UNITS UAN	2 GAL. THIO-SUL® (12-0-0-26S)	2 GAL. KTS® (0-0-25-17S)
INDIANA	\$10.84	\$35.69	\$16.90
KENTUCKY	\$22.88	-\$12.52	-\$12.56
C. ILLINOIS	\$34.94	\$37.03	\$7.53
S. ILLINOIS	\$41.63	\$19.62	-\$8.54
OHIO	\$6.82	\$12.93	\$3.51
DELTA	-\$32.02	-\$9.84	-\$8.54



Scan the QR Code to watch a video about this study!

#### PARTICIPATING SITES

IN	KY	C.IL	S.IL	OH	IA	NE	MN	WI	DELTA	FARM
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# STARTER FERTILIZER PLACEMENT STUDY

This study compared starter fertilizer placement with the planter (on top vs. in the ground and one side vs. both sides) and how the applications impact yield and profitability. As more growers invest in 2x2x2 systems for corn, we wanted to see if there could also be a benefit for soybeans. This is the first year of the study, and the results are positive. However, it's important to note that many locations were planted early in 2023 and experienced extended cool conditions in the spring. With that said, the 2x2x2 system did perform well. Additional years of testing are necessary before drawing any conclusions.

## 2023 MULTI-LOCATION RESULTS

TREATMENTS	PLACEMENT	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control	--	70.4	--	--
30 units UAN	2x2	72.5	+2.1	+\$6.82
	<b>2x2x2</b>	<b>74.0</b>	<b>+3.6</b>	<b>+\$26.90</b>
	Single Dribble	73.3	+2.9	+\$17.53
	Dual Dribble	71.9	+1.5	-\$1.22

Soybeans \$13.39/Bu. UAN \$0.71/unit of nitrogen. These results are based on the disclosed study parameters and participating sites.

## 2023 STARTER FERTILIZER PLACEMENT RETURN ON INVESTMENT

	2X2	2X2X2	SINGLE DRIBBLE	DUAL DRIBBLE
INDIANA	-\$1.22	\$45.65	\$13.51	\$0.12
C. ILLINOIS	\$4.14	\$30.92	\$61.72	\$46.99
S. ILLINOIS	-\$1.22	-\$14.61	-\$6.57	-\$14.61
OHIO	\$53.69	\$64.40	\$68.42	\$20.21
NEBRASKA	-\$21.30	\$8.16	-\$50.76	-\$60.13



Scan the QR Codes to watch videos about this study!



PARTICIPATING SITES

