EXTENSION

Nebraska On-Farm Research Network

Years: **1997 - 2003**

Title: **Top-dressing 11-52-0 on No-Till Corn and Soybeans**

Crop: **Corn and Soybeans**

Study ID: **115025199701M7**

County: **Cass**

Objective: **To determine and document the effect of 11-52-0 broadcast surface applied prior to planting on the profitability of corn and soybean production.**

Treatments: **Corn: 10-34-0 banded (80 lbs/ac) vs. 11-52-0 surface applied (100 lbs/ac) plus 10-34-0 banded. (80 lbs/ac). Soybeans: No fertilizer vs. 11-52-0 surface applied. Treatments split in 2000: no till vs. tillage**

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Results:

Soybeans

1997

Soil test P = 9 ppm

Variable	No Bdct	Bdct	Prob >/T/
Yield, bu/ac at 13.0%	50	53	0.02 **
Cost/acre	---	$14.30	

Corn

1998

Variable	No Bdct	11-52-0	Prob >/T/
Yield, bu/ac at 15.5%	147	153	0.06 *
Moisture, %	16.0	15.7	0.13 ns
Test Wt., lbs/bu	58.8	58.9	0.83 ns
Cost/ac	$10.20	$14.30	
Appl.	3.82	10.20	
Total	$14.02	Appl. 3.82	
		Total $28.32	

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Soybeans 1999

Variable	No Bdct	11-52-0	Prob >/T/
Yield, bu/ac at 13%	44	47	0.013**
Moisture, %	9.0	9.0	1.00 ns
Test Wt., lbs/bu	56.9	56.9	0.22 ns
Cost/ac	---	16.80	
		appl. 3.50	
		$20.30	

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Corn 2000 *(68 lbs/ac 10-34-0, 100 lbs/ac 11-52-0)*

Treatment	Yield, bu/ac At 15.5%	Moisture %	Test wt. lbs/bu	Cost $/ac
No Bdct P/No Till	134	13.0	59.0	$29.23
No Bdct P/Tilled	148	13.0	58.9	$38.75
Bdct P/No Till	147	13.2	59.3	$46.73
Bdct P/Tilled	153	13.0	59.5	$56.25

Statistical Analysis: (Prob > F)

Broadcast Phos (P)	0.021**	0.182 ns	0.007***
Tillage (T)	0.001***	0.097*	0.589 ns
PXT	0.061*	0.097*	0.048**

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Treatment Costs: 2000

All Plots	
Preplant herbicide	$17.57
Banded 10-34-0 (68 lbs/ac @ $240/T)	8.16
Application 10-34-0	3.50
Total	*$29.23*
Tillage Plots	
Tillage Cost	$ 5.00
Post Herbicide (Salvo)	1.52
Post Herbicide Application	3.00
Total	*$ 9.52*
Broadcast Phosphorus Plots	
11-52-0 Broadcast (100 lbs/ac @ $280/T)	$14.00
Spread 11-52-0	3.50
Total	*$17.50*

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Soybeans

2001

Treatment	Yield, bu/ac At 13.0%	Moisture, %	Test wt., lbs/bu	Cost, $/ac
No Bdct P/No Till	45	12.4	55.5	$16.19
No Bdct P/Tilled	46	12.4	55.6	$40.22
Bdct P/No Till	49	12.4	55.5	$31.19
Bdct P/Tilled	53	12.4	55.6	$55.22

Statistical Analysis: (Prob > F)

Broadcast Phos (P)	0.015**	0.638ns	0.833ns
Tillage (T)	0.144ns	0.387ns	0.356ns
PXT	0.270ns	0.766ns	0.750ns

Soil P Test (0-4") – Fall 2001

No Bdct P Fertilizer: 11 ppm
5 Years Bdct P Fertilizer: 23 ppm

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Treatment Costs: 2001

No-Till Plots		
Herbicide		**$16.19**
Tillage Plots		
Herbicide		**$ 16.22**
Chisel Plow		**10.00**
Disc		**7.00**
Mulch Tredder		**7.00**
	Total	***$ 40.22***
Broadcast Phosphorus Plots		
11-52-0 Broadcast (100 lbs/ac @ $240/T)		**$12.00**
Spread 11-52-0		**3.00**
	Total	***$15.00***

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Corn
2002

Treatment	Yield, bu/ac At 15.5%	Moisture %	Test wt. lbs/bu	Cost $/ac
No Bdct P/No Till	49	25.1	52.8	------
No Bdct P/Tilled	23	24.1	54.2	------
Bdct P/No Till	54	23.7	53.0	$13.05
Bdct P/Tilled	37	22.9	55.4	$13.05

Statistical Analysis: (Prob > F)

Broadcast Phos (P)	0.022**	0.029 **	0.049**
Tillage (T)	0.0009***	0.032**	0.0009***
PXT	0.324 ns	0.705 ns	0.198 ns

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Treatment Costs: 2002

Broadcast Phosphorus Plots	
11-52-0 Broadcast (98 lbs/ac @ $205/T)	**$10.05**
Spread 11-52-0	**3.00**
Total	***$13.05***

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Soybeans, 2003 (NC+ 3All)

Treatment	Yield, bu/ac at 13%	Moisture %	Test wt. lbs/bu	Cost $/ac
No Bdct P/No Till	32	8.0	56.7	----*
No Bdct P/Tilled	31	8.1	56.8	----*
Bdct P/No Till	35	8.1	56.7	----*
Bdct P/Tilled	36	8.1	56.8	----*

Statistical Analysis: (Prob > F)

Broadcast Phos (P)	<.0001 ***	0.015 **	0.794 ns
Tillage (T)	0.752 ns	0.228 ns	0.346 ns
PXT	0.284 ns	0.670 ns	0.628 ns

**** Residual study in 2003. No treatments applied.***

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Summary: **The application of 11-52-0 broadcast increased seed yield of soybeans in 1997 and 1999. Corn grain yields were increased by the 11-52-0 broadcast in 1998. In 2000, phosphorus broadcast increased grain yield (9 bu/ac) and test weight (0.4 lbs/bu). Tillage also increased grain yield (10 bu/ac) and reduced grain moisture at harvest slightly. In 2001 broadcast phosphorous increased the seed yield of soybeans 6 bu/ac. In 2002, broadcast phosphorus increased grain yield and test weight and reduced grain moisture at harvest. Tillage done in 2000 and 2001 resulted in reduced yields and grain moisture at harvest and increased test weights in 2002. Residual effects of phosphorus gave increased seed yield and a slight increase in seed moisture in 2003.**

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