

Nebraska Soybean & Feed Grains Profitability Project

Years: 2002-2004

Title: Profitability of Using Starter Fertilizer vs. Municipal Biosolids in the Production of Corn and Soybeans

Crop: Corn (2002), Soybeans (2003), Corn (2004)

NSFGPP Operator: Jim & Mike Stewart, Lancaster County

Private Industry Cooperator: Earle Raun

Objective: To determine and document the effect of Municipal Biosolids vs. Starter Fertilizer on the profitability of producing corn/soybeans in rotation.

Treatments: No starter fertilizer vs. starter fertilizer vs. biosolids broadcast in fall of 2001.

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Costs: 2002 (Corn AgSource G903BT)

No Starter

31 lbs N/ac pre-plant (112 lbs 28-0-0 @ \$134.40/T)	\$7.53
+ \$.44 zinc, 11 oz.	.44
Application	2.50
74 lbs N/ac side-dress (265 lbs 28-0-0@\$117.60/T)	15.58
Application	<u>2.50</u>
Total	\$28.55

Starter

Nitrogen & zinc (same as above)	\$28.55
45 lbs/ac 10-34-0 @ \$217/T	4.88
Starter Application	2.50
Total	\$35.93

Biosolids

Preplant nitrogen & zinc (as above)	\$10.47
30 cu/yds/ac @ 0.65/cu yd credit	-19.50
Spreader charge (30 cu yd @ 0.25)	7.50
Spreading Labor	52.00
Total	\$50.47

On-Farm Comparison Results

- STEWART

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Soil Test: April 24, 2002

Soil pH: 6.6

Residual N: 5.4 lbs/ac

Organic Matter: 3.8%

Soil P: 24 ppm

Results: Corn 2002

<u>Variable</u>	<u>No</u> <u>Starter</u>	<u>Starter</u>	<u>Biosolids</u>	<u>Prob >F</u>
Yield, bu/ac at 15.5%	110	109	112	0.404 ns
Moisture, %	22.9	22.5**	22.9	0.0385 **
Test Wt., lbs/bu	52.2	52.3	52.7*	0.0904 *
Pop., 1,000 plants/ac	20.2	19.6	20.7	0.560 ns
Cost/ac	\$28.55	\$35.93	\$30.47*	

* Biosolid cost prorated at 50% per year over 4 years

On-Farm Comparison Results

- STEWART

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Results: Soybeans 2003 (NK35A6)

<u>Variable</u>	<u>No</u> <u>Starter</u>	<u>Starter</u>	<u>Biosolids</u>	<u>Prob >F</u>
Yield, bu/ac at 13%	47	46	38 **	0.030 **
Moisture, %	12.7	12.6	13.4	0.239 ns
Test Wt., lbs/bu	57.2	57.4	57.0	0.261 ns
Cost/ac	-----	\$5.25	\$10.00	

Results: Corn 2004 (NK 79L3)

<u>Variable</u>	<u>No</u> <u>Starter</u>	<u>Starter</u>	<u>Biosolids</u>	<u>Prob >F</u>
Yield, bu/ac at 15.5%	171	172	166	0.728 ns
Moisture, %	21.2	20.8	21.0	0.573 ns
Test Wt., lbs/bu	58.8	58.7	58.3	0.212 ns
Plants, 1000/ac	21.9	21.5	22.6	0.462 ns
Cost/ac	\$28.50	\$35.50	\$5.00	---

Summary: The application of starter fertilizer resulted in slightly lower grain moisture at harvest. The application of biosolids resulted in slightly higher grain test weight. Residual effect of applied biosolids resulted in reduced soybean seed yield in 2003 due to increased early weed/insect pressure. Growth and yields of corn were not affected by treatment in 2004.