On-Farm Comparison Results
VINDUSKA

Nebraska Soybean & Feed Grains Profitability Project

Years:	1999-2007
Title:	Commercial Fertilizer vs. Biosolids
Crop:	Corn/Soybeans
NSFGPP Operator:	Lynn Vinduska, Cass County
Private Industry Cooperator:	Keith Glewen
Objective:	To determine & document the effect of Municipal Biosolids as a replacement for commercial fertilizer on the profitability of crop production.
Treatments:	(1998) 100 lbs/ac N (28-0-0) plus 105 lbs/ac 10-34-0 vs. Omaha Biosolids @ 25 cubic yds/ac (~25 T/ac) (Dec. 2004) 100 lbs/ac N (28-0-0) plus 63 lbs/ac 10-34-0 vs. Omaha Biosolids @ 35 cubic yds/ac (~35 T/ac)

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Results:1999 Corn

Variable		Fertilizer	Biosolids	Prob >/T/
Yield, bu/ac @ 15.5%		128	146	0.035 **
Moisture, %		12.5	12.6	0.78 ns
Test Wt, lbs/bu		60.6	61.0	0.036 **
Cost	N	18.75	($9.00)	Biosolids
	Appl.	2.00	25.00	Equip
P (Soil P = 10 ppm)		12.58	10.00	Labor
	Appl.	1.50		
	Total	$34.83	$26.00	
			$13.00	50%

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Results: 2000		Soybeans	
Variable	Fertilizer	Biosolids	Prob >/T/
Soil P, ppm	5	18	
Yield, bu/ac @ 13%	41	50	0.016 **
Moisture, %	9.2	9.3	0.025 **
Test Wt, lbs/bu	55.8	55.7	0.342 ns
Cost (1999resid)	---	$6.50	
Results: 2001		Corn	
Yield, bu/ac @ 15.5%	94	136	0.0004 ***
Moisture, %	16.8	17.0	0.255 ns
Cost (1999resid)	---	$3.25	
100 lbs 11-52-0	$12.00	---	
P Application	3.00	---	
Total	$15.00	$3.25	

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Results: 2002		Soybeans	
Variable	Fertilizer	Biosolids	Prob >/T/
Soil P, ppm (Fall)	16	69	
Yield, bu/ac @ 13%	43	47	0.255 ns
Moisture, %	11.9	11.8	0.326 ns
Cost (1999resid)	---	$3.25	
Results: 2003		Corn (Garst 8484)	
Yield, bu/ac @ 15.5%	121	133	0.087 *
Moisture, %	17.4	16.8	0.061 *
Cost/ac		No residual	
Results: 2004		Soybeans (Asgrow 3302RR)	
Yield, bu/ac @ 13%	47	52	0.204 ns
Moisture, %	8.1	8.2	0.648 ns
Cost/ac	---	No residual	---

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Results: 2005		Corn (Garst 8451)	
Variable	Fertilizer	Biosolids	Prob >/T/
Biolsolids (35 yds/ac) applied again Fall 2004 (Dec)			
Yield, bu/ac @ 15.5%	157	171	0.0734 *
Moisture, %	13.1	13.5	0.0061 ***
Cost/ac (Nit)	$26.00		
Cost/ac (Phos)	$14.00		
Cost/ac (Biosolids)		$13.25	
Results: 2006		Soybeans (Asgrow 3002)	
Yield, bu/ac @ 13%	53	63	0.0101 **
Moisture, %	9.5	9.5	0.854 ns
Cost/ac (Biosolids)	---	$6.62	---

Planting Date: 5/10/06 Harvested Date: 11/4/06

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Results: 2007		Corn (DKC 61-73)	
Variable	Fertilizer	Biosolids	Prob >/T/
Yield, bu/ac @ 15.5%	108	136	0.0065 ***
Moisture, %	14.3	14.3	0.811 ns
Cost/ac (Nit)	---	---	---
Cost/ac (Phos)	---	---	---
Cost/ac (Biosolids)	---	$3.31	---

Planting Date: 4/21/07 Harvested Date: 9/27/07

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Summary: In 1999, the sludge treatment resulted in a significantly higher grain yield & slightly higher test weight when compared to the fertilizer treatment. Soybean seed yield was higher in 2000 where sludge was applied in 1999. Seed moisture was also slightly higher. In 2001, grain yield was higher where sludge was applied in 1999. The application of phosphorus fertilizer on the fertilized strips did not make up the difference. Soybean yield & seed moisture at harvest were not affected by residual sludge in 2002. The residual effect of applied sludge resulted in higher grain yield & lower grain moisture at harvest in 2003. No residual effects of sludge were observed in terms of soybean yield in 2004. Biosolids applied in Fall 2004. Five gallons of 10-34-0 ($14/ac) applied to non-biosolid treatment strips in Spring 2005. Corn grain yield was higher & grain moisture was higher in 2005 where biosolids had been applied. Soybean seed yields were higher in 2006 where biosolids were applied in 2004. Corn grain yields were higher in 2007 where biosolids were applied.