EXTENSION

Nebraska On-Farm Research Network

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)
Study ID:	119109200201M3
County:	Lancaster County
Objective:	To determine and document the effect of Municipal Biosolids vs. Starter Fertilizer on the profitability of producing corn/soybeans in rotation.
Treatments:	Three treatments: No starter fertilizer vs. starter fertilizer vs. biosolids. Broadcast in fall of 2001 only. Data for subsequent years is measurement of residual effect of 2001 application.

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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		2.50
	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

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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**

Variable	No Starter	Starter	Biosolids	Prob >F
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**

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Results: Soybeans 2003 (NK35A6)

Variable	No Starter	Starter	Biosolids	Prob >F
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)

Variable	No Starter	Starter	Biosolids	Prob >F
Yield, bu/ac at 15.5%	171	172	166	0.728 **
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	---

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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.**

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