Nebraska On-Farm Research Network

Manure as a Replacement for Nitrogen Fertilizer in a Soybeans/Corn Rotation (Field 2)
Study ID: 097155199602M2
County: Saunders

OBJECTIVE: To determine and document the effect of using feedlot manure as a replacement for nitrogen fertilizer on the profitability of a soybean/com rotation. Two sources of manure used: solid (Timmerman) and liquid (Mead).

Treatments:	1996	1997
Fertilizer only	none	115 lbs N/acre
Solid '97 (Fertilized in 1996)	none	22 ton manure/acre
Liquid '97 (Fertilized in 1996)	none	18 ton manure/acre
Solid '96	22 ton manure/acre	115 lbs N/acre
Liquid '96	18 ton manure/acre	115 lbs N/acre

Comparative cost (per acre)

Fertilizer only	$ 0.00	$25.30
Fertilizer Application		$ 4.00
Total		$29.30
Solid '97, 11 ton/yr	$ 0.00	$19.80
Liquid '97, 9 ton/yr	$ 0.00	$16.20
Solid '96, 11 ton/yr	$19.80	$19.80
115 lbs N '97		$25.30
Fertilizer Application		$ 4.00
Total	$19.80	$49.10
Liquid '96, 9 ton/yr		
115 lbs. N '97	$16.20	$16.20
Fertilizer Application		$ 4.00
Total	$16.20	$45.50

Nebraska Soybean & Feed Grains Profitability Project

University of Nebraska Lincoln

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RESULTS:	1996 SOYBEANS	1997 CORN
Moisture (%)		
Fertilizer only	9.60	16.8
Fertilizer, '96/Solid '97	9.64	17.3**
Fertilizer, '96/Liquid '97	9.60	17.0**
Solid '96 + Fertilizer '97	9.64	16.8
Liquid '96 + Fertilizer '97	9.56 **	17.0
Test Weight (pounds/bushel)		
Fertilizer only	56.1	57.6
Fertilizer, '96/Manure '97	55.9	57.6
Fertilizer, '96/Manure '97	56.0	57.8
Solid '96 + Fertilizer '97	55.8 **	57.5
Liquid '96 + Fertilizer '97	55.7 **	57.6
Yield (bushel/acre @ 15.5%)		
Fertilizer only	51	163
Fertilizer, '96/Manure '97	51	156**
Fertilizer, '96/Manure '97	50	161**
Solid '96 + Fertilizer '97	46 **	165
Liquid '96 + Fertilizer '97	47 **	164

** significantly different at 95% confidence level

Summary: In 1996, the use of manure prior to growing soybeans resulted in a reduction in seed yield and a lower test weight. The use of manure did not affect seed moisture at harvest; however, the use of liquid manure did give slightly lower seed moisture than where solid manure was used.

The application of manure in 1997 resulted in higher grain moistue and lower yields as compared to strips that received fertilizer only or fertilizer in 1997 and manure in 1996.