Manure as a Source of Phosphorus - Corn/Soybean Rotation

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OBJECTIVE: To determine and document the effect of using commercial fertilizer vs. using feedlot manure as a source of phosphorus on the profitability of a corn/soybean rotation.

FERTILIZER	**FEEDLOT MANURE**
Treatments:	**Treatments:**
1996 -	**1996 -**
Soil P: 9ppm (Bray)	Soil P: 9 ppm (Bray)
100 pounds/acre N	35 ton/acre feedlot manure + anhydrous
+ 8 gallon/acre 10-34-0	ammonia 90 pounds/acre **N** as anhydrous ammonia
dual placed @ 30 inch spacing	
Plant cor	Plant corn
1997 -	**1997 -**
Soil P: 14 ppm (Bray)	Soil P: 38 ppm (Bray)
Plant soybeans	Plant soybeans
1998 -	**1998 -**
Soil P: 6 ppm (Mehlich 3)	Soil P: 14 ppm (Mehlich 3)
Apply anhydrous ammonia	Apply anhydrous ammonia
Plant corn	Plant corn

Comparative cost (per acre)		**Comparative cost (per acre)**	
CORN	1996		1996
100 pounds N	$14.20	90 pounds N	$12.78
9 gallons 10-34-0	$10.64	Manure (50%)	$14.78
Application Cost (N+P)	$ 7.50	Application Cost (N)	$ 6.00
Total	$32.34	Total	$33.56
SOYBEANS	1997		1997
None	$ 0.00	Manure (25%)	$ 7.39
CORN	1998		1998
None	$ 0.00	Manure (25%)	$ 7.39

RESULTS:	**1996 CORN** @15.5%	**1997 SOYBEANS** @13%	**1998 CORN** @15.5%
Moisture (%)			
Fertilizer	22.1***	11.6	16.9**
Manure	24.2	11.4	16.7
Test Weight (pounds/bushel)			
Fertilizer	54.7***	55.1	57.5
Manure	54.7	55.3	57.8
Yield (bushel/acre)			
Fertilizer	124***	51***	196
Manure	137	57	199

** significantly different at 95% confidence level
*** significantly different at 99% confidence level

Summary: **Use of manure resulted in higher grain yields than from fertilizer in 1996; however, the grain was wetter at harvest. In 1997, soybean seed yield was higher where manure was applied in 1996. In 1998, corn grain was drier where manure was applied in 1996. Grain yield difference was significant at the 80% confidence level.**