

Nebraska Soybean & Feed Grains Profitability Project

Years: 2001 - 2003

Title: Beef Feedlot Confinement Manure vs. Commercial Fertilizer

Crop: Corn and Soybeans (Rotated each year)

NSFGPP Operator: Dale Hanson & Sons, Saunders County

Private Industry Cooperator: Andy Scholting

Objective: To determine and document the profitability of using two different sources of feedlot manure as a replacement for commercial fertilizer

Soil Tests: Fall, 2000

East (Soybean, 2001) pH 6.1, OM 2.7%, P 16 ppm

West (Corn, 2001) pH 6.1, OM 2.5%, P 20 ppm

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- Treatments:**
1. 200 N (Corn only)
 2. 200 N + 148 P₂O₅ + 157 K₂O + 36S + 10Zn
(less 169 N as ammonia for soybeans)
 3. Mead Cattle manure – West lagoon
(27 T: 210 N, 143 P₂O₅, 181 K₂O, 38S, 1.4Zn)
 4. Mead Cattle manure – kolace pit remedy
(27 T: 210 N, 143 P₂O₅, 181 K₂O, 37S, 1.4Zn)

- Treatment Costs:**
1. \$38.41/ac plus \$4.00/ac application
 2. \$107.55/ac plus \$6.00/ac application
 3. \$44.00/ac applied & incorporated
 4. \$44.00/ac applied & incorporated

On-Farm Comparison Results

- HANSON

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Results: 2001

Corn

<u>Variable</u>	<u>N Only</u>	<u>Mixed</u>	<u>West</u>	<u>Kolace</u>	<u>Prob >F</u>
Yield , bu/ac at 15.5%	214b	219a	218ab	218ab	0.086*
Moisture, %	17.9a	18.3a	17.9a	18.1a	0.816 ns
Test Wt., lbs/bu	58.6a	58.2a	58.2a	58.6a	0.822 ns
Cost/ac	\$42.41	\$77.98	\$22.00	\$22.00	

Soybeans

Yield , bu/ac at 13%	64c	70b	70ab	71a	0.0001***
Moisture, %	10.2a	10.0a	10.2a	10.1a	0.269 ns
Test Wt., lbs/bu	55.8a	55.6a	55.5a	56.0a	0.162 ns
Cost/ac	-----	\$35.57	\$22.00	\$22.00	

Statistical Analysis: Duncan's Multiple range Test. Values followed by the same letter are not significantly different at 0.05 probability.

On-Farm Comparison Results

- HANSON

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Results: 2002

Corn

<u>Variable</u>	<u>N Only</u>	<u>Mixed</u>	<u>West</u>	<u>Kolace</u>	<u>Prob >F</u>
Yield , bu/ac at 15.5%	219b	222a	223a	223a	0.0102**
Moisture, %	18.0a	17.3b	17.0c	16.8c	<0.0001 ***
Test Wt., lbs/bu	59.2a	59.7a	59.8a	59.5a	0.198 ns
Cost/ac	\$26.00	\$43.78	\$37.00	\$37.00	

Soybeans (Variety: Asgrow 2703)

Yield , bu/ac at 13%	63a	62a	61b	62a	0.0097 ***
Moisture, %	10.7a	10.8a	10.7a	10.6a	0.534 ns
Test Wt., lbs/bu	53.9a	54.0a	54.0a	53.8a	0.742 ns
Cost/ac	-----	\$17.78	\$11.00	\$11.00	

Statistical Analysis: Duncan's Multiple range Test. Values followed by the same letter are not significantly different at 0.05 probability.

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Results: 2003

Corn following corn – Pioneer 33B51

<u>Variable</u>	<u>N Only</u>	<u>Mixed</u>	<u>West</u>	<u>Kolace</u>	<u>Prob >F</u>
Yield , bu/ac at 15.5%	222b	232a	229a	230a	0.006 ***
Moisture, %	18.2a	18.1a	18.0a	18.0a	0.593 ns
Test Wt., lbs/bu	59.0b	59.4ab	59.8a	59.1b	0.039 **
Cost/ac	\$25.79	\$34.68	\$31.29	\$31.29	

Corn following soybeans – Pioneer 33B51

Yield , bu/ac at 13%	236a	241a	238a	239a	0.214 ns
Moisture, %	17.8a	17.3a	17.6a	17.7a	0.322 ns
Test Wt., lbs/bu	59.8c	59.8bc	60.1ab	60.2a	0.034 **
Cost/ac	\$25.79	\$34.68	\$31.29	\$31.29	

Statistical Analysis: Duncan's Multiple range Test. Values followed by the same letter are not significantly different at 0.05 probability.

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Summary: In 2001, the use of multi-nutrient fertilizer or either manure source gave maximum corn yields. For soybeans, either manure source gave maximum seed yield. Seed yield from the no fertilizer treatment was lower than the other treatments in 2001.

In 2002, the use of multi-nutrient fertilizer or either manure source gave maximum corn yields. For soybeans, manure from west lagoon gave slightly lower seed yield. Grain moisture of corn at harvest was the highest where only nitrogen fertilizer was applied. Using a multi-nutrient fertilizer resulted in lower grain moisture and were further reduced when manure was applied.

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Summary: In 2003, corn yields from corn following corn were highest following residual mixed fertilizer or manure. Yields were not affected when corn followed soybeans. Grain moisture at harvest was not affected by treatment.