Soybean Yield Response to Nitrogen Applied Pre-plant as Swine Nursery Manure

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Objective:

To compare soybean yield response to nitrogen applied pre-plant as swine nursery manure.

Background

Crop Year:	2008
Cooperator:	Jim Leopold
County:	Putnam
Nearest Town:	Glandorf
Drainage:	Tile-40 ft spacing
Soil type:	Kibbie loam
Tillage:	No-till
Previous Crop:	Soybeans
Variety:	Pioneer23M61
Soil test:	pH 6.5, P 104 ppm, K 292 ppm, OM 3.11%
Planting Date:	May 15, 2008
Row Width:	7.5 in.
Herbicides:	Glyphosate
Insecticide:	n/a
Harvest Date:	October12, 2008
PSNT test:	17 ppm

Methods

A randomized block design with three treatments and three replications was used. Plots were 35 feet wide and 770 feet long. Liquid swine manure from a nursery building was applied using a 2600 gallon manure tanker with a splash bar. Field conditions were dry at the time of application.

The liquid swine manure application rate was 4500 gallons per acre. Manure sample results indicated 22 pounds of available nitrogen per 1000 gallons. Manure treatments received 99 pounds per acre of nitrogen. Manure was applied 10 days ahead of soybean planting. The soybeans were no-tilled.

Swine Nursery Manure Analysis

Nutrient	lbs. per 1,000 Gallons
Nitrogen (available the 1st year)	22.05
Phosphorus as P2O5	5.19
Potassium as K2O	10.34

Weather conditions during the time of manure application were sunny and 75 degrees. The plot received above average rainfall for the first half of the growing season and very little rainfall during the second half of the growing season.

Treatment Summary	Description
Treatment 1 (T1)	No manure applied
Treatment 2 (T2)	4500 gal/ac swine nursery manure

Results and Discussion

Yield Summary

Treatments	Yield (bu/ac)
Average of four reps without manure (T1)	49.8 a
Average of three reps with swine nursery manure (T2)	49.1 a
LSD (0.05)	NS

The results of this plot indicate no statistical difference for yield between the manure treatments and the replications not treated with manure. The manure was available from the farmer's swine nursery building at no cost. In 2008, the nitrogen value of the swine manure was $0.80 per pound or $79 per acre ($0.80 x 22 lbs of N/1,000 gal x 4,500 gal/ac applied).

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