

# Soil Quality Plots, Soybeans

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## Objective

To compare the effects of four long-term soil management programs on the yields of soybeans.

## Background

Cooperator:	Darke County Farm	Fertilizer:	0-0-60 (100 lbs/A)
Nearest Town:	Greenville		0-46-0 (125 lbs/A)
Soil type:	Lippincott & Eldean-Miami	Variety:	Countrymark 3685
Drainage:	Subsurface	Planting Date:	May 7, 1999
Previous Crop:	Corn	Planting Rate:	165,000 seeds/A
Soil Type:	pH 6.5, P 87 ppm, K 248 ppm	Row Width:	30 inches
		Harvest Date:	October 21, 1999

## Methods

These plots were established in the summer of 1997 after the wheat crop. Soil was tested for nutrients in three locations in each of 12 plots. Soil-test values listed above indicate a field average taken in October of 1996. Crop rotation is wheat (1997), corn (1998), and soybeans (1999). Plots will be nutrient tested again, and soil-quality testing will be done after wheat is harvested in 2000.

Plots were planted and analyzed in a complete randomized design with three replications of the treatments. The cover crop treatment is residue from a single winter rye planted in the fall after wheat harvest. The rye cover crop was killed using 1 qt/acre Roundup. The manure treatment is straw manure from beef cattle applied in the fall of 1998. All fertilizer was broadcast using dry fertilizer with a standard 50' spread fertilizer buggy on April 1, 1999, prior to spring tillage on all treatments except the manure plots. All plots were lightly disked in spring of 1999 except for the no-till treatment. The soybeans were planted with a Buffalo slot planter.

## Results

Treatment	Yield (bu/A)
Chiseled	50.857
No-till	46.720
Manure	46.583
Cover Crop	45.240

F<1, no significant differences among treatment means  
LSD (0.05) = 9.974, CV = 11.2%

## Summary and Notes

No significant differences in soybean yields were found among the four soil management treatments. Hairy vetch is planned to be included in the cover crop treatment after wheat in 2000.

For additional information, contact:

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