

# Soybean Tillage

Dennis Baker, Agriculture and Natural Resources Extension Agent

## Objective

The objective of this research is to compare soybeans grown no-till to soybeans planted where the soil has been chiseled and disked in a minimum tillage system.

## Background

Cooperator:	County Farm	Fertilizer:	100 lb/A 0-46-0 and 125 lb/A
County:	Darke		0-0-46
Nearest Town:	Greenville	Herbicide:	PRE: Roundup Ultra Max 26 oz/A
Soil Type:	Patton silty clay loam/ Crosby silt loam		POST: Roundup Ultra Max 26 oz/A
Drainage:	Subsurface	Variety:	Croplan 3276RR
Tillage:	See MMethods	Row Width:	30 inches
Previous Crop:	Corn	Planting Date:	April 30, 2001
Soil Test:	pH 6.5, P 38 ppm, K 175 ppm	Planting Rate:	195,000 seeds/A
		Harvest Date:	October 3, 2001

## Methods

Two treatments consisting of no-till and tillage were replicated five times in a randomized complete block design. Individual treatment strips consisted of twelve 30-inch rows and ranged in area from 7/10 to 1 acre. Tilled plots were chiseled in early April and worked twice with a cultimulcher and disk just prior to planting. Soybeans were planted with a Buffalo slot planter with Kinze brush-type seed-meter units. Soybeans were planted into adequate soil moisture that allowed for normal and even germination in all plots. Entire strips were harvested for yield results. Harvest moisture was determined using a field moisture tester. A weigh wagon was used to determine the weight of grain harvested in each plot. Yields were adjusted to 15.5% moisture.

## Results

**Table 1. Soybean Yield.**

Treatment	Yield (bu/A)
No-till	39.9
Tillage	43.6
LSD (0.05)	NS
F	6.3
CV (%)	5.6

## Summary and Notes

There were no significant differences in the yields in the chiseled plots when compared to no-till. This is the fourth year that this experiment has been conducted in this field in a corn/soybean rotation. Results of the previous three years are as follows:

**Table 2. Three Year Summary.**

	<b>1998 - Corn Yield (bu/A)</b>	<b>1999 - Soybean Yield (bu/A)</b>	<b>2000 - Corn Yield (bu/A)</b>
No-till	106.2	40.2	112.6
Tillage	138.2	50.7	125.1
F	124.5	296.1	2.1
LSD (0.05)	11.6	1.2	NS
CV (%)	4.1	1.2	12.7

Yields were significantly different the first two years favoring the tilled plots. In a contiguous part of the same field receiving the same two treatments, there was less than 1 bu/A difference in corn and soybean yields in 1998 through 2000. Whatever factor was limiting yield in no-till in the trial area of the field appears to be gradually disappearing.

For additional information, contact:

Dennis Baker  
The Ohio State University Extension  
baker.5@osu.edu