

# USDA Inoculant Effects on Soybeans in a Corn/Soybean Rotation

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## Objective

To study the effect of a new inoculant on soybean yields in fields currently in a corn/soybean rotation.

## Background

Cooperator:	Rod Phillips	Soil Test:	pH 6.2, P 42 lbs/A,
County:	Wyandot		K 201 lbs/A, OM 2.8%
Nearest Town:	Carey	Fertilizer:	None
Soil type:	Pewamo, Blount	Herbicides:	Turbo, Canopy, and 2,4-D
Drainage:	Surface, partial tile	Variety:	Asgrow 2704
Tillage:	No-till	Planting Date:	May 6, 1999
Previous Crop:	Corn	Planting Rate:	225,000 seeds/A
		Harvest Date:	September 25, 1999

## Methods

A new pre-mixed, humus-based inoculant containing *Bradyrhizobium japonicum* was applied in a plot using a 15-foot no-till drill. All of the plots containing no inoculant were planted first to avoid contamination of the seed. The inoculant was hand mixed in the seed box, and the inoculant plots were planted. The plots were replicated six times. Each of the plots was 45' x 1,150' in size with 0.75 acres being harvested.

## Results

**Table 1. Soybean Inoculum and Yield.**

Treatment	Yield (bu/A)
No Inoculum	46.72
USDA Inoculum	46.38
LSD (P = 0.05)	NS
CV	1.06%

## Summary and Notes

New soybean inoculant products may be able to improve nitrogen production by increasing the numbers of rhizobia bacteria. The 0.34 bushel/acre difference was not statistically significant in this trial. The lack of response to the inoculant could be due to the shortage of rainfall during the summer. Soil moisture was very limited during most of the growing season. This raises the question about the ability of the rhizobia bacteria to multiply in the dry soil environment.

These results are contrary to many studies completed across the Midwest but consistent with local results from 1998.

## **Acknowledgment**

The inoculant used in this research was donated by Cory Bills of Bird Hybrids ([www.birdhybrids.com](http://www.birdhybrids.com)). Riele Farms, Pioneer Dealer, Upper Sandusky, provided the weigh wagon.

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