

# Soybean Inoculant Effectiveness on Retired CRP Land

Chris Bruynis, Agriculture and Natural Resources Extension Agent

## Objective

To study the effect of inoculant on soybean yields in fields recently removed from the Conservation Reserve Program.

## Background

Cooperator:	Dean Koehler	Fertilizer:	None
County:	Hancock	Herbicide:	Roundup Ultra
Nearest Town:	Wharton	Variety:	Asgrow 3302 RR STS
Soil type:	Blount	Planting Date:	May 7, 1999
Drainage:	Surface, no tile	Planting Rate:	200,000 seeds/A
Previous Crop:	CRP (10 years)	Harvest Date:	October 1, 1999
Soil Type:	pH 6.2, P 43 lbs/A, K 225 lbs/A, OM 2.2%		

## Methods

A powdered peat product containing *Bradyrhizobium japonicum* was applied in a replicated plot using a 30-foot John Deere Air Seeder. The strips were planted by alternating between the two hoppers, with the front hopper containing untreated seed while the rear hopper contained treated seed. The plots were replicated five times to reduce experimental error and field variances. Each of the plots was 0.31 acres (30' x 450') in size. Yield was measured by a weigh wagon provided by Reile Farms, Upper Sandusky.

## Results

Treatment	Yield (bu/A)
No Inoculum	50.23
USDA Inoculum	50.13
LSD (0.05)	1.74
CV	2.0%

## Summary and Notes

With Conservation Reserve Program ground being converted back to row crops, the cooperator was interested in examining soybean response to inoculant in a soil that has not had soybeans grown on it for 10 years. New soybean inoculant products may be able to improve nitrogen production by increasing rhizobia bacteria. A positive yield response for the treated plots was expected but there was no significant difference between the two treatments. 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.

Another possible reason for no response is that there was sufficient nitrogen being released from the organic matter being decomposed in the soil. This field was in CRP for 10 years prior to this crop year, was sprayed with Roundup last fall, planted no-till, and sprayed with Roundup this spring. The organic levels near the surface were estimated to be increased and had the ability to release more nitrogen than fields in corn/bean rotation. These questions could be answered by future research.

For additional information, contact:

Chris Bruynis  
The Ohio State University Extension  
bruynis.1@osu.edu