

# Evaluation of Soil Insecticides in First-Year Corn

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## Objective

To evaluate corn yield benefit from using ProShield seed-coating technology in comparison to conventional granular insecticides in a first-year corn field that trapped western corn rootworm adults in 1999.

## Background

Cooperator:	Vantage Career Center/ Farm Focus	Herbicides:	PRE: Bicep II Magnum (2.1 qt/A) Princep 90DG (1.1 lbs/A)
County:	Van Wert	Fertilizer:	190 lbs/A UAN broadcast
Nearest Town:	Van Wert	Variety:	Northrup King N58-D1
Soil Type:	Hoytville silty clay loam	Planting Date:	May 6, 2000
Previous Crop:	Soybeans	Planting Rate:	28,000 seeds/A
Drainage:	Tile	Row Width:	30 inches
Tillage:	Fall deep-till/ 2x spring cultivate	Harvest Date:	October 21, 2000
Soil Test:	pH 6.1, P 44 ppm, K 197 ppm		

## Methods

Two granular insecticides, one untreated check, and a ProShield seed coating treatment were replicated five times in a randomized complete block design. Each plot contained six rows and was 680 feet long. The study was planted using a John Deere 7000 Max Emerge six-row planter. The granular insecticides were applied in a T-Band at the full-labeled rate. One treatment contained corn with a Force ST seed-coating treatment (ProShield) and was planted without the use of any additional granular insecticide. A limited sampling of the untreated checks indicated that rootworm feeding was negligible; therefore, root ratings were not taken for this study.

Harvest populations were evaluated by counting the number of plants on each side of a 17.5-foot tape at three different locations in each plot. The average of the number of plants counted per 17.5 feet was converted to plants per acre. The entire area of each plot was harvested and weighed by a calibrated weigh wagon, and grain yield was determined at 15% moisture.

## Results

**Table 1. Population and Corn Yield.**

Treatment	Rate per 1,000 feet of row	Harvest Population (plants/A)	Yield (bu/A)
Check	NA	27,100	145.3
ProShield	NA	27,300	145.0
Force 3G	4.0 oz	27,100	143.8
Lorsban 15G	8.0 oz	27,100	145.9
LSD (P = 0.05)		NS	NS
CV (<15% is credible)		1.90%	3.00%

NA = Not applicable, NS = not significant.

## Summary and Notes

The threat of western corn rootworm affecting first-year corn has been well studied in Van Wert County. In 1999, the study field was planted to soybeans where Pherocon AM unbaited yellow sticky traps were placed to trap western corn rootworm adults. An average count of 0.57 western corn rootworm (WCR) adults was caught per trap per day. This is currently less than the widely accepted economic threshold of 2.0 WCR adults per trap per day. This low activity of western corn rootworms during the 1999 growing season would not be enough to warrant the need for insecticide on this first-year corn field. An insecticide study was performed on this field to evaluate yield benefit from using ProShield seed-coating technology in comparison to conventional granular insecticides and to verify the economic threshold. The results of this one-year study indicate no significant yield differences among the four treatments. These results suggest that application of granular insecticide or insecticidal seed coating to prevent western corn rootworm larva damage in first-year corn fields that do not reach economic trapping levels is unnecessary.

## Acknowledgment

The authors wish to express their appreciation to Novartis for donating material in this study.

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