

PROJECT REPORT TO THE NEW YORK STATE IPM GRANTS PROGRAM

Title: Evaluating Soil Characteristics as a Potential Means to Minimize Soil Insecticide Usage to Control Corn Rootworm.

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Abstract:

In the first phase of a multiyear project, studies were conducted to determine adult populations of corn rootworm beetle, *Diabrotica* species, in corn fields grown for silage. Currently, decisions gauging risk of corn rootworm damage and need to use soil insecticides or rotate corn fields are based on corn rootworm beetle population assessments made the previous year. Thus our monitoring effort in 1998 was designed to provide baseline data for a subsequent study on the relationship between soil characteristics and tolerance to rootworm feeding to be conducted in 1999.

The Western New York Crop Management Association (WNYCMA) was contracted to identify and monitor twenty-four corn fields in Wyoming County that would again be planted to corn in 1999 and met the following criteria: twelve fields selected had soil type(s) rated as good for corn growth and development. Twelve additional fields selected had soil type(s) rated as poor for corn growth and development. Other field selection criteria for both sets of fields included: first or second year corn fields, a range of planting dates, corn grown for silage, plant populations 32-34,000 plants / A, row spacing at least 30 inches, no Prowl herbicide used in 1998, and the field manured within past 3 years.

Fields were monitored for corn rootworm (CRW) beetles at time of silking. Fifty-five plants, five plants in each of eleven locations selected at random throughout the field, were assessed for adult CRW beetles. None of the twenty-four fields went over threshold for CRW adult beetles. Sampling efforts were then expanded to identify other fields being monitored by the WNYCMA that were over threshold for CRW, and met soil and other study criteria. Eleven additional fields were identified from the WNYCMA's 1998 crop monitoring field data base as having at or above threshold CRW populations. Sequential sampling methods were used on these fields. Total number of CRW beetles, total number of plants sampled, and average number of CRW beetles per plant were recorded. All fields monitored were in Wyoming county.

Baseline data is presented which will be used in selecting fields for phase II of this study designed to evaluate the use of soil characteristics (soil suitability rating, drainage and pH) in the decision process for the application of soil insecticides to control corn rootworm.

For a printed copy of the entire report, please contact the NYS IPM office at:

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