Section V.
Soil Arthropods

EVALUATION OF SOIL APPLIED INSECTICIDES FOR CONTROL OF GARDEN CENTIPEDES, *Scutigerella immaculata,* IN TOMATO FIELDS

Calvin Benny Fouché & Luis Alex de Almeida Acosta
University of California Cooperative Extension
420 South Wilson Way, Stockton, California 95205-6243
bfouche@ucdavis.edu

Experimental plots were established at Hal and Keith Robertson Farms, Tracy, California, and Bill Alderson Farms in Vernalis, California, in order to evaluate the effectiveness of four different materials for control of the garden centipede in transplanted tomato fields. The plot areas were selected based on evidence of garden centipede damage from previous years. The treatments were applied by mixing the materials with the preplant fertilizers and placed into the beds using two shanks per bed approximately 6 inches apart at a depth of 5-6 inches. The amount of fertilizer applied was between 25 and 28 gallons/acre. All materials were applied on April 5, 2004.

The plots at Hal and Keith Robertson Farms were 5 beds wide by 2,400 feet long or 1.7 acres replicated 6 times through the field. The variety was NP 113. Untreated control plots 1 bed wide by 60 feet long were left in the middle of the field in the center of the area with the most damage from previous years. Damage was not observed this year in the untreated controls in the small plots, probably due to the high level of control of surrounding treatments. The field was furrow irrigated immediately after the application to help the transplants establish in the field. There were no measurable differences between treatments in this field. All materials were very effective in controlling damage from the centipede.

At Bill Alderson's farm, plot size was 3 beds wide by 1,700 feet long or 0.7 acres replicated 3 times. The transplant variety was 9780. The field was sprinkler irrigated 4 times followed by furrow irrigations for the rest of the season. All treatments were effective in controlling damage from garden centipedes. Outside of the treated area, extensive damage was observed as the centipedes apparently had spread to a new area of the field.

Materials Applied with Preplant Fertilizers, Large Plots

Products	Active Ingredient	Method of Application	Formulation	Product/Acre
Mustang	Zeta-cypermethrin	Shank in with fertilizer	1.5EW	4.3 oz
Danitol	Fenpropathrin	Shank in with fertilizer	2.4EC	10.7 oz
Warrior	Lambda-cyhalothrin	Shank in with fertilizer	1CS	3.8 oz
Baythroid	Cyfluthrin	Shank in with fertilizer	2E	2.8 oz
Untreated Control	fertilizer only			

Results from Large Plots at Bill Alderson's Farm

Products	Method of Applicatio	Formulation	Product/Acre	Mean # of Grams/Plant
Baythroid	Band & Incorporate	2 E	2.8 oz	111.5a
Mustang	Band & Incorporate	1.5 EW	4.3 oz	107.1a
Danitol	Band & Incorporate	2.4 EC	10.7 oz	96.3a
Warrior	Band & Incorporate	1 CS	3.8 oz	98.3a
Untreated Control				19.9b

Means in a column followed by the same letter are not significantly different at the 5% Level. DMR

Small Plots in Transplanted Field

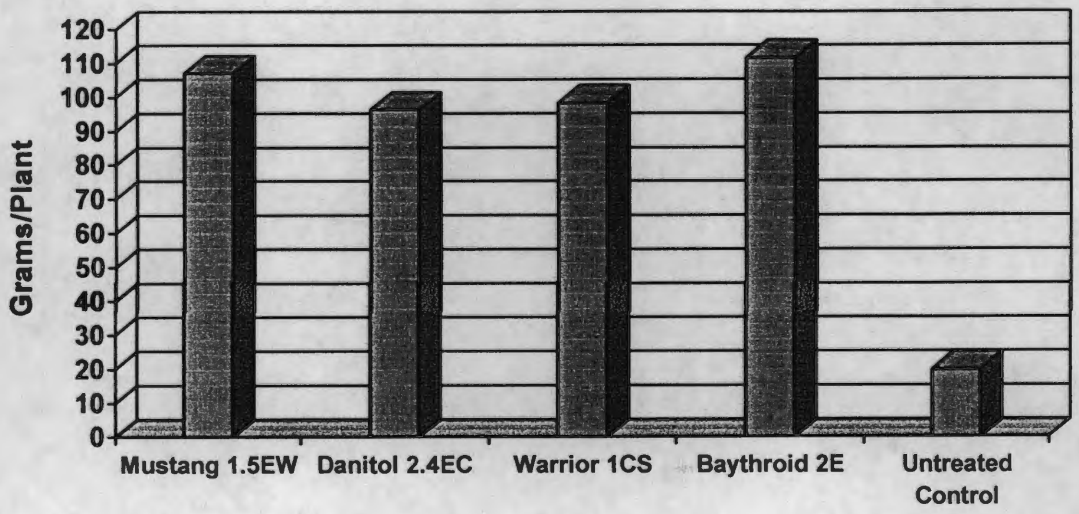
A small plot was established in the middle of the Bill Alderson's field with plots 1 bed wide by 80 feet long. The following materials were sprayed on the beds and incorporated with a rototiller before transplanting two days later. Plants were sprinkler irrigated following the applications. On May 14th, twenty plants from each of the treatments were cut off at the soil line, and weighed.

Materials Applied on Top of Beds and Incorporated with Rottwiller

Products	Method of Applicatio	Formulation	Product/Acre	Mean # of Grams/Plant
Baythroid	Band & Incorporate	2 E	2.8 oz	69.5a
Mustang	Band & Incorporate	1.5 EW	4.3 oz	72.5a
Capture	Band & Incorporate	2 EC	6.4 oz	74.6a
Warrior	Band & Incorporate	1 CS	3.8 oz	76.2a
Untreated Control				61.8a

Means in a column followed by the same letter are not significantly different at the 5% Level. DMR

Mean Weight of Tomato Plants from Large Plots
Bill Alderson's Farm - Vernalis, CA, May 14, 2004



Conclusions

All of the pyrethroid treatments applied with the transplant fertilizers in large scale plots provided control of garden centipedes in transplanted tomato fields with a history of extensive damage. These materials are currently registered for use in tomatoes. The lack of damage in the untreated control plots this year prevents us from analyzing these results. While in the past three years we have been able to treat small areas in the middle of large problem spots and show differences, it is not understood why we were not able to treat large areas and show differences in small untreated sections.

The thorough incorporation of these pyrethroids prior to transplanting with a rototiller was very effective in the small plots, as in previous year's research trials.