

THE ONTARIO VEGETABLE GROWERS' MARKETING BOARD

RESEARCH RESULTS

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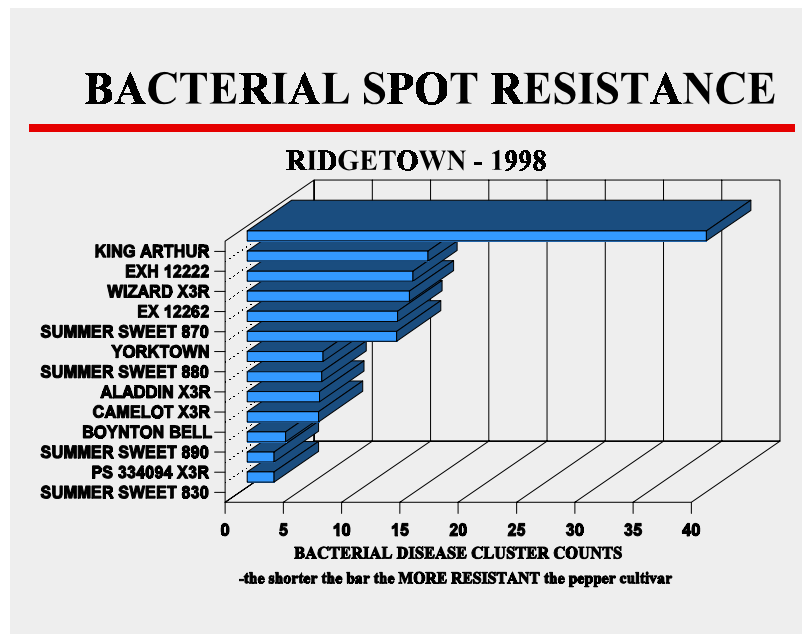
PROJECT TITLE: THE DEVELOPMENT OF PEST MANAGEMENT STRATEGIES FOR INSECTS AND PLANT DISEASES IN PROCESSING VEGETABLES - 1998

OBJECTIVES and RESULTS

A. PEPPERS

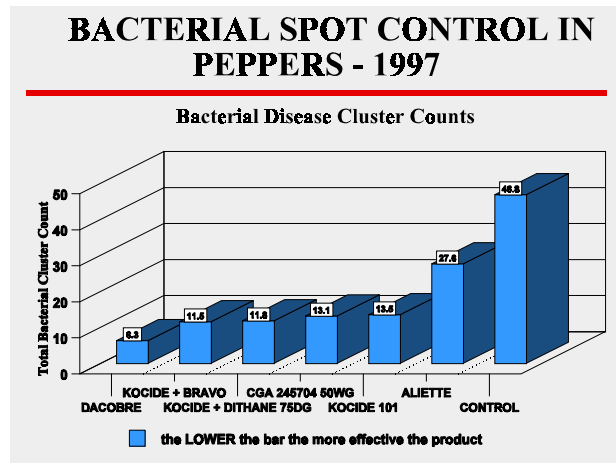
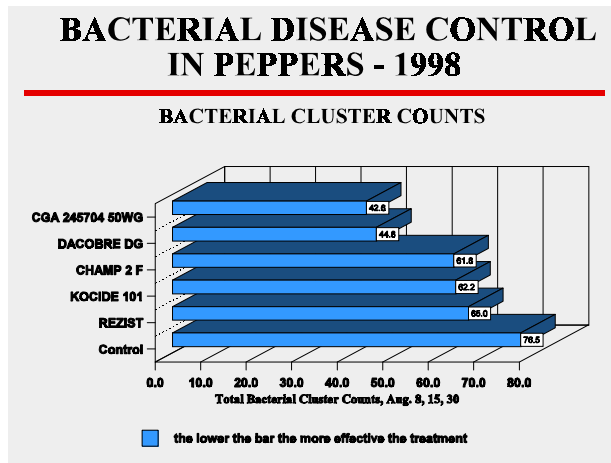
1. To determine the relative resistance levels in commercial pepper varieties grown in Ontario to Bacterial spot.

The range of resistance to Bacterial spot in peppers is identified in the listing and results of this test. SUMMER SWEET 830, PS 334094 X3R, SUMMER SWEET 890, BOYNTON BELL, CAMELOT X3R, ALADDIN X3R and SUMMER SWEET 880 are all highly resistant to Bacterial spot while YORKTOWN, SUMMER SWEET 870, EX12262, WIZARD X3R and EXH 12222 are moderately resistant and KING ARTHUR is susceptible to the Bacterial spot organism evaluated in this trial. BOYNTON BELL and CAMELOT X3R are known to possess resistance to race 1, 2, 3 while KING ARTHUR has genes to resist race 2. Since BOYNTON BELL and CAMELOT X3R showed high levels of disease control in this test and KING ARTHUR showed very poorly it appears that the Bacterial spot race infecting these plots could have been either race 1 or 3.



2. Evaluate spray programs for the control of bacterial spot in processing peppers.

Reduction in the number of bacterial spot clusters observed on the foliage was achieved most effectively using DACOBRE DG. This product is a combination of chlorothalonil and copper. CGA 245704 50WG also significantly reduced the number of bacterial lesions providing a measure of control of bacterial spot in peppers. The addition of CROP BALANCE to CGA 245704 50WG did not enhance the control of CGA 245704 50WG. Copper when used alone as in KOCIDE 101, CHAMPION WP and ULTRA CHAMP was ineffective in controlling Bacterial spot in peppers. REZIST was also ineffective in controlling Bacterial spot in peppers. I have included a trial conducted in 1997 to support the observations using DACOBRE DG along with including the single evaluation conducted with ALIETTE. ALIETTE did not perform as well as KOCIDE. in this trial.



3. Control of European corn borer in peppers.

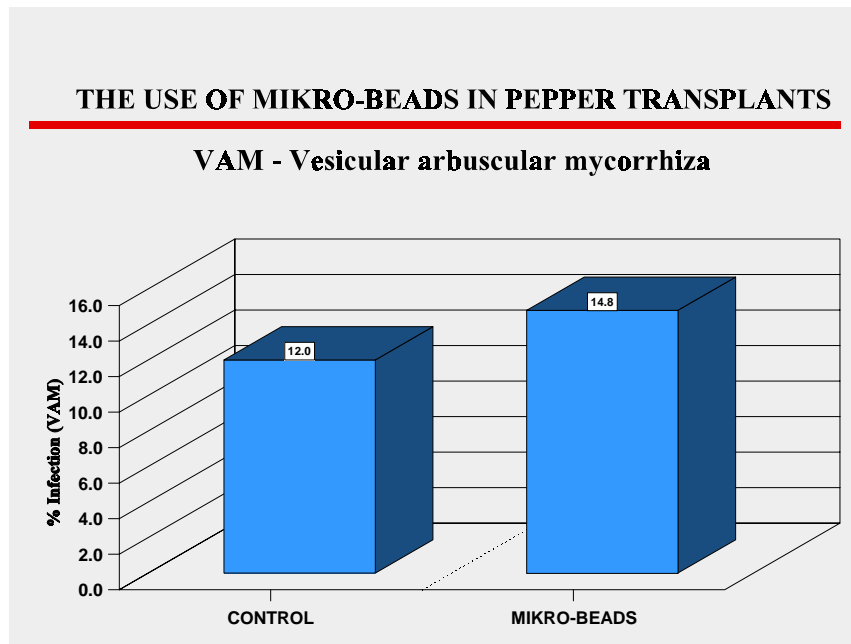
A trial was conducted to help support the Minor Crop registration of RH-5992 240F for the control of European Corn Borers in peppers. Significant insect infestations took place even with the commercial standard treatment, DECIS 5EC. It was suggested that even though control was expected, as 5 applications were applied through July and early August, the insect populations causing all the damage came after the last spray late in August.

4. Evaluate techniques to improve both the germination, establishment and growth of seedling pepper transplants.

Dr. Vince Machado and I have conducted several seed treatment trials using the growth regulator Paclobutrazol to enhance tomato seedlings. A similar approach was applied to pepper seedlings. Results of the initial seed treatment showed severe loss in germination and seedling emergence. The level of damage to seedlings was too severe to be considered useful to the industry. Thoughts of applying this material as a foliar spray after the seeds had germinated and emerged

was considered but not yet tried. We did however apply Paclobutrazol as a post-emergence spray to tomato seedlings with great success.

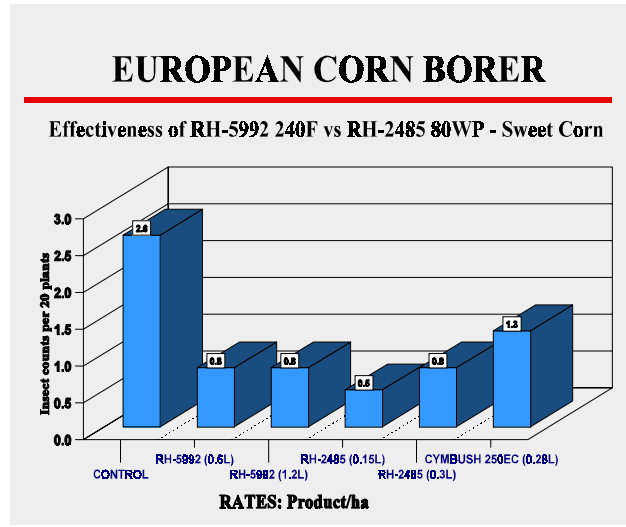
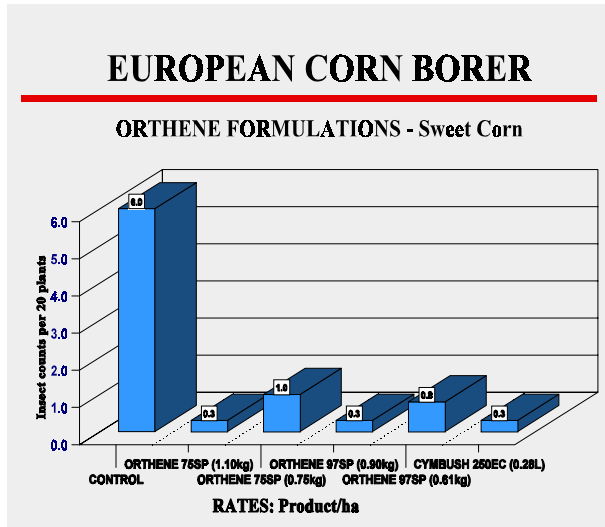
A trial was conducted to determine the usefulness of VAM (vesicular arbuscular mycorrhiza) to improve the seedling vigour and establishment of peppers. The addition of vesicular arbuscular mycorrhiza in the form of Mikro-Beads to pepper transplant plugs did not increase the vigour or yield of peppers. Apparently the level of these organisms are relatively high in the soils of the test location where even the uninoculated controls had 12% infection compared to 14.8% infection when additional inoculum was introduced



B. SWEET CORN

1. Conduct chemical control and timing trials for the control of European corn borers in processing sweet corn.

Formulations of ORTHENE, 75SP and 97WP effectively controlled European corn borers along with the standard insecticide CYMBUSH 250EC. Bridging data between the two ORTHENE formulations indicated equal control of this pest in sweet corn. Several other corn borer control trials were conducted attempting to determine the most effective products that could be used in an organic sweet corn scenario. Unfortunately the insect populations at the Huron Research Station near Centralia and trials near Strathroy in cooperation with Strathroy Foods were too low to show efficacy results. Products included RH-5992 240F, which proved effective under low insect pressures and DIPEL with and without several surfactants and an insect attractant.



C. COLE CROPS

1.To conduct chemical control and timing trials for the control of cole crop insect pests.

The insecticides ORTHENE and CYMBUSH 250EC effectively controlled a severe infestation of Imported cabbageworms and Diamondback Moths. The pressure from Imported cabbageworms was higher than Diamondback Moth in a proportion of 80:20 respectively. Bridging data between formulations of ORTHENE 75SP vs 97WP showed equal effectiveness at the rates tested. A rate response was not observed as even the low rate of both formulations showed effective and equivalent control of cabbage foliar insects.

The insecticide RH-5992 240F with or without any additional surfactant materials significantly controlled foliar insect pests attacking cabbage.

