

**Progress Report to the Agricultural Research Foundation
Oregon Vegetable Commission**

Title: Cabbage Maggot Control

Principal Investigators: Glenn Fisher and Rene' Horton
Department of Entomology
Oregon State University

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Objective: Determine product efficacy for control of cabbage maggot and to develop a degree day model for predictive purposes.

Progress:

Cabbage maggot control remains a challenge largely because of an incomplete understanding of its life history and natural controls in the Willamette Valley.

Registered insecticides are largely ineffective in commercial settings, even though in small scale replicated field trials, chlorpyrifos often still performs effectively compared to other materials.

New insecticides with likelihood of market development in crucifers were evaluated this past year. Lorsban gave best reduction of maggot injury, although a greater degree of control is desired. Other materials offer some suppression and will be further evaluated next season in different use patterns.

Temperature monitoring units for degree day development of cabbage maggot have been purchased and will be placed in the field January 1st to determine cabbage maggot development with thermal accumulations.

Related broccoli research is reported here as well.

Spinosad for Lepidopterous pests in Broccoli

DowElanco's new product spinosad is so unusual that a new classification was made for it: naturalyte. This product is grower friendly, non-volatile and kills on contact or ingestion according to DowElanco. Spinosad attacks the nervous system of lepidopterous insects and seems to have little or no effect on beneficials.

Four different concentrations of Spinosad (20g, 40g, 61g, 80g ai/acre) were compared to Lorsban (454g ai/acre) and an untreated check. Two applications were made on the 19th and 30th of August. Data was collected on the 27th of August and the 3rd of September. Twenty plants per treatment were inspected for lepidopterous larvae at seven days after first treatment and then at the conclusion of the experiment.

At seven days with a single spray Spinosad had controlled 88% of the lepidopterous larvae in the 20g and 98% in the 40, 61, 80g treatments. Lorsban had 98%

control. At the end of the trial, Spinosad had at least 95% control and Lorsban had 90%. The complex of lepidopterous pests controlled in this experimental plot were typical of those occurring on broccoli in any given year. Sprays were delayed relative to commercial applications to evaluate rates against populations skewed to small and medium size larvae. Even mature larvae were controlled well by Spinosad.

Cabbage Maggot Control

The Hobo temperature sensing units will be placed on the 1st of January and temperatures will be taken at intervals through out the day every day through fly emergence, egg laying, and development. Temperature data will be used to determine degree day requirements for fly development.

Lorsban, Mocap, Fipronil, Suscon and Neemex were evaluated for cabbage maggot control in broccoli. Gem variety broccoli was belt planted in rows with 30 in. centers on the June 4-5th, 1996. Four replications of the eight treatments were made. Granular forms of insecticides were applied on the 5th of June and spray forms were applied on the 12th of June. Cabbage maggot damage was determined by counting the number of strikes (tunnels) caused by the maggot in the roots.

Lorsban provided good control in this research trial (95%). The other products tested did not afford satisfactory control in the context of this experiment (0-68%). A significance level of 0.06 shows the influence of Lorsban's effectiveness in this experiment. Mocap showed a significant reduction in stand count for this experiment. Suscon, the low rate of Mocap, Neemex and the untreated check had the largest amount of flea beetle damage. It is suggested that fipronil & "neem" + soil penetrants be further evaluated.