

Progress Report for 2005

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Cranberry Weed, Insect and Disease Management for Washington Using Low-risk Alternative Pesticides

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I. Objectives: Evaluate new lower-risk alternative herbicides, insecticides and fungicides for control of cranberry weeds, insects, and disease, respectively, in the Pacific Northwest.

II. Summary of Accomplishments:

Evaluate alternative herbicides for control of perennial broadleaf weeds in cranberries:

A section 18 was obtained for Oregon and Washington for the use of Callisto on cranberry beds in 2005. Growers have been very pleased with the results. In 2005 we focused on how to improve the efficacy of Callisto and to obtain the additional data that EPA wanted in order to secure future Section 18's. Good control of silverleaf was obtained with combinations of multiple applications of 2,4-D in the spring and Callisto in the summer. Combinations of 2,4-D and Callisto, and Classic and Callisto, or Matrix and Callisto were more effective than either product alone or show promise for the more recalcitrant weed species. Replicated experiments were also conducted using numerous herbicides for perennial weed control, including Classic, Callisto, Hussar, Accent, Envoke, Osprey, Matrix, Upbeet, and Raptor. Matrix and Raptor appeared to be the most promising for providing weed control, although Raptor resulted in significant crop damage at some timings. Matrix was the only herbicide that provided control of yellow loosestrife. Weed control research in 2006 will focus on the use of Matrix and Callisto.

In 2004 and 2005 numerous replicated trials using diluted vinegar (3 to 5% acetic acid) as a soil drench at rates of 3000 to 8000 gpa just prior to budbreak (mid to late April) to control of false lily-of-the-valley (*Maianthemum dilatatum*) were conducted. Efficacy and crop damage have not been consistent and were highly dependent on soil moisture and stage of plant development. Nevertheless, acetic acid was a viable mean to control *Maianthemum*.

Evaluate alternative fungicides for control of fruit rots and keeping quality of fresh cranberries:

In 2004 research on the use of new fungicides for keeping quality was analyzed and determined unacceptably confounded by grower over-spray. In 2005 our research pathologist retired and the research venue was simplified. Six replicated field studies were conducted on growers' farms to compare early bloom fungicide (chlorothalonil and azoxystrobin) application with traditional fungicide application timings (fruit set). Fruit rot and keeping quality data are currently being collected. To date, significant reduction in fruit rot at harvest was obtained at one site for early fungicide applications.

Evaluate biorational insecticides for control of cranberry girdler. Numerous research plots on cranberry girdler control with clothianidin were established in 2004. Emergence data in 2005 were too variable to be meaningful. A study evaluating time of insecticide application on the efficacy of fall fruit control was conducted for the third year in a row.

Variation in insecticide timing had only subtle effects effect on compared to the standard grower treatment. Replicated studies on winter and summer applications of clothianidin or imidacloprid for black vine weevil control were conducted. Both products provided control, but only at the 60 to 80% level, not adequate enough to eliminate weevil damage. Earlier applications (December) had slighter better efficacy than March applications. Advant was evaluated for blackheaded fireworm control. Advant provided control of fireworm, but study conditions were not adequate to make comparisons with currently registered insecticides.