Implementation Programs

Wenatchee Valley Pear IPM Project (WVPP)—Year 1

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Pest control costs for Wenatchee Valley pear growers have increased greatly in recent years, with most growers now spending $500-600 or more per acre for pesticides. Growers must also contend with new and increasing regulations that limit the availability and use of many pesticides, particularly broad spectrum ones. The Wenatchee Valley Pear IPM Project (WVPP) seeks to develop pest management programs for Wenatchee Valley pears that reduce the use of broad spectrum insecticides and conserve natural enemies, resulting in pest control that is both as effective and more economical than current programs. Biological control of key pear pests, particularly pear psylla, grape mealybug and spider mites, is used little in most area orchards, as natural enemies are reduced or eliminated by several commonly used insecticides. Effective biological control has been demonstrated on a limited scale in pear orchards in other western US regions and is extensively used in commercial pear production in British Columbia. It has been uncommon in northcentral Washington pear due to high pest populations, low natural enemy numbers and the risk of serious fruit and tree damage.

The first year of a three-year project was 1999. Fifteen growers participated, providing 141 acres in a variety of locations from Wenatchee to Leavenworth. Thirteen consultants, representing six fruit packers and two agrochemical distributors, were involved. Each pear block was monitored weekly from March (prior to first spray) until just prior to harvest, and then again for one postharvest sample. The intensive sampling used many techniques, varying as appropriate with the stages of pest and crop development, and closely followed the methods described in the recently published "Orchard Pest Monitoring Guide for Pears." Sample data were provided the same day to the grower and the consultant(s) associated with his block. Weekly lunch meetings were held with project consultants to discuss pest and natural enemy developments and control options. In addition, a monthly newsletter was distributed and three educational field meetings were held.

The growers and consultants made all pest control decisions and provided records of pesticide applications. Most growers used codling moth mating disruption, and very few sprays were made for control of this pest. Growers differed most in the approach to post-bloom control of pear psylla and mealybug; six blocks were treated with AgriMek and Provado ("hard"), while ten were not ("soft"), instead using oil, Surround and/or soap for control.
Observations
1. Psylla populations post-bloom were higher in most soft blocks, and the soft blocks had, on average, more fruit marking from psylla. Postharvest psylla populations were similar in the two programs.
2. Natural enemy populations were far higher in the soft blocks. Consistently higher numbers of Deraeocoris, campylomma and earwigs, and a greater diversity of natural enemy types were found in the soft blocks. Natural enemy populations increased greatly in August, with the highest numbers found in most soft blocks postharvest.
3. Pesticide costs were lower on average in the soft programs than the hard ones ($443 vs. $617). More spray applications were made to soft blocks (10.2 vs. 6.3).

Concerns
1. Will the high numbers of natural enemies found in most soft blocks carry over to provide improved biological control of pear pests in 2000?
2. Can most, if not all, pear blocks transition to a more biologically based pest control program without suffering unacceptable fruit damage in the process?
3. Can control of grape mealybug be achieved in most blocks without the use of disruptive broad-spectrum insecticides?
4. What risk is there from secondary pests that may emerge with the reduced use or elimination of broad-spectrum insecticides? These pests include pear rust mite, leafrollers, lesser appleworm, fruitworms and sawflies.