

III. Stone fruits

b. Thresholds, monitoring and sampling

1. peach twig borer, prunes and plums

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In order to test the degree day model for timing of peach twig borer sprays, four commercial blocks of prune and plum were chosen. These were:

- 1) Strickland Orchard, Grandview: mostly mature plum trees, not adequately fertilized therefore having very little seasonal shoot growth this year. Last year this orchard showed no Twig Borer damage although no sprays were applied specifically for the pest.
- 2) Howell Orchard, Prosser: rows of young, actively-growing plum trees intermixed with rows of mature trees showing less new growth. Serious PTB problem in 1988.
- 3) Bryson Orchard, Prosser: two separate blocks(north and south) of young, vigorous prune and plum trees. Serious PTB problem in 1988.

All three Prosser blocks border each other, with the southernmost Bryson block located close to untreated residential stone fruit trees. These orchards have suffered considerable PTB damage in past years.

Pheromone traps were hung in the orchards in mid-April, checked weekly and caps replaced every two weeks. With the catch of a single moth, biofix was set at 4/26. Peak moth flight occurred in Prosser between 5/17-24 (150-200 degree days) and on 6/14 in Grandview (394 degree days). Counts declined steadily to zero thereafter. From 200 degree days, just prior to predicted egg hatch, twigs were inspected weekly for flagging.

Phenological predictions were made using the WSU Cooperative Extension "Pest" model. Weather data obtained from the Washington Public Agricultural Weather System(PAWS) Roza station located at the Irrigated Agriculture Research And Extension Center at Prosser. The station is located about three miles north of the Prosser orchards and at a slightly higher elevation.

Spray for first generation peach twig borer is recommended at 400-500 degree days, according to UC guidelines. This interval occurred between 6/14-21. Parathion was applied to the Bryson orchards on 6/13 (380 degree days), and in the Howell orchard 6/17 (440 degree days). No treatment was made in the Strickland orchard. No first generation flagging was noted in any of the blocks. Peak average weekly moth catch was: Howell-24, Bryson(north)-4, Bryson(south)-75, and Strickland-112.

Flight of the second generation PTB began on 7/11 and peaked about 7/16-17. The Bryson orchard was treated with Parathion on 7/25 (485 degree days into the second generation). Thiodan was applied to most of the Howell orchard on 7/15 (240 degree days), with 12 trees left untreated in the middle of the block. Again, the Strickland orchard was not treated.

During weekly inspections in the period between second cover and harvest, no flags were seen. Two PTB entries were found on 8/9 and 8/16. Both of these were in the Bryson North block between traps #4 and 6. A worker mentioned having seen several entries in the same block, but by the description given, these are believed to have been codling moth.

Friar plums were picked at Brysons on 8/12-22 and at Howells on 8/14-17. At this time fruits were examined more thoroughly for entries. None were seen at either Bryson block. In the Howell plums which received no second cover, none of the 75 fruits examined were damaged, while 1 of 100 twice-sprayed plums had a PTB. No fruit entries were found in the Strickland orchard in pre-harvest evaluations.