WALNUT HUSK FLY MANAGEMENT

Helmut Riedl, R. G. Hislop, V. A. Brown and Johannes Joos

Monitoring of adult flies: Evaluations of spherical and rectangular traps of different colors revealed strong attraction of adult husk flies to green when combined with a spherical trap shape, and yellow when combined with a rectangular shape. Further experiments will be conducted with green paints which mimic more closely the reflectance curve of walnut foliage. In several season-long field tests with green spherical traps, standard fluorescent-yellow AM rectangles (Zoecon Co., Palo Alto, CA) and AM rectangles baited with dry ammonium carbonate the latter were the most sensitive indicators of low husk fly populations. However, spherical traps were generally better indicators for the onset and time course of oviposition. Additional experiments are planned to determine the value of spherical traps for improved spray timing.

Monitoring of stings: A sequential sampling program was developed which can be used to efficiently survey a walnut orchard for the number of stings and determine whether husk fly attack has exceeded a set injury level. This sampling program in conjunction with trapping of adult flies will provide more reliable information for the timing of control measures than monitoring of adult flies alone.

Varietal susceptibility: Experiments in 1980 followed a similar design as in the previous year. Laboratory-emerged flies were caged with developing nuts on the tree from the middle of June until hull split. The Ashley variety was consistently preferred by ovipositing females over the Hartley and Franquette variety. Choice tests with these three varieties in the laboratory suggested a similar preference pattern. Prior to July 1 larval mortality in all three varieties was 100%. Larval survival and duration of larval development in the nut varied considerably between varieties.

Control-Mass trapping: Two large mass trapping experiments using fluorescent-yellow sticky rectangles baited with ammonium carbonate were set up in orchards located in Solano Co. Each experiment consisted of three different trap densities and a check. In spite of large fly populations and high catches in both orchards, neither experiment yielded conclusive results since no damage developed in the checks and the treatments.

Chemical Control: Field trials were performed in a mature walnut orchard to evaluate baited treatments of the synthetic pyrethroid Pounce 3.2 EC at reduced coverage on walnut husk fly control and influence on other pest and non-target species. The combination of Pounce 3.2 EC at 0.4 lb ai/acre and Staley's bait No. 7 applied to 1/4 or 1/2 of the tree canopy provided better control than a full-canopy treatment without bait. Walnut aphid was also controlled by this material, but spider mite build-up occurred on treated foliage.