

Invasive Species

Control of Spotted Wing Drosophila in Cherry - Post-Harvest Applications

Robert Van Steenwyk, Lauren Novotny, Caroline Wise, Anthony Miller

Department of Environmental Science, Policy and Management, University of California, Berkeley, CA

Keywords: Assail, acetamiprid, HGW86, cyantraniliprole, Altacor, chlorantraniliprole, Delegate, spinetoram, Entrust, spinosad, Admire Pro, imidacloprid, Belay, clothianidin, Actara, thiamethoxam, Leverage, Perm-UP, permethrin, Baythroid, beta-cyfluthrin, Warrior, lambda-cyhalothrin, Mustang, zeta-cypermethrin, Bexar, tolfenpyrad, Diazinon, Malathion, Sevin, carbaryl, Nu-Lure, spotted wing drosophila, *Drosophila suzukii*, chemical control, insecticide, cherry

Abstract: Trials were conducted to evaluate a large number of registered and unregistered insecticides for control of spotted wing drosophila (SWD) in cherry. Since it was not possible to evaluate all materials in a single trial, a series of trials were conducted with the same experimental design. All treatments were replicated six times in a randomized, complete block design. Each replicate consisted of an individual tree. There was a minimum of one untreated buffer tree between each replicate. Experimental treatments were applied with a hand-held orchard sprayer. All materials were applied at the highest field rate unless noted. The mortality data was then transformed using Abbott's formula. Mortality at 1 DAT indicates that the OPs (diazinon and malathion) were the most effective, followed by the pyrethroids (Baythroid, Warrior, Mustang and Perm-Up) with Mustang and Perm-Up overlapping with Sevin, HGW86 applied at three rates, Delegate and Entrust. The neonicotinoid insecticides (Actara, Leverage, Belay, Assail and Admire Pro) along with Bexar provided little adult mortality. Mortality at 7 DAT was much lower than at 1 DAT and the pyrethroids (Baythroid and Warrior) were the most toxic materials followed by Delegate, Malathion, Mustang and Diazinon. The OPs were far less effective at 5 DAT compared to 1 DAT. Again the neonicotinoid insecticides provided little control.