

Invasive Species

Control of Spotted Wing *Drosophila* in Cherry

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Abstract: Field trials were conducted to evaluate the potential insecticides for control of spotted wing drosophila (SWD) in cherry. Insecticide treatments were replicated four times in a randomized, complete block design. Each replicate consisted of an individual tree. There was at least one untreated buffer tree between each replicate. Treatments were applied with a hand-held orchard sprayer operating at 250 PSI with a finished spray volume of 200 gallons per acre. The treatments were the maximum field rate of Delegate, Entrust, Danitol, Baythroid, Pounce, Mustang, Warrior, Provado, Actara, Assail, Malathion, Diazinon, Sevin and an untreated check. In addition, low field rate of Delegate, Entrust, Diazinon and Malathion were evaluated with and without NuLure. Treated foliage was transported to the laboratory at one, three, and seven days after treatment (DAT) and exposed to 10 adult laboratory reared male and female SWD. Pyrethroid insecticide treated foliage was also examined at 14 DAT. Male mortality was always higher than female mortality. Organophosphates (OP) caused higher mortality at one DAT than spinosyns but OP mortality decreased to near zero at seven DAT. Spinosyns caused moderate mortality at one DAT but mortality decreased to near zero at seven DAT. Pyrethroids caused mortality similar to spinosyns but provided moderate mortality to 14 DAT. Neonicotinoids and Sevin provided adult mortality at or below the level of Entrust. The addition of NuLure to OP and spinosyns had inconsistent results. However, the addition of NuLure to Malathion provided significant increased mortality at one DAT.