

Invasive Species

**Pre-Harvest Control of Spotted Wing Drosophila in Cherry**

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*Keywords:* Assail<sup>®</sup> 70WP, acetamiprid, Admire<sup>®</sup> Pro, imidacloprid, Belay<sup>®</sup> 2.13SC, clothianidin, Movento<sup>®</sup> 2SC, spirotetramat, HGW86 10SE, cyantraniliprole, Bexar 1.25SC, tolfenpyrad, Perm-Up<sup>®</sup> 3.2EC, permethrin, Baythroid<sup>®</sup> XL,  $\beta$ -cyfluthrin, Leverage<sup>®</sup> 360, Dyne-Amic<sup>®</sup>, spotted wing drosophila, *Drosophila suzukii*, cherry, chemical control, insecticide

*Abstract:* Spotted wing drosophila (SWD) has become a major pest of cherry since its appearance in California in 2008. It lays its eggs not only in ripening fruit, but other substrates suitable for drosophila development. As eliminating drosophila populations is unfeasible, control will emphasize reducing the number of eggs laid in ripening fruit. A field trial was conducted to assess the efficacy of various insecticides in reducing damage from larval infestation. Using a hand-held orchard sprayer treatments were applied on 27 May in a mixed fruit orchard pre-harvest. There were 10 treatments (including an untreated check) replicated six times in a RCB with each replicate consisting of a single tree. Treatment efficacy was assessed by collecting 100 fruit from each replicate on 24 May, 2 June and 9 June. Larval infestation was determined using brown sugar flotation method. At two weeks after treatment, approximately one SWD life cycle, there was significant difference between treatments in the number of larvae per 100 fruit between treatments. HGW86 10SE, Movento<sup>®</sup> 2SC, Leverage<sup>®</sup> 360, Perm-Up<sup>®</sup> 3.2EC and Baythroid<sup>®</sup> XL provided significantly more control of SWD larvae as compared to Bexar 1.25SC and the untreated check, reducing counts by half or more. Bexar 1.25SC, Assail<sup>®</sup> 70WP and Belay<sup>®</sup> 2.13SC treatments did not differ significantly from the untreated check.