Managing internal feeding fruit pests of cherry
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Entomology

There are two primary internal feeding insects that infest cherry fruit, plum curculio and cherry fruit fly (including eastern cherry fruit fly and black cherry fruit fly). The plum curculio (PC) is active earlier in the season than the cherry fruit fly (CFF), but there is often significant overlap in mid- to late June where both pests are a threat to the cherry crop. The PC overwinters as an adult and can be present in orchards as early as bloom time, but usually will not begin laying eggs into fruit until shuck-split or shuck-off period. The CFF emerges as an adult from the soil around mid-June. Females will begin seeking ripening fruit to lay eggs into 7 to 10 days later; this oviposition activity lasting through cherry harvest and after.

PC control options include insecticides in the organophosphate (OP) class, synthetic pyrethroids and more recently the neonicotinoids. One or more sprays are generally applied beginning at shuck fall, or earlier if PC adults are detected in the orchard or densities are suspected to be high. From second cover to a few weeks before harvest is a critical time for PC control. At this time, adults are continuing to lay eggs and the hatching larvae will be present in fruit at harvest. The OP’s, like Guthion and Imidan, have generally been the standard for control because of their strong contact activity on PC and long stable residues. The synthetic pyrethroids, like Asana and Warrior, also have the strength of being contact poisons and are very fast acting, but their residual activity is generally shorter than the OPs.

The newest control option on the market is the neonicotinoid, Actara, which has performed very well in field efficacy trials at the MSU Trevor Nichols Research Complex and Northwest Michigan Horticultural Research Station. This compound is unique in that it is lethal to PC as a nerve poison when initially applied, but then as a translaminar (i.e., locally systemic) material provides long lasting fruit protection. Organic cherry growers may want to consider use of Surround WP (kaolin). Field trials have shown it to provide measurable fruit protection when used on large blocks when coverage is maintained.
Cherry fruit fly control options include insecticides in the organophosphate (OP) class, synthetic pyrethroids, and more recently the neonicotinoids, Fruit Fly Bait and Particle Film. The OP’s, like Guthion and Imidan, have been the standard for control because of their contact activity on CFF and long stable residues. The synthetic pyrethroids, like Asana and Warrior, also have contact poisons activity on CFF adults, but generally provide only moderate control because of short residual activity.
Two new control options on the market are the neonicotinoids Provado and Actara, which have performed well in field efficacy trials. Provado has a 7-day pre-harvest interval, while the PHI for Actara is 14 days. Thus, Provado provides a good option for CFF control at that critical window of a week or so before harvest. Additionally, it is registered for use in both sweets and tarts. Since Actara is also active on PC, economical options for using this material would be a single application at 4.5 to 5.5 ounces/acre at second cover or a few weeks before harvest when control of both pests is often needed. Organic cherry growers may want to consider use of GF120 Fruit Fly Bait, Entrust (organic formulation of SpinTor) or Surround WP (kaolin).
GF120 Fruit Fly Bait has been shown to provide effective control on various fruit fly species, but requires precise timing (CFF pre-oviposition period) and specialized application equipment. Entrust has shown to be active on fruit fly species but starting sprays during the pre-oviposition period on a 7-day interval is important for good performance. Field trials with Surround WP have shown good fruit protection from CFF when used on large blocks when coverage is maintained.