

Monitoring for Spotted-wing drosophila, an invasive pest in small fruits and berries

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Spotted-wing drosophila, *Drosophila suzukii*, is an exotic invasive species first identified in N. America in 2008 in California and has now spread to most Canadian provinces. Female flies lays eggs in a wide range of ripening soft-skinned fruit resulting in significant losses in crop yield and quality.

Current monitoring methods using apple cider vinegar-baited traps are ineffective for early detection (low population densities) of *D. suzukii* and attract large numbers of non-pest insects. We are investigating alternative attractant lures and traps to improve monitoring efforts in at-risk fruit crops.

We are taking a 2-pronged approach to this problem. First, we are investigating a combination of pheromones, fruit odours, and yeast-associated odours to identify odorant blends to improve attraction efficacy and selectivity. And second, we are also investigating the role of colour and contrast for locating host-fruits. Identifying visual cues used by *D. suzukii* may help to further improve trap efficacy.



After 3 years of laboratory trials and field-testing, we have developed a 3-component attractant for use in our traps. We have also identified a 2-colour combination attractive to *D. suzukii*. We are now testing other aspects of the trap design to optimize *D. suzukii* captures while also minimizing captures of non-pest species.

The following methods will be used to assess monitoring trap efficacy on *D. suzukii*:



Monitoring trap designs will be assessed through the use of a choice experiment in an enclosed cage under controlled conditions. We will vary the size of entrance holes, use of exclusion mesh, and type of drowning solution for each trap. Final trap designs will be field-tested in blueberry and raspberry crops in the Annapolis Valley.

