

Why monitor for SWD larvae in fruit?

- To assure yourself and buyers of fruit quality
- To know if your control practices are effective

The following methods are used in tart cherry research at the Northwest Michigan Horticultural Research Center

Methods

- Detecting SWD with naked eye is possible for some fruits
 - A trained eye can detect fairly easily
 - Look for oviposition scars, signs of early softening, decay and leaky fruit
 - Can detect eggs with the help of a 10x hand lens because of distinctive breathing tubes

Leaky Fruit – when fruit is gently squeezed juice will emerge out of oviposition scars.



Methods

- Detecting larvae with salt or brown sugar method
 - Requires some simple materials and equipment
 - At NWMHRC, we prefer the brown sugar method because the larvae do not die right away and wiggle around and also you can see their white bodies against the brown liquid

Blueberries – by eye



Photo: T. Martinson

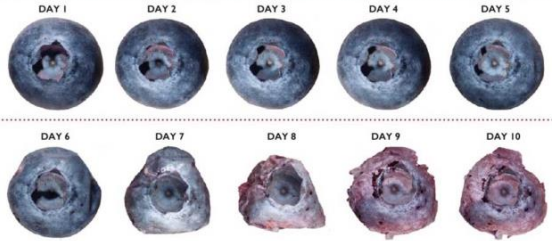
Blueberries

Oviposition scars – where an SWD female has cut into the fruit.



Blueberries

Infected blueberry

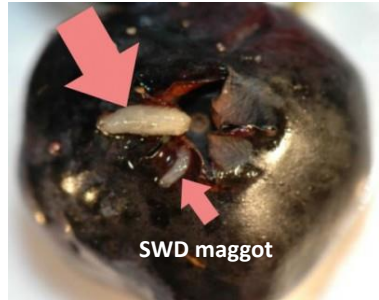


Blueberries



Blueberries

Blueberry maggot



Raspberries – by eye



raspberries



raspberries



raspberries



raspberries



raspberries



strawberries



strawberries



Brown Sugar Method

- Collect fruit for testing
- Dissolve 1.4 lbs of brown sugar in 1 gallon of warm water
 - Warm water reduces the time for larvae to exit fruit
- Lightly squeeze each fruit, taking care not to break too much skin
 - Internal flesh can be mistaken for larvae
- Place fruit in shallow pan and cover with sugar solution
- Allow to sit for 10-15 minutes

Tart cherries soaking in brown sugar solution.



Larvae exiting tart cherries

At this point, you can count the # of visible larvae. However, first and second instar larvae are very small and will need to be counted with a hand lens or microscope.



Brown Sugar Method

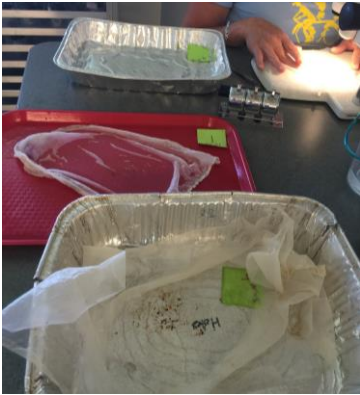
- After 10-15 minutes, strain liquid from fruit and catch liquid



Brown Sugar Method

- Filter liquid through a fine mesh fabric to catch very small larvae





Filtered contents
on fine mesh
fabric.

Brown Sugar Method

- Observe contents with hand lens or microscope
 - Good lighting is helpful
- If a quantitative sample is necessary, count quickly while larvae are still moving

