

USING PHEROMONE TRAPS TO MONITOR TREE FRUIT PESTS

By Janet Caprile, Farm Advisor

Pheromone traps are useful for monitoring the activity of Codling Moth (CM), Peach Twig Borer (PTB) and Oriental Fruit Moth (OFM) in orchards. Their primary purpose is to let us know when each generation begins so we can more accurately time treatments. They can also give us an indication of the approximate size of the population in the orchard. This information, combined with monitoring of trees and fruit, will help us determine if treatment is needed.

You should be able to obtain pheromone traps from any agricultural pest management supplier such as Mid Valley Ag, Western Farm Service, Wilbur-Ellis, Helena, etc.

Place traps in each orchard for which projections are to be made with at least 2 traps per orchard and 1 trap for every 10 acres for larger orchards. Don't place them closer than 300 feet or they may interfere with each other. Hang them on the north-east side of the tree at a height of 6-7 feet and at least 100 feet in from the edge of the orchard. If the orchard history indicates "hot spots", make sure you have a trap there. Traps should be placed in the same general location from year to year so that you can compare the information between years more accurately.

Place traps in the orchard before the moths begin to fly in spring (see chart below) so that the biofix can be accurately determined.

PEST	INSTALL TRAPS BY
Codling Moth	March 15
Peach Twig Borer	March 22
Oriental Fruit Moth	February 15 (1 st flight) or April 20 (2 nd flight)

The **BIOFIX** is simply the beginning of the flight for each new generation. We use the biofix to begin degree day (DD) calculations for each generation so we know when egg laying, hatchout, peak flight, and other lifecycle events are likely to occur. This lets us time our treatments most

effectively. In spring, the biofix is the first date that moths are consistently found in traps. For CM, the sunset temperatures also need to be at least 62°F. For later generations, the biofix is signaled by an increase in trap catches around the time the new generation is expected.

Check traps at least twice a week until the biofix is established. After biofix you can check once a week until it is time to establish the next biofix. Count and record the number of moths caught for that period and record this along with the date on a record sheet or the trap bottom. Remove the moths and stir the stickem on the trap bottom to keep it sticky. Change the bottoms monthly or more frequently if they get too dirty to catch insects.

Replace the pheromone lures according to the manufacturer's recommendations – this is usually 4 weeks for the red rubber lures and 8 weeks for most other types. Open the lure packets to let them air out at room temperature for a day or two before putting them out. This assures that you don't get an artificial increase in trap activity that may not be reflective of populations. Prior to use, lures should be stored in the freezer or refrigerator to maintain potency.

DEGREE DAYS (DD) are used in conjunction with pheromone traps to predict insect development and treatment timing. Insects develop faster or slower depending on the temperature. Degree days are a measure based on the maximum and minimum temperatures for each day which allow us to figure out how fast the insects are developing.

If you collect daily maximum and minimum temperatures for your orchard you can look up degree days from a chart. If you have access to the internet, you can get the Brentwood weather data and do a DD calculation from the UC IPM website at www.ipm.ucdavis.edu. This website also allows you to calculate the projected DD based on historical weather data so you can make projections for your treatment window.