March 17, 2009
Vol. XI, No. 1

IN THIS ISSUE

2009 Olive Day

Olive Fly Trapping Program

Effect of Environment on Olive Fly Populations

Bill Krueger Farm Advisor

UCCE Sacramento Valley Olive Day
April 7, 2009

Arts and Crafts Building - Glenn County Fairgrounds

Co-Sponsored by Musco Family Olives, Bell-Carter Olives and UCCE, Glenn, Tehama and Butte Counties

7:30 a.m. Registration

8:00 Ag. Commissioner Update
Jean Miller, Glenn County Ag. Commissioner's Office

8:25 Update on Olive Insect Pests Including Olive Fly
Marshall Johnson, UC Entomologist, Kearney Ag. Center

8:55 Pest Control Districts and Local Olive Fly Trapping Results
Bill Krueger, UCCE Glenn County
Ed Romano, Glenn County Pest Management District Representative, Tehama County Pest Management District

9:15 California Olive Committee Activities
Christi Darling, COC Manager

9:40 Break

10:00 Mechanical Harvest Update
Louise Ferguson, UC Olive Specialist

10:30 Table Olive Production Costs
Karen Klonsky, UC Department of Ag. Economics

11:00 Irrigation of Olives, What Can be Done if Water is Short?
Joe Connell, UCCE Butte County

11:30 Steps for Controlling Alternate Bearing
Bill Krueger, UCCE Glenn County

12:00 Lunch
Courtesy of Musco Family Olives and Bell-Carter Olives

Continuing education credit has been applied for and will be granted if approved.
Olive Fly Trapping Results for Glenn and Tehama Counties for 2008

Trapping to monitor Olive Fly populations in individual orchards is recommended. This will allow growers and PCAs to follow trends in their orchards and help evaluate spray program efficacy. Having an idea of area-wide population trends will help growers and PCAs interpret results from their orchards. As part of a project funded by the California Olive Committee, we have been monitoring OLF population in Glenn and Tehama Counties since 2006. The program and results from 2008 are described below.

Starting on April 4, 2008, plastic McPhail traps using Torula yeast dissolved in water as the bait were hung in olive trees. Earlier work in Glenn and Butte Counties has shown that these traps catch more flies than the commonly used yellow panel trap. Traps were placed in the same six locations as 2005 and 2006, three in Glenn County (Orland area) and three in Tehama County (Corning area). In response to a concern about the limited number of sites and to get more unsprayed sites, additional traps were placed in 4 unsprayed sites (2 in Glenn County and 2 in Tehama County). Flies were counted and the traps were serviced weekly. The results and field observations were posted on the Glenn County UC website (http://ceglenn.ucdavis.edu) and reported to the COC for further distribution. Trapping results were reported as male and female flies for individual traps and combined and averaged by site for a graphic presentation of the data (Fig. 1). Trapping and reporting continued through Nov. 14, 2008.

We began catching flies on April 4, 2008. Trap catches peaked between June 6 and June 13th. With the onset of high temperatures towards the middle of July, trap catches declined to 0 in all locations. Trap catches in all sites were 0 from August 1st until October 3rd. Seven of the ten sites caught no flies after July 11th. Trap catches in the 6 sites monitored since 2006 have continued to decline going from 1583 in 2006 to 801 in 2007 and 110 in 2008. In fact, only 444 flies were caught in 2008 at all ten sites and more than half of the catches came from one site that was added in 2008 that was unsprayed and suspected to be in a hot spot.

Lower trap catches in 2008 corresponded with lower levels of reported damage compared to 2007. It is interesting to note the steady decline in trap catches, but it is not completely understood. Generally trap catches did not rebound with the onset of cooler weather as they had in the previous two years. With the exception of a site in Orland which was responsible for more than half the total fly catches, only 2 flies were caught from July 11th on.

We will to continue the monitoring program in 2009. We are planning to use the same sites as 2008 to continue developing a historical perspective. We will begin posting the results by the end of March.

As more information becomes available on the effect of environment (temperature and food and water availability) on olive fly populations (see information below excerpted from and article by Marshall Johnson), it may better explain what is observed in the traps and allow us to use trapping information as part of the information used to determine when and if sprays are necessary.

Fig. 1. Olive Fly trap catches for 2008 in selected orchards in Glenn and Tehama Counties.
Effect of Environment on Olive Fly Populations

This information was excerpted from a larger article, Don't Be Fooled by the Olive Fruit Fly, by Marshall Johnson et.al., which appeared in the October 2008 issue of the CAPCA Advisor.

In the Central Valley, olive fruit fly trap counts typically decrease in July and August as summer temperatures rise. For most insects, smaller trap counts indicate a decrease in the size of the local insect population, however, this may not always be the case with olive fruit fly. Research conducted in Israel demonstrated the influence of temperatures on adult olive fruit fly. Below 62°F, adults were inactive and did not fly until the temperature surpassed about 74°F. Normal activity occurred within the range of 74 to 84°F. When temperatures rose above 84°F, females stopped laying eggs. Most activity stopped when temperatures surpassed 95°F, and the flies would seek out a moisture source. We have video-taped this last behavior as temperatures increased from 85 to 100°F with a temperature-controlled cabinet. Flies are usually inactive in the dark. This information suggests that during the spring period when temperatures are moderate (i.e., 65 – 85°F), adult olive fruit flies are active while the sun is shining, and inactive at night. However, in mid to late summer, it may be assumed that adult olive fruit fly activity is compressed to the time period from sunrise to mid-morning when temperatures increase to ca. 95°F. If this is true, monitoring trap catches in some regions may only be reflecting reduced fly activity and not high fly mortality (or fly dispersal from an orchard) as some may assume. Based on our laboratory data, we do know that single-day temperature highs (e.g., greater than 100°F) do not dramatically impact adult flies. However, several consecutive days of 100°F does increase adult mortality, and this becomes even greater (>95%) if the fly cannot obtain adequate water and food (e.g., honeydew). Those flies that can obtain plenty of food and water usually survive in high numbers unless temperatures reach 105°F and above. Access to honeydew produced by scale insects such as the black scale. Saissetia oleae, aid the olive fruit fly in surviving periods of high temperatures if water can also be found.

Many growers are aware that adult olive fruit fly numbers decrease during July and August. Some choose to halt weekly sprays of GF-120. Safely making this choice requires a thorough knowledge and understanding of several parameters including the trap catches of olive fruit fly in one’s orchard, the availability of water and honeydew (e.g., black scale) within and near the orchard, the presence of nearby untreated olive trees (i.e., abandoned olive orchards, ornamental olive trees), and the presence of non-host plants that may provide relief from the heat for the fly. Geographical location of olive orchards also influences temperatures in orchards. Those orchards in the San Joaquin Valley tend to have longer periods of consecutive days of high temperatures in July and August compared to the Sacramento Valley. Coastal areas tend to be cooler than the Central Valley. Growers need to be aware of unusually cool weather during July and August that will increase olive fruit fly activity. To help growers better understand historical temperature patterns within California, GIS maps are provided at the website “Interactive Climate Maps for Olive Fly Management Decisions” (http://arcims.gis.ucdac.edu/CIMIS/). Maps illustrating the frequency of high temperatures (greater than 100°F over a 3 day period) for each day in July through September are available along with access to the high temperatures for the most recent 5 days (based on CIMIS sites). To protect olive fruit from the olive fruit fly, growers must be aware of when temperatures drop in the latter part of August and flies become active again and a true threat to their olive crop.
Olive Day 2009 Program Enclosed

Please phone (865-1105) or e-mail (jesamons@ucdavis.edu) your reservation for the complimentary lunch before April 3 so that we may accommodate all guests.

Order UC Publications Online

You can help Cooperative Extension in Glenn County when you order publications online. Visit http://anrcatalog.ucdavis.edu and enter the promotion code PRGLN11 at check-out. You'll receive a 10% discount on your order, and a portion of the sales will benefit local programs.