OLIVE FLY (OLF) UPDATE 2005 FOR TABLE OLIVE INDUSTRY
OLF MANAGEMENT FAQ's / UNIVERSITY OF CALIFORNIA RECOMMENDATIONS

Determining Need to Treat for Olive Fly (OLF)

Will trapping OLF adults help determine the level of damage*?* No. Adult trap counts do not reliably correlate with fruit damage. Trapping adult OLF allows you to monitor fly activity and population trends in your own grove. More importantly, the efficacy of your sprays can be evaluated with the traps by comparing OLF counts before and after treatment.

Will I need to spray for OLF this year? Yes, OLF is present throughout the olive productions areas of the state. If you want assurance your fruit will be free from OLF injury, prophylactic applications of insecticide will be required. OLF has generally infested both rural and urban areas. During the last four years, spring populations of OLF in some locations have doubled each year over the preceding year. All olive blocks are now at risk if left untreated. Table olive processors will not risk OLF infested fruit in their products and cannot readily separate them during processing. Processors have essentially set a "zero tolerance" for OLF infested loads. You need to control OLF.

Trapping to Monitor Infestations

If I want to monitor, how do I do it*?* Use yellow-panel (YP) traps with both a pheromone lure and a feeding attractant such as ammonium bicarbonate or ammonium carbonate. Also, check the expiration date on the spiroketal pheromone lure to ensure attractancy. A more effective trap is the plastic McPhail trap baited with a liquid mixture of Torula yeast tablets and borax in water. To evaluate treatment efficacy, a minimum number of two traps per block (e.g., 5-10 aces) are recommended at this time. However, using more traps within a block should provide better detection of OLF presence. Based on experience over the last 4 years, it is recommended that Trece's Pherocon® AM/NB Traps with Supercharger food attractant or the plastic McPhail Traps be used.

Place traps in fruiting trees no later than March 1 (OLF tend to occupy fruiting trees more than fruitless trees) in at least the second tree row in from the grove's edge to avoid contamination with dust. Position traps in the shade (north side of tree) in an open area within the mid-canopy (avoid locations where leaves may block traps). Monitor traps weekly for OLF and record your catches. Males have rounded abdomens and females have pointed abdomens. AM Traps should be changed at intervals based on manufacturer or supplier recommendations, or more frequently if the trap's sticky surface becomes non-sticky due to non-target insects, dust, or other debris.

Obtaining Traps

OLF yellow-panel traps with pheromone and food lures are available from Trece Inc. in Adair, Oklahoma (Phone: 918-785-3061; website: www.trece.com), and Suterra LLC in Bend, Oregon (Phone: 866-326-6737; website: www.suterra.com/). McPhail Traps and Torula Yeast are available in California from: ISCA Technologies Inc., Riverside, CA (Phone: 909-686-5008; website: www.iscatech.com) and Better World Manufacturing Inc., Fresno, CA (Phone: 559-291-42276; e-mail: bettertrap@aol.com.

What will my trap counts mean? Numbers of trapped flies indicate flight trends over time and relative OLF population levels within the grove. This information is useful in evaluating the spray program's efficacy. The absence of flies on a trap does not always mean that there is no infestation in a grove. Rotate traps among trees to ensure flies are encountering traps. Make sure to change spiroketal pheromone lures every 4 months and feeding attractants every 2 weeks on yellow panel traps.

Treating OLF with GF-120

What materials can I use commercially*?* Currently, GF-120 NF Naturalyte Fruit Fly Bait (a formulated Spinosad bait produced by Dow AgroSciences LLC) is all that is available as a sprayable, insecticidal material. It currently has a Section 18 emergency registration so a permit will be required for its application to any property. As a Section 18 material, it must also be applied by a qualified applicator. It is also approved for organically grown olives.

How much GF-120 do I use? The GF-120 label allows between 10 and 20 fluid oz. of formulated product per acre per application, with applications being made no more frequently than every seven days. Based on prior experiences in California and Europe, an application rate of 14 fluid oz. per acre is being recommended for 2005.

Dilution

GF-120 can be diluted to 1:1.5 (1 part GF-120 to 1.5 parts water) up to 1:4 (1 part GF-120 to 4 parts water). NOTE: diluted solutions of GF-120 should be used IMMEDIATELY because microorganisms grow in them and the product becomes ineffective. If not used, diluted solution can be REFRIGERATED briefly.

How is the bait applied*?* Ground application is recommended; aerial applications may be less effective due to resulting small droplet size. For best effect, large droplets (4–5 mm in diameter) are needed so they do not dry out quickly.

When using an "all terrain vehicle" (ATV), the solution should be applied to the upper half of each tree, in every other row each week (divide the amount of solution per acre by the number of trees per acre to determine the amount of solution to apply per tree). The following week, the alternate unsprayed rows should be treated in a similar manner.

If using a handgun applicator for individual trees, cover approximately a 2-foot diameter area within the tree canopy on the north or east side of each tree. Do not use flat fan nozzles. For best results, about three to six 5 mm diameter droplets per square foot of foliage are necessary. At the dilution rate of 1:4 GF-120 to water and an application rate of 14 oz./acre of GF-120, the volume of the diluted spray solution will be 70 oz./acre (14 oz. of GF-120 added to 56 oz. of water). Higher concentrations (e.g., 1:1.5) may be more difficult for your spray equipment to easily deliver without becoming clogged.

How do I time the sprays*?* Timing of the first one or two sprays should be when increasing numbers of flies are trapped. If springtime climatic conditions are unusually warm, first sprays should be started before June 1 (usually around March or April depending on the weather). After June 1, initiate weekly protective insecticide sprays.

How often do I have to spray*?* To ensure effective control through each OLF generation, we recommend GF-120 be applied to every other row every seven days from the time of pre-pit hardening until harvest. There will be little additional cost to implement this procedure because only one half of the orchard is being sprayed each time.

What about a post-harvest application*?* No. More effective control can be obtained with springtime sprays as discussed above.

Other Methods of Control

What about Post-harvest Sanitation*?* Olives remaining on the tree after harvest are the primary source of next year's infestation by providing a place for continuing development of the fly. Knock down remaining fruit from trees as soon as possible after harvest, and destroy them on the ground by any method possible including mulching or disking. If fruit are buried, they must be at least 4 inches deep. Remove fruit from all olive trees within 1/2 mile of your orchard. Note that if OLF infestations are high in your surrounding area, sanitation may provide minimal protection.

Does Mass Trapping Work? Mass trapping of OFL adults can lower adult populations in orchards, but economically significant fruit damage can occur. Mass trapping will probably be more effective in locations where the OFL adult numbers are already low.

What is the status of Attract & Kill Traps? The attract and kill device (Magnet OL®), manufactured by AgriSense, uses a food attractant and sex pheromone to attract olive flies and is impregnated with a pyrethroid insecticide to kill them. It has just received registration in California. These traps will be marketed by Monterey AgResources and will be available in limited quantities this year. These traps are hung in the trees and will last for up to 5 months. They are not recommended as a stand-alone control unless populations are very low. Research is underway to determine how to best use these traps in California. They may be particularly useful in non-commercial settings where they could be put up once a season to give some control and hopefully keep OLF populations from exploding. For more information: Monterey AgResources (559) 499-2100.

What about Kaolin Clay as a Protectant Against OLF? Kaolin clay has been used to protect plants from various insect pests. The product Surround WP (produced by Engelhard) contains highly refined kaolin clay, with a small particle size, as well as a spreader sticker. It is registered for use against the olive fly. Data from a one-year, small-scale trial in California indicated some success with the product. The efficacy of Surround WP is still being determined for OLF control in California, and no recommendations for its use can be made currently.

On-going Research on Management of OLF

To better understand and control the OLF, research is being conducted where information is lacking. These efforts are being funded by several sources including the University of California, USDA Agricultural Research Service, USDA APHIS, California Department of Food and Agriculture, and the California Olive Committee. Research topics include but are not limited to: a) maximization of the efficacy of GF-120 bait treatments used within olive groves; b) discovery, introduction, and establishment of parasitic wasps that attack OFL (i.e., classical biological control); c) estimation of the flight capabilities and short-range movement patterns of OFL within and between agricultural and urban areas; d) development of degree-day models for OLF and olive fruit to improve treatment timing and potentially reduce number of sprays; e) mass trapping and attract and kill traps; f) effects of cultural practices on overwintering OLF populations; and g) impacts of summer heat on the survival of OLF eggs, larvae, and adults.

Summary

Olive fly populations have increased dramatically over the last four years in both commercial and urban settings. Thus, a higher potential for OLF damage exists this season if management treatments are withheld. Processors have essentially established a zero tolerance for infested fruit and with significant OLF populations encountered thus far this season, earlier application of protective sprays should be considered.

For further information contact your UCCE County Farm Advisor or Ag Commissioner's office, or the California Olive Committee at (559) 456-9096.

For information on OLF in the urban or landscape setting, see the UC Pest Note on Olive Fruit Fly, UC Publication 74112, available online at:
http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74112.html

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