SOUTHERN SAN JOAQUIN VALLEY
OLIVE DAY

Thursday, April 29 - 8:00 to 12:00 P.M.

Tulare County Agricultural Building
4437 South Laspina Street, Tulare, CA

7:30-8:00 A.M.  Registration

8:00-8:45  Olive Fruit Fly & Olive Psyllid Update

8:45-9:15  An Imported Guatemalan Wasp for Biocontrol of Olive Fruit Fly
Vicki Yokoyama, Entomologist, USDA-ARS-SJVASC

9:15-9:45  Disease Management in Olives
Doug Gubler, Extension Specialist, Plant Pathologist, UC Davis

9:45-10:05  Grower/PCA Perspective on Pest Management
Rod Burkett, PCA, Chairman, Olive Growers Council

10:05-10:30  Coffee Break, Snacks donated by Olive Growers Council of California

10:30-11:00  Update on Mechanical Harvest Program
Louise Ferguson, Cooperative Extension Pomologist, Kearney Ag. Research & Ext. Ctr.

11:00-11:20  UC Davis Olive Center Update
Dan Flynn, Executive Director, UC Olive Center

11:20-11:50  Olive Industry Update
Adin Hester, President, Olive Growers Council

2.0 hours of continuing education credit has been requested.

SOUTHERN SAN JOAQUIN VALLEY OLIVE DAY REGISTRATION

Detach form and include a check payable to UC Regents by April 22, 2010 – Cost is $5.00 per person.
Mail to: SSJV Olive Day, 4437B So. Laspina St., Tulare, CA 93274-9537, or register at the door.

Name(s)__________________________________________________________
Address________________________________________________________
City, State, Zip Code______________________________

Date Received ______________ Check No. Or ✓ if Cash __________
Receipt No. ______________ Amount Received __________________
CHEMICAL THINNING OF OLIVES
Elizabeth Fichtner, Farm Advisor, UCCE, Tulare Co.
Bill Krueger, Farm Advisor, UCCE, Glenn Co.
Steven Sibbett, Farm Advisor Emeritus, UCCE, Tulare County

The 2009 olive crop loss may result in a heavy crop load in 2010. With the prospect of a heavy crop load, it may be wise to consider thinning to reduce fruit quantity and increase fruit size. Management of fruit size may be achieved by pruning and/or chemical thinning.

Why thin your olives?
Larger fruit. Overloaded trees bear small, unprofitable fruit. If a crop is thinned during the fruit’s early growing period, the remaining fruit will grow larger. The larger fruit command a higher price that more than offsets any reduction in total yield. By thinning the crop, you will bring otherwise substandard-sized olives up to canning sizes.

More consistent yearly crops. After a modest crop, shoot growth and prospects for a satisfactory crop the following year are good. In contrast, a heavy crop of olives is followed almost invariably by a light crop.

Early maturity. A moderate crop matures earlier than a heavy crop. An early crop is more likely to get a good reception from the handler, has less competition for harvest labor, is less likely to fall victim to cold weather in the early fall, and ensures a good bloom for the next year.

Lower harvest costs. Olive picking costs are figured on a per-ton basis, so the per-acre harvest costs for a moderate crop are less than for a large crop.

Pruning vs. Chemical Thinning
Pruning removes potential fruit and foliage, stimulating growth which will help minimize alternate bearing. Chemical thinning is achieved with use of the plant growth regulator, naphthaleneacetic acid (NAA). NAA is absorbed into the leaves and fruit and is then translocated to the fruit stems. An abscission layer forms during the first two weeks after NAA application, causing some fruit to drop. Pruning plus chemical thinning is recommended for crop control in Manzanillo; however, chemical thinning is not recommended for Sevillano.

NAA for Olive thinning
NAA Formulation for Olive thinning. NAA is manufactured in the form of an ammonium salt for commercial use on olive orchards, with 200g of active ingredient per gallon. This formulation is marketed as Liqui-Stik Concentrate (EPA reg #34704-382) by Platte Chemical Company. The material does not contain wetting agents.

Amount and Timing. The concentration of NAA applied depends on the method used to determine spray timing (full bloom method or fruit size method) and whether a spray oil is used.

Full bloom date method. If you time your spray according to the full bloom date, apply NAA as a dilute spray (300 to 500 gallons per acre 12 to 18 days after full bloom. If applied at 10 days, use a concentration of 100 ppm. Thereafter, increase the concentration by 10 ppm for each day that treatment is delayed. For example, if you spray 15 days after full bloom, use a concentration of 150 ppm. CAUTION: Abnormally cool weather will delay fruit growth. In such a circumstance, use the fruit size method for spray timing.

Fruit size method. If you use the fruit size method, sprays are applied when fruit on the north and south sides of the trees average between 1/8 and 3/16 of an inch. This can be determined by folding a standard 2 x 3 1/2 inch business card in half across the narrow dimension. When 11 to 16 fruit can be placed side by side across the card, it is time to thin. With normal weather, this will usually be between 12 and 18 days after full bloom. It is useful to note the day of full bloom (when approximately 80% of the flowers are open, 10% are unopened and 10% are at petal fall) to allow you to predict spray timing. If you use the fruit size method and spray without a spray oil, apply a concentration of 150 ppm NAA with a wetting agent or spreader-sticker.

Risks and precautions of chemical thinning. The thinning response is dependent on the temperatures shortly following application. Response can vary from no thinning, if temperatures are unusually cool following application, to nearly complete crop removal if temperatures are excessively warm. EPA registration for NAA covers the period from full bloom to 2 ½ weeks after bloom. Later NAA applications are both illegal and useless. Too early an application will overthin; too late an application will yield unsatisfactory results. An application during bloom will destroy the crop. Hot weather during and following bloom, especially when accompanied by drying winds, can reduce fruit set and make thinning unnecessary. Research has demonstrated that the first two or three days after treatment are the most critical in determining the thinning response. Pay attention to weather forecasts prior to treatment and if
Forecasted temperatures are significantly warmer or delayed until more normal temperatures return. As the length of time from full bloom increases, the thinning response decreases. NAA should not be used on water stressed trees.

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SPRING RAINFALL NECESSITATES A WATCH FOR OLIVE KNOT
Elizabeth J. Fichtner, Farm Advisor
UC Cooperative Extension, Tulare County

After several drought years with few spring rainfall events, the more “typical” spring rains observed in 2010 may serve as a reminder to protect plants from olive knot. Olive knot is caused by *Pseudomonas savastanoi* (formerly called *Pseudomonas syringae pv. savastanoi*), a bacterium that persists on tree surfaces (i.e. epiphytically). Olive knot may girdle and kill infected twigs and branches, and severe infestations may affect yield and quality of fruit.

**Disease Cycle**

Though the bacterium may be present throughout an orchard, it can only incite disease after passively entering the host through wounds or leaf scars. Disease transmission is linked to rain events which stimulate growth of the bacterial population and facilitates movement of the pathogen to points of plant entry. Spring rains are particularly conducive to disease development partly because a large percentage of leaves abscise between May and June, leaving leaf scars susceptible to pathogen entry. Leaf scars are most susceptible to infection within two days after a rain event, but may remain susceptible for seven days after a rain event.

Once the olive knot bacterium infects the plant, it produces plant growth hormones IAA and cytokinins which stimulate tissue proliferation resulting in a gall or “knot” (Fig. 2). Recent studies demonstrate that the bacterium can be transported within the plant through xylem vessels, resulting in “secondary” knots along the stem. This new information underscores the importance of preventing initial infections by managing populations of the pathogen on the plant’s exterior. Once the bacterium is in the plant, surface sprays will not ameliorate disease. Sprays are preventative and not curative!

**Management**

Presently there are two tools used for managing olive knot: sanitation and copper sprays. Removal of galled tissue from trees will reduce the population of the olive knot bacterium in the orchard. When pruning infected tissue from trees, surface sterilize pruning tools to prevent pathogen transmission. Remember that the bacterium requires an opening in the plant for entry and pruning wounds provide points of entry for the pathogen. Pruning during the dry season (July-August) will reduce the likelihood of promoting new infections.

While disease incidence is positively correlated with spring rainfall events and heightened pathogen populations, prophylactic copper sprays should be applied both post-harvest and in the spring (March-May). A minimum of two copper sprays per season are required for disease management, but orchards with historically high disease pressure may require a third application. Additionally, recent studies have suggested that younger trees (1 year old) are more susceptible than older trees (3 year old); consequently, protection of new plantings is advisable, particularly during El Nino-style weather patterns. For more information on olive knot and other diseases and pests, visit UC IPM Online: [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu).
As a new Farm Advisor in Tulare County, I’d like to welcome olive growers to attend the 2010 Olive Day on Thursday, April 29. It is my goal to utilize this program as an opportunity to meet olive growers of Tulare County. This meeting will provide a platform for assessing grower and industry needs while exploring new horizons in disease-, pest-, and orchard-management. I joined UCCE after a six year tenure with UC Davis working in applied plant pathology and soil science. I am eager to extend my interest to orchard systems while developing an extension program for Tulare County nut, olive, and dried plum growers.

I look forward to seeing you on April 29!

Elizabeth Fichtner, Farm Advisor