



Olive News



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OLIVE FLY UPDATE AND PEST CONTROL DISTRICT MEETING

As most olive growers are aware, olive fruit fly activity has intensified recently in the San Joaquin and Sacramento Valleys. As of this writing, a portion of Tehama County has been declared to be infested by the Tehama County Agricultural Commissioner.

At this time, I think that we have to assume that the rest of the Sacramento Valley is, or will become infested, and plan accordingly. To this end, the Agricultural Commissioners of Glenn, Tehama and Butte Counties will be holding a meeting on November 2nd at 1:00 p.m. at the Orland Memorial Hall to update growers on the infestation, and explore the possibility of the formation of a pest control district for the purpose of suppressing the olive fly population in the area. Olive growers will be receiving follow-up information from the Agricultural Commissioners on this meeting.

NEWSLETTERS AVAILABLE ELECTRONICALLY

In our office, we are working toward the goal of making our newsletters available on the Internet. If you elected to receive the newsletter electronically, it would not be mailed to you, thus reducing our mailing costs. The advantages to you of receiving the newsletter electronically are that it would be instantaneous, no waiting for the postal service to deliver it, and sometimes newsletters contain color pictures or charts which cannot be published in the mailed newsletter format.



To receive the newsletter electronically, you will need an Internet connection, an e-mail address and Adobe Acrobat, which can be downloaded free from the Internet. If you would like to receive your newsletters electronically, please fill out the enclosed form and return it to our office. Our goal is to have this option available for all newsletters after the first of the year.

Preventing Peacock Spot and Olive Knot Disease

Olive Leaf Spot, also known as Peacock Spot, is caused by the fungus *Spilocoaea oleaginea*. Wind and rain move spores from holdover lesions to new infection sites. Symptoms, dark green to black spots sometimes surrounded by a yellow halo, defoliation and twig death, develop in the spring. Of the common varieties in the Sacramento Valley, Mission is the most susceptible.

Olive Leaf Spot is controlled by the application of copper fungicide before heavy rains begin in the fall. Research by UC Researchers Beth Teviotdale and Steve Sibbett during the eighties and early nineties showed that all of the fungicides tested (Bordeaux, Kocide, Nordox, Microcop and Copper Count N) performed equally. In any one year, one copper treatment applied prior to winter rains (Nov.) was as effective as two sprays (Nov. and Jan.) However, where the double spray was used consistently year after year, long-term disease infection was suppressed. Treatment differences were still apparent three years after all of the trees were returned to the same treatment, indicating the role of consistent control programs in disease suppression.

Olive Knot Disease is caused by *Pseudomonas savastanoi* bacteria, which are spread about by wind and rain, and get into trees through openings such as leaf scars, pruning wounds and frost cracks. The “knots”, which are disorganized tissue that can girdle and kill twigs and branches, develop in the spring. Of the varieties commonly grown here, Manzanillo is the most susceptible. Research conducted for the past several years by UC Plant Pathologist Beth Teviotdale and myself has shown the following:

- % Copper resistance by the bacteria is limited.
- % The majority of infection occurs in the spring, coinciding with the period of natural leaf drop.
- % Efficacy of fall-applied copper treatment declines by March or April.

In our studies, two sprays were more effective than one, and three were more effective than two. Table 1 summarizes the results from our 1999-2000 trial. Similar results were obtained in 1998-1999. All of the treatments were applied with a hand-gun sprayer with approximately 400 gpa of water.

The materials and rates were:

- Kocide DF - 2.5 lbs/100 gals water
- Bordeaux - 10 lbs of copper sulfate + 10 lbs hydrated lime in 100 gals water
- TriBasic Copper = 3 lbs/100 gals water
- Nordox - 3 lbs/100 gals water

In order to follow disease development throughout the trial, five shoots per tree, with ten leaf nodes per shoot, were defoliated on all trees at approximately monthly intervals from December through May. In June, the knots which developed on the defoliated shoots were counted and the data is reported as % infected leaf scars. Leaves were collected from the trees immediately before and after treatment, and in June, analyzed for copper to get an idea of copper residue on leaves.

In 1998-99, there were no differences in percent infected leaf scars for the two sprays of Kocide, Bordeaux, Nordox or TriBasic applied on the same days. However, in 1999-2000, Bordeaux, Nordox and TriBasic resulted in less infection than Kocide (Table 1).

From this work and my experience, I would make the following recommendations:

- Apply at least two copper treatments per year.
 - The first should be applied in the fall before the rains, begin to prevent Leaf Spot.
 - The second should be applied in March or April to protect developing leaf scars from natural defoliation from Olive Knot infection.
- If a freeze results in significant defoliation, apply a treatment immediately.
- If using Kocide, you may want to use the higher label rate to insure adequate residue for longer-term disease control.
- Don't prune trees susceptible to freeze damage and/or Olive Knot in the fall and winter. Fall and winter pruning can create wounds, which can be infected with Olive Knot if rains follow within 2 weeks. Pruning can also open canopies and make them more susceptible to freeze injury and subsequent infection.

Table 1. EFFICACY AND TIMING

Material	Treatment Date					Copper Residue in ppm 30 June	Infected Scars (%) 24 July
	2 Dec	3 Feb	3 Mar	3 Apr	5 May		
Kocide	X					54 AB	10.1 CD
Kocide		X				62 ABC	12.4 BC
Kocide			X			60 AB	7.3 D
Kocide				X		77 BC	8.8 CD
Kocide	X	X				79 BC	4.8 EF
Kocide	X		X			121 CD	6.5 DE
Kocide	X			X		153 DE	4.6 EFG
Kocide	X	X		X		185 E	3.2 FG
Kocide	X		X		X	318G	1.7 FG
Kocide	X		X			121 CD	6.5 DE
Nordox	X		X			168 DE	2.5 FG
TriBasic	X		X			165 DE	4.1 FG
Bordeaux	X		X			258 F	1.9 G
CONTROL						11 A	19.0A

Infected leaf scar data are the means for all defoliation dates. Values followed by the same letter are not significantly different.



Fig. 1 Peacock Spot



Fig 2. Olive Knot Disease