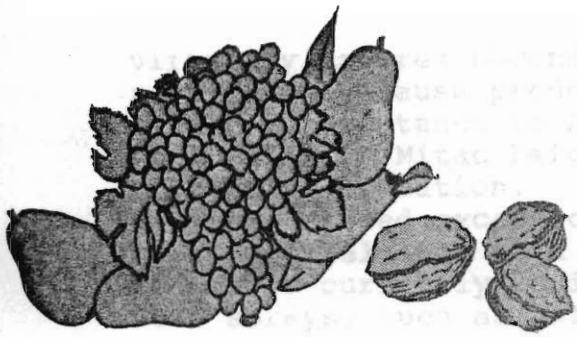
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION COUNTY OF LAKE



your Lake County HORTICULTURAL NOTES

883 LAKEPORT BOULEVARD
LAKEPORT, CALIFORNIA 95453
TELEPHONE: 263-2281

JUNE 1989

POOR PEAR PSYLLA CONTROL - THE PROBLEM MAY BE YOUR SPRAY RIG

In some Lake County orchards, pear psylla populations approached economic levels soon after full leaf-out (mid-April). Other orchards appear under good control. Growers, PCA's and certainly myself, wonder why problems are worse than usual, especially in orchards that received timely dormant Pydrin applications as well as oil. In fact, psylla has worsened through the years and will continue until disruptive codling moth treatments are eliminated and predator levels, e.g. lacewings and minute pirate bugs, are restored. There are several possible reasons for poor control. All merit careful consideration by researchers and the pear industry.

CLIMATE AND VIGOR - The Northwest is also experiencing severe psylla, according to Dr. Everett Burts, Washington State University Entomologist at Wenatchee. Like Lake County, trees exhibited vigorous shoot growth and delayed defoliation last fall. This was likely due to: 1) a long, mild fall, 2) excellent mite control with avermectin (Avid), and 3) (in some orchards) a light crop due to early frost loss. Psylla also benefitted from the mild weather and multiplied on the vigorous shoots -- which incidentally were free of Avid residue. Dr. Burts feels that the resulting high numbers overwintered and emerged in a tight group after the very cold winter.

RESISTANCE - Veteran PCA's remember when one dormant Pydrin at very low rates "smoked" psylla. This year, control is poor in some orchards that received two applications at high rates. A 1987-88 survey in Washington, Oregon and California revealed some level of resistance in most growing regions (see April 1988 Horticultural Notes). In 1988, an average 9-fold resistance was found in three Lake County orchards (i.e. 9 times the rate needed to kill a susceptible population). Two of the same orchards were sampled this winter and found susceptible. These two years of contradictory data only indicate the need for a more extensive survey (greater sample size). Observation indicates resistance is a real concern.

Timely dormant treatment remains the key to season-long control. Avid is only registered for mites thus far, and oil only temporarily suppresses populations. Amitraz, the "big gun",

University of California and the United States Department of Agriculture Cooperating.

virtually assures secondary mite outbreaks and late-season psylla resurgence because predators are killed off. Also, there is no data on resistance to Amitraz. This year, some orchards were treated with Mitac before second cover, exacerbating an already difficult situation. Psylla have become resistant to every chemical tried except oil. The goals of the industry should be to reduce reliance on a chemical solution, and preserve the life of those currently registered. The introduction of commercial soap sprays, such as Safer Insecticidal Soap will help.

SPRAY COVERAGE - As elementary as it seems, poor pest control is still, more often than not, due to poor application. A big, fat air-blast spray rig that spews out 500 gpa may look impressive but the treatment will be a big, fat failure unless all portions of the tree are covered uniformly with the proper amount of pesticide. Growers (should) all know that:

1) 2/3 OF THE SPRAY SHOULD REACH THE UPPER PART OF THE TREE, and

2) SPEEDS OF GREATER THAN 2.5 MPH WILL DRASTICALLY REDUCE COVERAGE, AND HENCE CONTROL.

Despite this "common sense" knowledge, PCA's have informed me that many growers underspray the tops of trees where most psylla and mites reside. The most critical parts of your giant sprayer are those very, very small nozzles that direct the spray into the airstream to the target. Disc core nozzles must be checked often during the season and the cores replaced if corrosion and wear have enlarged the orifice. Calibrating only once before the season begins is probably inadequate, especially when wettable powders are used and spray angles are narrow.

Tree size is also a big factor. In 1988, a spray coverage dye test was performed in walnuts using a Turbomist at 250 gpa and 1.8 mph. 100% coverage was achieved throughout the canopy up to 24' high. It then dropped to 83% and 14% inside and outside the tree respectively. At 28', only 14% and 6% coverage was attained. 24 - 30' high trees are not unheard of in Lake County. Tall trees combined with poor application technique likely spell control F-A-I-L-U-R-E.

To sum up, growers should be asking themselves and their PCA's these questions:

1) Does it take more applications at higher rates to control psylla? If so, why?

2) Is the proper amount of material being applied uniformly to all parts of the tree? If not, why?

Speed of travel, proper volume through each nozzle, and adequate coverage in tree tops are the critical factors. Your PCA and/or chemical dealer can provide water-sensitive dye paper and help test coverage. If application problems are eliminated, the

discussion once again returns to resistance. This is a long-term, regional dilemma, one that all growers, researchers, chemical producers and service personnel must tackle together. It is a problem that only a return to ecological balance in the orchard will solve.

AN INVITATION TO OUR TEST PLOT

Last June, we held a Field Day at our variety test plot near Lakeport. This year, those interested are invited to come view our apples, pears, grapes and other fruit trees, as well as turfgrass varieties at their convenience. The varieties we have are:

PEAR

Bartlett
Max Red Bartlett
Red Sensation Bartlett/Winter Nellis
California/Winter Nellis
Rosi-Red/Winter Nellis
Swiss Bartlett/Provence Quince
Improved Bartlett (BPM?)/Provence Quince
Worden Seckel/Provence Quince
Packham
Duchesse D'Anjoulene/Provence Quince
Anjou/Provence Quince
Doyenne du Comice
Reimer Red/*P. calleryana*
Spartlett
Red Comice
Harrow Delight
Harvest Queen
Bosc
many Asian pear varieties

WINE GRAPES (all own-rooted)

Gamay
Cabernet franc
Cabernet sauvignon
Zinfandel
White Riesling
Sauvignon blanc
Muscat Alexandria

Water status is monitored using tensiometers. The plot is drip-irrigated and fertilized with ammonium nitrate. Devrinol and Goal are applied to the tree rows in the fall before the rains. Existing weeds are treated with Round-up, middles are mowed. Full-bloom and harvest dates have been recorded for 10 years (I have summary sheets). Jim Benson, our Agricultural Technician,

farms the 2-acre plot and is happy to discuss varietal characteristics and cultural practices. Give us a call if you'd like to visit.

VINEYARD CANOPY ASSESSMENT WORKSHOP OFFERED

WHEN:	Thursday, July 20, 9:00 A. M. - 4:30 P. M.
WHERE:	UC Extension Center, UC Davis
INSTRUCTOR:	Dr. Mark Kliewer, UCD Dept. of Viticulture and Enology
REGISTRATION:	by July 13. $90.00 (includes lunch) Call 1-800-752-0881 or contact our office

ORGANIC FARMING CERTIFICATION HANDBOOK

Contact me if you'd like to see the California Certified Organic Farmers 1989 Certification Handbook. I also have copies of the application and affidavit forms. The handbook contains the current list of allowable, restricted and prohibited materials for pest control and fertility. CCOF may be reached at Box 8136, Santa Cruz, CA 95061, (408) 423-2263. The local chapter is at (707) 823-0823.

Sincerely,

Rachel B. Elkins

Rachel Elkins
Farm Advisor

COOPERATIVE EXTENSION
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA 94720

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300