your *Lake County* HORTICULTURAL NOTES

JUNE 1994

!!! MARK CALENDARS !!!
(details in July HORT NOTES)

JULY 26 **LAKE COUNTY PEAR RESEARCH FIELD DAY**
8:30 - 12:00 noon

JULY 29 **Winegrape Canopy Management Workshop**
Dr. Richard Smart
Fetzer Oaks Center, Hopland

FIREBLIGHT CUTTING TOOL DISINFECTANTS

1994 is apparently one of the worst fireblight years in recent Lake County history. Depending on several factors, i.e. stage of bloom, microclimate and control program (mainly timing), some level of infection is present throughout the county. Tree vigor and variety are two other factors determining infection extent and severity. The worst cases seem to be in the Finley area, some lake orchards and the northwest end of Scotts Valley. Surprisingly, Upper Lake appears relatively "clean" thus far.

Although it rained during the first part of April and bacteria was noted in blossom samples on April 14, according to our considerable local expertise, the major infection period occurred during the rain and humid, warm period of April 23-27. At that time, most orchards were at the tail end of main bloom or into an extended rattail bloom period. In a few cases, frost and/or hail damage incurred on April 26 provided wound entries for bacteria. Blight strikes were observed in commercial orchards around May 4, coinciding with the infection event. (The first homeowner blight samples were brought in to our office on April 19.)

883 LAKEPORT BLVD. • LAKEPORT, CA 95453 • (707) 263-2281 • FAX 707-263-2399 • TDD 1-800-698-4544
U. S. Department of Agriculture, University of California and County of Lake Cooperating

Wheelchair Accessible

Now that the primary infection period has ended, growers are faced with continuing secondary infection potential and more certainly, the prospect of cutting out infected wood through most of the summer. According to one grower, there has been a run on Lysol in all the local pharmacies.

Growers who are cutting blight may be interested in some research by UC Davis Extension Plant Pathologist Dr. Beth Teviotdale. In 1992, Dr. Teviotdale compared the efficacy of two common disinfectants, trisodium phosphate (TSP) and sodium hypochlorite 5.25% (Clorox). In the tests, a saturated solution of TSP was compared to 1) undiluted, 2) 1:10 diluted and 3) 1:20 diluted Clorox solutions and 4) a water control. The solvent was tap water. Fireblight-infected Asian pear fruit were surface sterilized, dried, inoculated with Erwinia amylovora bacteria and incubated until they oozed. Clean scalpel blades were infested using these fruit then either quickly dipped or soaked 3 minutes in each treatment. Cuts were then made into clean fruit.

In another experiment, clean blades were either dipped in treatments or soaked in TSP for .5, 1, 1.5, 2 or 3 minutes before cutting clean fruit. Corrosiveness was tested by dipping clean carbon steel razor blades into each treatment for 48 hours and observing damage.

The successful treatments were:

1:10 Clorox dip
3 minute 1:10 Clorox soak
3 minute TSP soak
0.5 through 3 minute TSP soak

Unsuccessful treatments were:

1:20 Clorox dip
TSP dip
water dip or soak (control)

Dr. Teviotdale concluded that with at least a 30 second soak period between cuts, TSP was an effective and less corrosive disinfectant. From previous tests, she also concluded that TSP was more effective than Lysol versus Clorox.

EARLY SUMMER WALNUT UPDATE

Growers noted several problems toward the end of May. Contact me for further information or help with any of these:

1) Walnut Blight - Blighted nuts and leaves became apparent. Nut symptoms begin with water soaked spots that then turn black. It is especially visible at the tip end. Nuts often stop growing and eventually drop off. Leaves have irregular black lesions and become distorted. Early varieties, or late varieties nearby the

early ones, often show the most symptoms. Infections occurred during the rainy periods of late April and early May. Control is by copper and must be applied before infection occurs. Growers with blight should be vigilent next spring.

2) **Windburn (or 'Mesophyll Collapse')** - Exposed leaves develop necrotic lesions between the veins, become twisted and may drop. This is caused when developing tissue is exposed to strong, dry, warm winds such as occurred in May. There is no control nor association with economic damage.

3) **Frosted and Calico Scale Nymphs** - The nymphs of the new generation of scale are now emerging from under their (deceased) parent. They are tan, flat, oval-bodied, sitting mainly on the upper side of leaves. They will feed on leaves until fall, then move back onto one-year-old wood until they develop into mature scale early next spring. Long time (now retired) IPM Farm Advisor Bill Barnett suggests treating this generation of nymphs at husk fly timing, using diazinon for both. Summer oil emulsion has also been recommended for non-stressed trees ONLY.

Details on all of the above are in (available from our office):

Integrated Pest Management for Walnuts
DANR Publication #3270 $22.00

UCIPM Walnut Pest Management Guidelines
$3.00

INTERPRETING BLOOMTIME GRAPE PETIOLE ANALYSES

The purpose of petiole sampling at bloom is to assess nutritional levels to decide on an appropriate fertility program. Plant tissue analysis is preferred over soil samples for most elements. Soil analysis is useful for assessing pH, salinity and certain toxicities (ex. boron and sodium) but not to measure the nutritional status of the vines.

For grapes, the main yield-related elements are nitrogen (N), phosphorous (P), potassium (K) and zinc (Zn). Like other North Coast counties, Lake County has many interesting and unusual soil types, so learn to expect anything!

One concern is K:Mg ratio. Although not known why, when one is high the other tends to be low. Critical ratios are not experimentally known but labs which regularly analyze North Coast samples may have a handle on which ratios are likely to cause problems. In our serpentine soils, high Mg:K is the most likely. Fortunately, grapes are highly adaptable and thrive where other crops barely survive (e.g. on poor walnut ground).

"Critical levels", above or below which toxicity/deficiency occurs, have been established experimentally for some nutrients. Most work has been done in the San Joaquin Valley on Thompson

Seedless grapes. Some zinc, boron and phosphorous deficiency research has been done in the coastal ranges. Critical levels have not been established for all varieties, especially wine varieties. Each grower must learn over time what is adequate based on vine growth (vigor), crop load and crop quality. We suggest tissue analysis be done for several years to establish baseline values for "good" and "poor" areas and for each variety. Interested growers may want to contact us for results of a three-year bloom petiole survey for Lake County Cabernet Sauvignon and Sauvignon blanc.

Here are UC critical values for grapes*

Nitrate-nitrogen	less than 350 ppm	Deficient
	350 - 500	Questionable
	**500 - 1,200	Adequate
	over 1,200	More than necessary
	over 2,000	Excessive
	over 3,000	Possibly toxic
Phosphorous	less than 0.10%	Possibly deficient
	0.10 - 0.15	Questionable
	over 0.15	Adequate
Potassium	less than 1.0%	Deficient
	1.0 - 1.5	Questionable
	over 1.5	Adequate
Zinc	less than 15 ppm	Deficient
	15 - 26	Questionable
	over 26	Adequate
Boron	less than 25 ppm	Deficient
	26 - 30	Questionable
	over 30	Adequate
	100 - 150 and above	Possibly toxic
	over 300 in blades	Toxic
Iron	none established	N/A
Magnesium	less than 0.2%	Probably deficient
	0.2 - 0.3	Questionable
	over 0.3	Adequate
Manganese	less than 20 ppm	Deficient
	20 - 25	Questionable
	over 25	Adequate

* From *Grapevine Nutrition and Fertilization in the San Joaquin Valley* - UC publication #4087 ($10.00) by Pete Christensen, A.N. Kasimatis and Fred Jensen.

** Nitrate values vary greatly among wine varieties.

NEW PUBLICATION ON MEXICAN PEAR TRADE INFRASTRUCTURE

The Center for Agricultural Business at Cal State, Fresno has published Mexico's Agricultural Trade Infrastructure for Apples and Pears (CATI Publication #940201). According to authors Juan Batista and John Hagen, the report details a study to identify and assess:

- various modes of transportation used to ship apples and pears into Mexico;
- distribution channels for each mode of transportation identified;
- costs of each mode of transportation and its associated infrastructure network; and
- problems associated with the shipment of apples and pears from the U.S. to Mexico.

We have one copy available to review at the office. Copies may be obtained from California Agricultural Technology Institute (CATI), 2910 East Barstow Avenue, Fresno, CA 93710-0115, (209) 278-4405.

UNIVERSITY EXTENSION WINEGRAPE CLASSES

contact UNEX at 1-800-752-0881

Vineyard Water Status: Assessment and Modification for Winegrape Production
Monday July 25 UC Davis $130.00

Winegrape Variety and Rootstock Identification Workshop
Tuesday July 26 UC Davis $130.00

Home Vineyard Series: Soils, Ground Covers and IPM
Wednesday July 27 UC Davis $95.00

Vineyard Canopy Assessment Workshop
Friday August 5 Napa Valley College $110.00

NEW UC PUBLICATIONS (contact our office)

California Field Crops: Location and Trends in Acreage, Yields and Production;
Giannini Foundation Information Series No. 94-1

Cultural Practices and Sample Costs for Organic Vegetable Production on the Central Coast of California
ibid No. 94-2

Insects, Mites and other Invertebrates and their Control in California
Publication #4044, rev. 1994, 124 pgs. $4.00

IPM for Strawberries
Publication #3351, 1994, 142 pgs. $30.00

Kiwifruit Growing and Handling
DANR #3344, 1994, 140 pgs. $25.00

Olive Production Manual
Publication #3353, 1994, 160 pgs. $28.00

JUNE CHECKLIST (Contact us for details or assistance)

GRAPES - leaf removal to expose bunches to air and light should be done around fruit set. Take care not to over-expose south or west-facing fruit.

petiole samples for nutritional status should be taken at full bloom (page 3). Particularly watch K levels, especially in Chardonnay. If K is marginal, plan on re-testing at veraison and DON'T OVERCROP!

maintain good early-season water status, especially after the dry 1994 winter.

mildew control program if needed

PEARS - blight cutting continues...(use caution with N fertilizer).

WALNUTS - continue to train one strong shoot as the leader in new trees. Keep competing laterals pinched back. Remove suckers below the graft.

ALL YOUNG TREES/VINES - WATER, A LITTLE FERTILIZER OFTEN, WEED CONTROL, GOPHERS/MICE!

Sincerely,

Rachel B. Elkins

Rachel Elkins
Farm Advisor