



your Lake County HORTICULTURAL NOTES

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

NOVEMBER 1989

ASH WHITEFLY FOUND IN SACRAMENTO

Ash whitefly, known in the literature as pomegranate, pear or peach whitefly, was detected in downtown Sacramento on Wednesday, October 4 by a state entomologist. Since it was first identified in Los Angeles County in July 1988 (by the same entomologist) the whitefly has moved up the south central coast and into the San Joaquin Valley (SJV). Although urban landscape trees have been hardest hit, pomegranates in the southern SJV have been infested.

While whitefly has yet to be found on the North Coast, growers and (especially) PCA's should learn what the various stages look like, its lifecycle and how to recognize damage. UCCE will work with the Dept. of Agriculture to gather and provide resource materials, e.g. slides, photos, literature, etc., for local industry use.

Host Range - Since the whitefly persists in colder regions, it is expected to thrive all over California. California hosts include (besides the three "namesake" hosts) toyon, ornamental and edible Pyrus species, citrus, loquat and evergreen ash. Other worldwide hosts include quince and olive. It is common in many pear-growing countries including France, Spain, Poland and Italy. In most cases, and this is very reassuring, natural enemies keep it under economic control.

Symptoms - When allowed to build up, "swarming" populations can develop rapidly, affecting every leaf of the canopy. Leaves roll downward, turn yellow and drop prematurely. Honeydew and sooty mold are by-products (sound familiar?).

Lifecycle - CDFA entomologists estimate 2 - 3 generations per year. Eggs are laid on the undersides of leaves. Immatures cluster together and excrete copious honeydew. Pupae secrete drops of glassy wax which give leaves a "slimy" appearance. Adults swarm heavily. Eggs have been found in late fall and all stages found overwintering on citrus in southern California. In the case of deciduous trees, overwintering hosts would likely include toyon and loquat.

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Control - Chemical controls have been deemed impractical due to 1) poor coverage on the undersides of leaves, 2) lack of registered materials and 3) likelihood of resistance. According to a recent account in the Sacramento Bee, state entomologists have brought back several natural enemies. They hope to begin an active release program within a year. There are many examples of successful biological control programs in California. Due to the conscientious and prompt efforts of the state, the pear industry has every reason to be optimistic that the ash whitefly will never become an economic pest.

SOIL AMENDMENTS

Several growers (not to mention numerous backyard gardeners) have called to inquire about the relative merits of incorporating lime and/or gypsum to soil, generally to either increase soil pH or enhance general fertility by increasing available calcium. There is always some confusion about what lime does that gypsum doesn't and visa-versa. The following table originated from Butte County Farm Advisor, Bill Olson and has made its way around the state. It is a useful comparative summary of these two soil amendments. Note particularly: GYPSUM WILL NOT EFFECTIVELY RAISE SOIL PH.

AGRICULTURAL LIME AND GYPSUM COMPARED

	Agricultural Lime	Gypsum
Chemical names:	Calcium carbonate-- CaCO_3	Calcium sulfate-- $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
Common names:	Ground limestone--up to 100% CaCO_3 Sugar beet lime--80 to 90% CaCO_3 ¹	Gypsum--varies in purity Land plaster--varies in purity
Expense:	Bulk delivered--approx. \$11/T	Bulk delivered--approx. \$30/T
Uses:	<ul style="list-style-type: none"> (1) Raises pH of acid soils by increasing exchangeable calcium and neutralizing hydrogen ions. May be desirable below pH of 6. (2) As a source of calcium in low calcium soils. (3) Occurs naturally in some alkaline soils but will not effectively reclaim them unless sulfuric acid is added. (4) May slightly improve water penetration in acid soils (pH 6 or lower) but the improvement decreases as the pH rises. No improvement at pH 7 or above. 	<ul style="list-style-type: none"> (1) Will not neutralize acid soils or effectively raise pH (2) As a source of calcium and sulfate sulfur (18.6% sulfur in pure gypsum) (3) Reclaims alkaline (high sodium) soils by replacing sodium with calcium. (4) May improve water penetration² by flocculating soil particles at any pH when: <ul style="list-style-type: none"> 1. very pure (low salt) water is used for irrigation; b. the sodium absorption ratio (SAR) of the irrigation water or the surface 6 inches of soil is greater than 10 times the electrical conductivity (EC) of the irrigation water; c. if the SAR of the soil exceeds 10 during the rainy season
How much to apply:	<ul style="list-style-type: none"> (1) As a source of calcium: try incorporating 1 T/A (2) To raise pH one unit, incorporate 1.2-2.3 T/A 	<ul style="list-style-type: none"> (1) As a source of calcium or sulfur: try incorporation 1 T/A (2) To reclaim alkaline soils, incorporate 2-3 T/A and leach. (3) To improve water penetration, try broadcasting, not incorporating 1-2 T/A or add 200-1000 lb/acre-foot to irrigation water.

¹Other less commonly used liming materials include hydrated lime, burned lime and Dolomite.

²Gypsum won't change clay soil to a well-drained soil. It has no effect on plowpans, claypans, or hardpans. Therefore if water penetration is slow due to physical problems such as these, gypsum won't help.

GRAPE ROOTSTOCK AND VARIETY SELECTIONS

FPMS Registered Grape Selections and FPMS Registered Grape Selections by Nursery are available from Foundation Plant Materials Service at UC Davis. Use the accompanying order form or call FPMS for further information.

For a summary of rootstock characteristics, check the October 1988 issue of Hort Notes or contact our office for a copy of Grape Rootstock Characteristics.

FOUNDATION PLANT MATERIALS SERVICE
201 SEED CERTIFICATION CENTER
UNIVERSITY OF CALIFORNIA
DAVIS, CALIFORNIA 95616
(916) 752-3590

ORDER FORM

FPMS Registered Grape Selections: This is a list of all of the currently registered grape selections, their sources, recent disease indexing history, and number of days in heat treatment

\$5.00

FPMS Registered Grape Selections By Nursery: This is a list of grape selections included in California Registered Increase Blocks by participant and by specific grape varieties and selection number. Name, address and phone numbers of participants are included.

\$5.00

To order, please fill out the coupon below and send with payment to FPMS at the above address.

-----cut here-----

Please send to: NAME -----

 ADDRESS -----

----- copies of FPMS Registered Grape Selections

----- copies of FPMS Registered Grape Selections By Nursery

Enclosed is \$5.00/list in the form of a check or money order payable to the Regents of the University of California to help defray copying and handling expenses.

WALNUT VARIETY UPDATE

Several late-season selections are being tracked at UCD and in county field trials by UC walnut breeder, Dr. Gale McGranahan. A late-season variety trial will be established in Lake County next spring. Characteristics to be observed will include leafing and harvest dates (especially compared to Hartley), susceptibility to walnut blight, yield and kernel quality.

Cultivar and selection evaluations at UC Davis are summarized in the following table. After harvest is completed, yield and quality data will be reported. In the table, note particularly the % fruitful laterals. Lateral bearing trees are generally heavy yielders and produce nuts earlier in the tree's life; however, they generally require more pruning than terminal bearing types in order to keep them growing. Chandler is the best example of a late-season lateral bearing variety (see September 1988 Hort Notes).

TABLE 1. CULTIVAR AND SELECTION EVALUATIONS AT UC DAVIS (SPRING 1989)

Cultivars/Selections (Cross)	Leafing			Pollen Shedding				Pistillate Bloom			Fruitful	Yield ^c	Blight ^d
	Date	DAP ^a	5 yr	1st	Peak	Last	Abundance ^b	1st	Peak	Last	Laterals		
<u>Reference</u>													
Payne (-----)	3/18	0	0	3/28	4/4	4/16	6	4/4	4/10	4/18	75	6	5
Hartley (-----)	4/5	18	17	4/5	4/11	4/27	5	4/11	4/20	4/30	0	5	3
S. Franquette (-----)	4/12	25	25	4/10	4/18	5/11	6	4/18	5/3	5/14	5	6	1
<u>Established</u>													
Chandler (Pedro x 56-224)	4/6	19	17	4/3	4/10	4/20	7	4/11	4/19	5/1	90	7	3
Cisco/66-178 (pedro x Meylan)	4/12	25	24	4/5	4/18	5/7	6	4/17	5/2	5/15	75	5	4
<u>Selections</u>													
U.C. 76-80 (Chandler x 61-25)	3/28	10	12	4/2	4/9	4/17	6	4/9	4/17	4/24	75	6	2
U.C. 77-12 (Howard x 64-87)	4/3	16	19	4/9	4/14	4/22	5	4/5	4/14	4/21	80	5	3
U.C. 78-10 (53-153 x Chandler)	4/9	22	25	4/11	4/18	4/27	5	4/15	5/2	5/14	90	5	2

^a"DAP" denotes "days after Payne"

^bCatkin abundance: 1 = no catkins, 9 = extremely dense catkin production

^cYield estimate: 1 = no walnuts, 9 = extremely high yield

^dBlight score: 1 = no sign of infection, 9 = extremely severe infection

1990 FRUIT TREE NURSERY CATALOGS

I receive the following catalogs; you are welcome to come and review them (are there other nurseries I should know about?):

<u>NURSERY</u>	<u>LOCATION</u>	<u>PHONE NO.</u>
Adams County Nursery, Inc.	Aspers, PA	717-677-8105
American Fruit Tree Co., Inc.	Eugene, OR	800-421-4001
C & O Nursery	Wenatchee, WA	509-662-7164
Columbia Basin Nursery	Quincy, WA	509-787-4411
Dave Wilson Nursery	Hickman, CA	800-654-5854
Fowler Nurseries, Inc.	Newcastle, CA	815-645-8191
Harmony Farm Supply	Graton, CA	707-823-9125
Hilltop Trees	Ephrata, WA	509-787-1555
Joseph Klein Nursery Co.	Dayton, OR	503-868-7556
(specializes in Asians, Reds)		
Knolview Nursery & Farm, Inc.	Woodburn, OR	503-664-2207
Oregon Rootstock, Inc.		
L. E. Cooke Co.	Visalia, CA	209-732-9146
May Nursery Co.	Yakima, WA	800-722-0023
Sonoma Antique Apple Nursery	Healdsburg, CA	707-433-6420
(includes pears)		
Stark Brothers Nurseries	Louisiana, MO	800-325-0611
Van Well Nursery	Wenatchee, WA	509-663-8189

PUBLICATIONS AVAILABLE FROM UCCE - (contact our office)

Family Farm Series - Small Farm Center, UC Davis
Asian Pears
James Beutel, Extension Pomologist, 1989

How to Finance a Small Farm
Karen Klonsky, Extension Agricultural Economist
1989

Tips for Buying a Used Tractor - Leaflet #21341 - \$.50

Sincerely,



Rachel Elkins
Farm Advisor