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POMOLOGY NOTES

ALMONDS

October, 2007

UPCOMING MEETING:

<u>DATE</u>	<u>PROGRAM</u>	<u>LOCATION</u>	<u>CONTACT</u>
Oct. 25	Sutter/Yuba Spray Meeting	Yuba City, CA	(530) 822-7515
Oct. 31	Almond Pruning Field Meeting	Marysville, CA	(530) 822-7515
Nov. 1	Sutter Co. Ag Comm. Grower Meeting	Yuba City, CA	(530)822-7515
Dec 5-6	Almond Board of Calif. Conference	Modesto, CA	(209) 549-8262

ALMOND ORCHARD TOPICS TO CONSIDER IN FALL/WINTER

Pests:

Reject Report: Review your handler's nut quality report to determine what pest (if any) you should pay particular attention to in your IPM program for the 2008 crop. For example, if ant damage was a problem in 2007, make a note on your June, 2008 calendar to consider ant control.

Scale: A dormant spray in almonds is needed only if scale populations are moderate to high. To find out if scale control is needed, look for the pest on dormant spurs. A step-by-step guide to taking a monitoring an almond orchard for scale in Nov – Jan is included in this newsletter and is available on the web at: <http://www.ipm.ucdavis.edu/PMG/C003/m003dcdmtspursmpl.html>. Ask your PCA about this test, or call me (Franz) at 530-218-2359 to schedule a farm visit to go over this very important practice.

Navel orange worm (NOW): Hull split sprays only give, at best, 50% control of NOW. **Orchard sanitization is essential to good NOW control.** To determine if an orchard needs to be sanitized, count mummies on 20 trees per block on or before January 15. If the average number of mummies per trees is 2 or more, then the block needs to be sanitized. To sanitize an orchard for NOW control, shake or pole nut mummies out of trees by February 1. By March 15, blow or rake the downed mummies into the tractor row and destroy them by mowing or discing. Leaving the nuts on the orchard floor without destroying them does not provide acceptable control. I once saw 20% NOW damage across a 2,000 acre almond orchard because a major wind storm felled so many trees in early March that the grower couldn't get back into the orchard to destroy the mummies.

Shothole: So far, it looks like this could be a wet fall – the kind of weather when shothole can infect leaves. If fruiting bodies (black specks in the center of the “shothole” on leaves) can be found on inflected leaves in the fall, UC IPM Guidelines suggest using a fungicide active on shothole at petal fall next spring. If no fruiting bodies are found on fall leaves, then using a shothole material at petal fall is less critical. Growers may also consider using zinc sulfate foliar fertilizer in late October or early November to increase tree zinc fertility and defoliate trees to reduce shothole (and rust) inoculum levels next spring.

Rust: Rust inoculum can build on leaves in wet falls, and increase the risk of rust infection next spring. Consider dropping leaves (and fertilizing the tree) with zinc sulfate in late October/early November to reduce rust pressure next spring.

Weeds: A fall weed survey helps evaluate effectiveness of summer weed program and plant for winter/spring applications. More information on fall weed survey is available on the internet at:
<http://www.ipm.ucdavis.edu/PMG/C003/m003peweeds02.html>

Nutrition:

Potassium: An almond crop removes more potassium than any other mineral nutrient. Check summer leaf analysis results to determine if potassium fertilizer is needed. Fall is the best time to band potassium fertilizer onto the soil in flood or solid set sprinkler irrigated orchards and a good time to apply it to micro-irrigated orchards. (Solution grade dry or liquid potassium fertilizer can be directly injected into irrigation water in drip or micro-sprinkler irrigated orchards.)

Boron: A 2,000 pound almond nut crop removes as much boron from an orchard as is contained in 2 pounds of Solubor[®] (20% actual B). Bloom is the key timing to have adequate boron in almond trees. A Fall or “pink-bud” foliar boron spray is a proven way to increase flower boron levels. These sprays can increase almond yield in orchards where hull samples show deficient boron levels. The most commonly suggested rate is 2 pounds of Solubor[®]/100 gallons of water sprayed at 100 gallons/acre. **Note:** When Solubor[®] and zinc sulfate are tank mixed, a tan haze forms in the spray water. Research has shown that less B gets into the tree when this mixture is sprayed compared with an application of Solubor[®] alone or Solubor[®] + zinc sulfate + buffer. In recent research, 1 quart of Trifol[®] buffer per 100 gallons of water all but eliminated the tan haze and increased flower boron levels. Similar rates of other buffers should give similar results, but a jar test should be done before deciding what goes in the tank.

Nitrogen: As the leaves fall off trees, root nitrogen uptake drops to almost zero. Fall or winter application(s) of nitrogen to the soil are a waste of time and money. Urea applied to healthy leaves is readily absorbed into the tree, but benefits of a fall urea spray are questionable if summer leaf analysis shows leaf N levels are adequate to high.

New Plum Rootstocks for Almonds

The plum rootstock Marianna 2624 (M2624) has been commercially available for several decades and offers almond growers the advantages of oak root fungus resistance, the potential for successful plantings on heavier ground, and generally higher mature orchard tree count per acre. On the downside, this rootstock is not compatible with Nonpareil, throws many root suckers, and can show union mild etch symptom on several important varieties, especially Butte. A plum rootstock that delivers the benefits of M2624 without the problems and is compatible with Nonpareil would benefit almond growers in this region.

New plum rootstock for almonds are becoming available from nurseries, and several are being tested by John Edstrom (UC Farm Advisor, Colusa County) and Ted DeJong (Professor, UC Davis Plant Sciences Department) at the Nickels Soils Lab in Arbuckle. While it is too early to recommend these new rootstocks for entire new plantings, growers with an interest in plum rootstocks might want to consider planting a few test trees to learn about possible options to M2624. Rootstocks that are showing acceptable vigor in the Nickels plantings (listed from lowest to highest level of vigor) are Penta CM7, Hiawatha, Krymsk (Kuban 86), Cadaman, and Julior. Marianna 40 is also being tested by John and Ted. To my knowledge, Hiawatha and Krymsk are commercially available.

Young Almond Pruning Meeting Set for October 31

An almond pruning demonstration is planned for 11 AM on Wednesday, October 31, in District 10 north of Marysville. John Edstrom, UC Farm Advisor in Colusa County and Bill Krueger, UC Farm Advisor in Glenn County will be the guest pruners. The meeting will focus on pruning first and second leaf almond trees on peach rootstock, but differences in pruning peach vs. plum rooted trees will be discussed.

The meeting location is the old Victor Strain Ranch on the west side of Hwy 70. The meeting site is approximately 8 miles north of the stoplight in front of Marysville High School on Hwy 70. If you are traveling south on Hwy 70, the location is 7 miles south of the stoplight at East Gridley Road and Hwy 70. Bright yellow UCCE meeting signs will show where to turn off Hwy 70 into the orchard where the meeting will be held. The meeting will last no more than one and a half hours.

Important Almond Orchard Fertility Survey

Dr. Patrick Brown, Plant Nutrition Professor in the UC Davis Plant Sciences Department, is planning a major research project in almond orchard nutrition. To help the project match the needs of the California almond industry, Dr. Brown has put together a survey to find out what growers and PCAs think is needed to improve almond orchard nutrition/fertility. The survey is available on the internet at <http://education.ucdavis.edu/research/nutsurvey/> or from the UC Extension office in Yuba City. **Interested growers and PCAs are urged to complete this survey.** Please call Franz at 218-2359 with any questions.

SUBMITTED BY
FRANZ NIEDERHOLZER
UC FARM ADVISOR



How to Manage Pests

UC Pest Management Guidelines

Almond

Dormant Spur Sampling and Treatment Guidelines

(Reviewed 1/05, updated 1/05)

In this Guideline:

[How to sample](#)

[Publication](#)

[Treatment thres](#)

[Glossary](#)

[holds](#)

Dormant spur sampling is used to determine the need for a dormant treatment to control San Jose scale, European red mite, brown mite and European fruit lecanium. Spurs are the short shoots containing the flower buds. Dormant spur samples are taken once a year between mid-November and the end of January.



HOW TO SAMPLE

- Randomly select 35 to 50 trees from each orchard or plot to be sampled.
- Selecting major scaffolds randomly, clip 2 to 3 spurs from the inside of each tree's canopy for a total of 100 spurs.
- Clip the spur off at the base, making sure to include some old spur wood along with the past season's growth to detect parasite activities on scales.
- Using a hand lens or binocular microscope, examine 20 of the spurs for scales and mite eggs, and record observations in a sampling form. It is not necessary to count the number of individual insects or mite eggs present, just identify the pest and record whether it is present or not.
- Note how many scales are parasitized. A parasitized scale can be distinguished from a live scale by a small hole in the top of the scale covering. Parasitized European fruit lecanium scales turn black. If a large number of scales have been parasitized, minimize the use of insecticides during the growing season and only use those that are not harmful to parasites so that naturally occurring populations will not be destroyed.

TREATMENT THRESHOLDS

- If no scale or mite eggs are found in the initial sample of 20 spurs, no more spurs need to be examined.
- If 1 to 3 spurs are infested with scale, examine the next 20 spurs.
- If 4 or more spurs are infested with live scale, apply a treatment.
- Continue examining spurs until a decision is made to treat or not to treat using the treatment guidelines on the sampling form on the online version of this guideline.

Do not combine totals for the two scale species. For example, if 3 spurs out of a sample of 20 are infested with San Jose scale and 3 spurs contain European fruit lecanium, neither has exceeded the threshold and sampling should continue. Treat for brown mite and European red mite if 20% or more spurs are infested.

Use observations of percent infested spurs to help determine what pesticides to use following the guidelines below.

Dormant Treatment Decision Table (% Infested Spurs).

Pest	Threshold	Treatment
San Jose Scale	Below 20%	No Spray
	20 - 60%	Oil at 6-8 qals/acre
	Over 60%	Oil with insect growth regulator ²
European Fruit Lecanium	Below 20%	No spray
	Over 20%	Oil only
Overwintering Mite Eggs ¹ (European red or brown mite)	Below 20%	No spray
	Over 20%	Oil only

¹Oil works best closer to delayed dormant timing or on warmer days when eggs are respiring. Using dormant oil only does not provide adequate control for European red mites in Kern County.

²See [San Jose Scale](#) section for specific insect growth regulators.