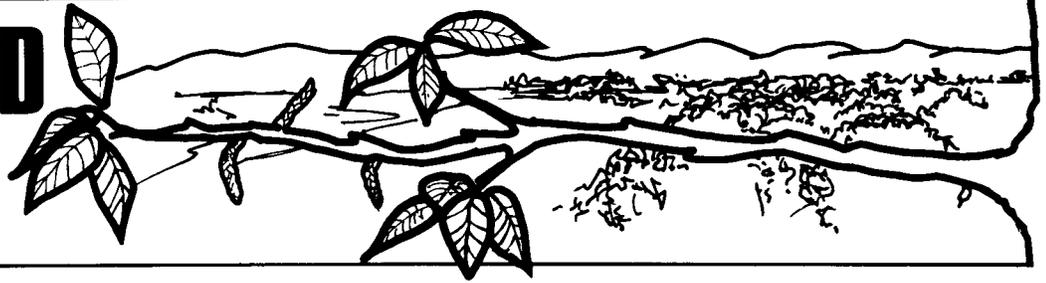




ORCHARD FACTS



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Butte/Glenn Almond/Walnut Day

The Butte/Glenn Almond/Walnut Day will be held in Chico at the Masonic Family Center on **Tuesday, February 3rd**. The program and registration form are included.

Off Type Chandler

As more and more young Chandler blocks start to come into production, we have been noticing more off type or "bulls". These are trees that will periodically have light or virtually no crop. This past growing season seems to be a year when symptom expression was particularly severe. The bearing pattern of these trees is erratic with on and off years occurring at unpredictable intervals. These trees will often be larger than non-bull trees presumably because of greater nutrients available for vegetative growth due to lighter cropping.

The cause of this problem is unknown. We do know that it is not a virus and that it is spread by graft wood, that is using wood from affected trees for propagation.

Over the life of the orchard, the production of these trees will be less than that of non-affected trees. The sooner these trees are discovered and something is done, the better. Usually these trees will not be noticed until the orchard begins to bear a significant crop. It has been observed this year in some 5th leaf orchards. Trees from the 5th to 9th year would be good candidates for topworking with wood from Chandler trees which are known to be free of the problem.

Topworking would probably be preferable to removing trees and replanting due to poor growth often associated with replants. With older trees the benefit of doing something will be lessened because there will be less time in the life of the orchard to recoup costs. Additionally, topworking older trees will be more difficult and expensive and replant problems can be worse.

Almond Rejects, 2003 in Review

Almond rejects due to insect damage were higher in 2003 than recent years. While different insects may have been involved in different areas, damage was higher than normal in both the Sacramento and San Joaquin Valleys. Reject levels for Nonpareil averaged 3.47% for the Sacramento Valley and 2.47% for the San Joaquin Valley (California Almond Board). In the Sacramento Valley, the predominant pest responsible for damage appeared to be either Peach Twig Borer (PTB) or Oriental Fruit Moth (OFM) while in the San Joaquin, Navel Orangeworm (NOW) damage was more common. PTB damage and OFM damage appear very similar and are difficult to reliably distinguish without actually finding a larvae or pupae associated with the damage.

This year the most effective control seemed to be a well-timed hull split spray. Most growers and PCAs report good results with a well-timed hull split spray. In the Pest Management Alliance (PMA) plot in Chico, best results were obtained with a treatment that included a hull split spray. This is contrary to previous years when hull split sprays made little difference. Dormant sprays alone had little effect on reject levels in this orchard.

Was this damage predictable? Growers and PCAs reported higher levels of shoot strikes than normal. In the Chico PMA project, a much higher number of shoot strikes were recorded this year than in the previous years of the study. In this orchard most of the strikes were from OFM. PCAs who regularly monitor for PTB egg laying activity reported higher than normal activity. From the above it looks it like we could have, at least, predicted the potential for higher reject levels. Monitoring shoot strikes or egg laying activity and keeping records from year to year may help make us aware of the potential for damage.

Was the weather a factor? In 2003 a hot July was followed by a cool August with rain at the beginning of August and again around the 22nd of August. This cooler weather during hull split delayed harvest and kept the hulls green and moist for an extended period. These conditions would be expected to be favorable to all types of insect damage and were difficult to predict.

Dormant sprays would be expected to control PTB, but not OFM because they do not overwinter on the tree. Note: PTB resistance to the pyrethroid esfenvalerate (Asana®) has been confirmed in the Hamilton City and Ord Bend area where this material was used several successive years. If PTB have developed resistance to Asana®, then dormant sprays with this material will be of little value for controlling PTB. Well timed hull split sprays (1% hull split) should help control PTB, OFM and NOW.

Almond Orchard Sanitation

In Glenn County we can usually count on the crows, wind and rain to reduce mummie (almonds left on the tree after harvest) counts in almond orchards. These mummies serve as the overwintering site for Navel Orangeworm (NOW). Research has shown that if mummie counts can be reduced to 2 or less per tree, non sanitized orchards are more than ¼ mile away and early harvest is practiced, sprays are usually not necessary. Observations indicate a high number of mummies in some local orchards, which, so far have not been cleaned up. Best control is achieved if the mummies are removed before Feb. 1st and destroyed by flail mowing or discing by March 15th.

Dormant Season Pest Management Options for Prunes and Almonds

The following was adapted from a newsletter article written by Franz Niederholzer, UC Farm Advisor in Sutter and Yuba Counties.

Dormant sprays cost money, and storm water runoff from orchards can contain pesticides (diazinon, Asana®, etc.) that pollute rivers and streams. The potential for spray drift is also greater from dormant applications compared to in-season spray(s). So, for economic and environmental reasons it is important to ask the following question of every block-- is a dormant spray needed? If the answer is "yes", then the next question is "what materials should go in the spray tank"? UC researchers have carefully examined the dormant season pests in

prunes and almonds, and come up with a solid recipe with conservative treatment thresholds (low risk of ignoring a problem) to help growers decide whether or not a dormant spray is needed and, if so, what should go in the tank. Data sheets for recording results are available from the UC farm advisors office in Orland or on the web at: <http://www.ipm.ucdavis.edu/PMG/r606900511.html>. Here are the steps to take:

1. Randomly select 35-50 trees from each orchard or plot to be sampled.
2. Collect 2-3 spurs randomly from the inside and outside 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 identify San Jose scale parasitism.
3. Using a hand lens or binocular microscope, examine 20 of the spurs for scales, mite eggs and aphids eggs (in prunes), as well as parasitized scale. Refer to UC IPM manuals, the IPM website at <http://www.ipm.ucdavis.edu> or Publication 3426, Tree Fruit Pest Management Cards, for help with identification. It is not necessary to count the number of individual pests, just identify the pest and record whether it is present or not on the monitoring form. Record results on data sheet. Info on the sheet will help you decide if checking another 20 spurs is needed to make a spray decision.
4. Add together the total number of spurs marked in each pest column and record in the total box.

DORMANT SPUR SAMPLING THRESHOLDS FOR COMMON DORMANT SEASON SPRAY TARGET PESTS IN PRUNE AND ALMOND

Pest	Prune	Almond
San Jose Scale	Below 10%: No spray 10-20%: use OIL at 4 - 6 gals/acre Over 20% Options: 1) OIL with organophosphate (diazinon, Supracide, etc.) 2) OIL with Seize	Below 10%: No spray 10-20%: use OIL at 4 - 6 gals/acre Over 20% Options: 1) OIL at 8 gals/acre 2) OIL with organophosphate or 3) OIL with Seize
European Fruit Lecanium	Below 24% - No spray Over 24% - Oil only	Below 24% - No spray Over 24% - Oil only
Overwintering Mite Eggs	Below 40% - No spray Over 40% - Oil only	Below 40% - No spray Over 40% - Oil only
Aphid eggs (mealy plum aphid Or leaf curl plum aphid)	1 Aphid egg - Consider Options (see Dormant Treatment Guide later in newsletter) 0 Aphid eggs - Review Past History (see Dormant Treatment Guide in newsletter)	Not a pest in almonds
Peach Twig Borer	No effective dormant monitoring program. <u>Not usually a significant pest in dried plums.</u> Bloom sprays or May spray give as good or better control than dormant spray (alone) without risking surface water pollution from dormant spray materials.	No effective dormant monitoring program to determine need for dormant spray. <u>Need to control pest in almonds is usually based on last year's grade sheet and current year (in season) trapping and shoot strike numbers.</u> Bloom sprays, May spray, and/or hull split spray give as good or better control than dormant spray alone without risking surface water pollution from dormant spray pesticides but may increase secondary pest pressure.

Illustrated guidelines to prune orchard pest monitoring are on the web (complete with downloadable forms) at <http://www.ipm.ucdavis.edu/PMG/C606?m606wc03.html> .

Delayed Dormant Treatment Decision Guide for Prunes

Purpose: To determine the need to apply a delayed dormant spray.

Delayed Dormant Treatment Decision Guide for Prune Orchards				
Aphid Orchard History Unknown Due to Past Dormant Sprays? ¹	Orchard History or Spur Sample Indicates Aphids? (No or Yes)	Scale Above Threshold	"Reduced Risk" Treatment Options	"Conventional" Treatment
Yes		No	Low rates of insecticides without oil. OR 2X oil* (once at green tip and 10 days later). OR In-season oil.* OR In-season insecticide	Insecticide + oil
Yes		Yes	Low rates of insecticides + oil	Insecticide + oil
	No	No	Nothing	Insecticide + oil
	No	Yes	Oil (low pop ²) OR Insecticide + oil (high pop ²)	Insecticide + oil
	Yes	No	Low rates of insecticides without oil. OR 2X oil* (once at green tip and 10 days later). OR In-season oil.* OR In-season insecticide	Insecticide + oil
	Yes	Yes	Low rates of insecticides + oil	Insecticide + oil
* Oil alone is not effective for leaf curl plum aphid once the leaves are curled and will only suppress mealy plum aphid populations				

¹ To help determine the history of aphids in a dormant treated orchard:

- 1) Carefully observe trees throughout the orchard during growing season for the presence of any aphids. OR
- 2) Leave a few edge rows untreated and observe trees during the growing season for the presence of aphids.

² Low scale population is when 10 – 20 percent of the spurs have live scale.

High scale population is when more than 20 percent of the spurs have live scale.

Treatment Materials and Rates:

See accompanying "UC IPM Pest Management Guidelines" at (<http://www.ipm.ucdavis.edu>).

Planning The Future of UC Cooperative Extension

UC Cooperative Extension (UCCE) is part of the Agriculture and Natural Resources Division of the University of California, also known as UC ANR. The whole division is shrinking under University budget cuts. As part of a “continuing effort to plan the Division’s future direction and programs” under these conditions, there will be several meetings around the state in late January and February where those who use and work with UCCE can air their opinions of how and what the new organization should look like directly to UC administrators. If you value the work of UC Farm Advisors and UCCE, please take the time to tell UC administrators how you think UC can continue to serve you in the future. The closest meetings will be in Davis (February 26) and Redding (February 10). Registration is required to participate. Registration and further information on the listening sessions are available on the web at <http://groups.ucanr.org/directions/> .

New IPM Manuals Available

New IPM manuals are currently available for Almonds (2002) and Walnuts (2003). These manuals are completely revised and include comprehensive information on each crop pest, including identification pictures and tips, monitoring methods, treatment thresholds, biological controls and other managements techniques.

Growers who want to keep abreast of innovative technologies for almond or walnut pest management will want these manuals. They are available through our office or can be ordered on line at <http://anrcatalog.ucdavis.edu>.