



Pomology Notes



April/May 2004

It was the hottest March on record in the Sacramento Valley. There was a small break in the weather at the end of the month, but if warm weather returns as we enter April, here are some things to consider:

- Trees should be using water much faster than they do in most years at this time. DON'T LET TREE WATER STRESS SNEAK UP ON YOU! MONITOR tree and/or soil water stress regularly from now through the fall.
- Also, MONITOR earlier than usual for spider mites.
- Warm weather will also accelerate development of other insect pests (peach twig borer, aphids, etc.). This means that "traditional" spray timings will probably be too late this year. MONITOR early for these pests.

MEETINGS:

April 20	Irrigation Management Meeting	Yuba City*
April 29	Yuba/Sutter Prune Field Meeting	District 10
May 6	Pull or Plant? Orchard Economics Program	Yuba City
May 11	Nickels Field Day	Arbuckle

*Put on by USDA NRCS (Natural Resource Conservation Service). Please call 674-1461 ext. 3 for more information.

ORCHARD PRACTICES TO CONSIDER IN APRIL/MAY, 2004

ALMONDS:

- Check orchard water status, irrigate as needed.
- Monitor peach twig borer, oriental fruit moth and San Jose scale traps
- Control peach twig borer in young orchards (if no dormant or Bt at bloom spray(s) applied) to avoid shoot strikes that stop shoot growth.
- Evaluate cropload and plan the fertilizer program for the season based on that cropload and last year's leaf analysis. See the N-budget on the internet for help with nitrogen fertilizer plan at: http://fruitsandnuts.ucdavis.edu/almond/html/almond_n_model.html
- Monitor for diseases (alternaria, shot hole, rust, and scab)
- Control suckers on plum rooted trees (see article below)

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PRUNES:

- Check orchard water status, irrigate as needed. Don't allow water stress early in the season. This could lead to fruit end cracks later in the summer!
- Monitor for aphids starting **NOW** and prune rust starting May 1. Early heat will accelerate insect development.
- Check cropload and thin if needed. There will be a shaker-thinning demo at the prune field meeting on April 29. In addition, there is a shaker-thinning review available from UCCE office in Yuba City, 142A Garden Hwy or call Franz at 822-7515.
- Evaluate 2004 crop N needs using IPFP nitrogen budget (call Franz for more info at 822-7515).
- Use cropload measurement and leaf analysis results from last year to decide if potassium fertilizer – either by potassium nitrate spray or injected with irrigation water – is needed.
- Monitor at 400 DD after biofix to determine if PTB control is needed in season. Use information in IPFP Binder available at UCCE office in Yuba City. Early heat will push insect development.
- Control root and crown suckers (see article below)

ROOTSTOCK SUCKERS ON MARIANNA 2624 PLUM-ROOTED ALMONDS AND PRUNES

Root and crown suckers interfere with orchard practices, present herbicide damage risk later in the season, and may reduce crop yields by diverting energy and nutrients from the tree. Plum rootstocks, especially Marianna 2624, regularly produce root and/or crown suckers and we know of no practice that can change this reality. What is left to growers and PCA's is to manage the problem. There are no easy answers available. The following are some general guidelines to consider in a sucker control program.

DON'T SET YOUR ORCHARD UP TO HAVE SUCKERS.

If you plant an orchard on plum rootstock, plant the trees so that the bud union ends up a couple of inches above ground level. Use an herbicide strip in the tree row and when you cultivate stay far enough out from the tree that you avoid cutting roots. This is important since Marianna 2624 roots that are detached from the tree will put up suckers in an attempt to stay alive independently. Don't disc both ways for weed control early in the life of the orchard if you plan to switch to one-way discing or no-till orchard floor management later in the life of the orchard. Cross discing cuts more roots and this increases the rate of suckering. Finally, planting trees on berms may increase the amount of suckers produced, although berm planting has other definite horticultural advantages in certain situations.

CONTROL SUCKERS EARLY IN THE SEASON:

Physical control: Cutting out suckers by hand is effective but expensive. Some growers in the San Joaquin Valley have used flame burners to literally burn-back young tender suckers.

Chemical control: Only Gramoxone (in prunes) and Gramoxone and Rely (in almonds) are labeled specifically for sucker control. Repeat applications will be necessary, as these products are contact materials. Some growers have noticed that undiluted UN32 fertilizer applications have burned back suckers, but this is only a short term setback. The use of nitrogen fertilizer (a plant growth stimulant) on suckers may actually increase sucker regrowth. Finally, specific use of a fertilizer as a pesticide is an illegal use of the material.

Glyphosate or glyphosate tank-mixed with 2,4-D for strip weed control may also burn back suckers. Directed glyphosate and/or 2,4-D spot sprays are not labeled for sucker control. Growers should be aware that tree damage or death can result from absorption of glyphosate or 2,4-D through green leaves or, in the case of 2,4-D, if excess material is applied to portions of the soil. Whenever chemicals are used, it's important for growers to use the material properly and to follow the label.

There are no easy answers for sucker control in plum rooted orchards. The long term answer is probably new rootstocks. (M40 has shown promise as a prune rootstock that produces limited suckers.) However, a “non-suckering” plum rootstock is some years off and will not help growers with plum rooted orchards in the ground right now.

PRUNE END CRACKING *MANAGING THE PROBLEM*

There are two distinct types of prune fruit cracking – end cracking and side cracking. Side cracking occurrence is related to weather, irrigation, and climate at the time fruit begins rapid volume growth (swelling) in late June and early July. End cracking occurs anytime severely water stressed prunes are irrigated (except late in the growth season). Side cracking will be discussed in another newsletter. End cracking is the focus of this article.

End cracking of prunes can be a costly problem for growers. Cracked fruit will contribute to a substandard grade after harvest and drying. Also, brown rot infections of cracked fruit add to the off-grade in a fruit lot.

Work by UC researchers in the early 1960’s showed that prune fruit end cracking resulted from the irrigation of severely water stressed trees at almost any time during the growing season. The only exception was late in the season when fruit were nearing maturity and starting to show purple color. In that study, regular irrigations, particularly early in the growing season, didn’t eliminate end cracking, but it was the difference between 3-7% cracked fruit and 43-50% cracked fruit. The early irrigated fruit was also larger in diameter than the fruit irrigated only in mid or late season.

It is important to note that, in 1960, the year of the study was conducted near Marysville, “early” irrigation occurred in late May/early June. Who knows when “early” will be this year -- following the warmest March on record!

THE answer to avoiding disastrous fruit end-cracking is monitoring the water status of the orchard **STARTING NOW** and irrigating when needed. A range of tests can be used including 1) a

pressure bomb to check tree water status, 2) checking soil water status with tensiometer, gypsum block, hand feel, etc., or, 3) checking both soil and tree water levels.

Just when is irrigation “needed”? Definite irrigation thresholds have been developed for mature prunes (and almonds) using the pressure bomb. These thresholds are available in the Prune IPFP Binder (copies available for \$30 + tax at the UCCE office in Yuba City) or on-line at <http://fruitsandnuts.ucdavis.edu/crops/prune-pressure.shtml#baseline>. Generally speaking, irrigation is needed when soil moisture levels drop below 50-70% of plant available soil water. Refer to manufacturer’s guidelines when trying to match this number to soil measurement instrument readout.

Finally, UC research also indicates that late season irrigation cut off (mid-July or later) saves growers money in irrigation pumping/labor costs plus reduces dry away. So, the picture that emerges is that prunes need adequate water from bloom into July, but less to no water is needed in the last month or so before harvest.

Bottom Line:

- This was the hottest March on record.
- Prune trees are using water much faster than they did last year at this time.
- Irrigating severely water stress prunes causes prune end cracking from early in the season until late July.
- Check your soil or tree moisture status weekly through the season starting **NOW**.
- Irrigate as needed to minimize costly end-cracking.

THINNING PRUNES: LESS CROP = MORE \$?

It looks as though large prunes will be worth more, a lot more, than small prunes this year. Since drying costs are the same, growing big fruit will pay and growing small fruit will cost growers. Careful pruning, pest management, fertilizer, and irrigation programs are all key parts of an effective program to grow a good crop of large prunes. Shaker

thinning is another important practice to consider in prune production. Shaker thinning can reduce crop size and increase fruit size, thereby earning growers better returns.

It is too early to tell if the 2004 crop will be a large one in the Yuba and Sutter County area. However, it is not too early to get ready to check to see if thinning is needed. If you are not already familiar with shaker thinning of prunes, please consider educating yourself on this important practice. There

will be a demonstration of prune shaker thinning at the Prune Field Day on April 29, and a publication on shaker thinning is available from the UCCE office in Yuba City at 142A Garden Hwy (822-7515). Rich Buchner, UCCE Farm Advisor in Tehama County and Bill Krueger, UCCE Farm Advisor in Glenn County, will be there to share their experiences with shaker thinning. Shaker thinning has become standard practice in Butte, Tehama, and Glenn Counties when crop set exceeds the capacity of a block to size the fruit. I hope to see you there.

CHILLING HOURS THIS WINTER

Generally speaking, chilling hour accumulations on the east side of the Sacramento Valley this winter were similar to the last few years. However, I think I see signs of incomplete chilling in bud break patterns in prunes, pears, and apples.

Year	Chilling Hours (<45°F) from Nov 1 to Mar 1 (Nicholas CIMIS)	Chilling Hours (<45°F) from Nov 1 to Mar 1 (Colusa CIMIS)	Chilling Hours (<45°F) from Nov 1 to Mar 1 (Durham CIMIS)
2001-2002	863	923	904
2002-2003	920	785	829
2003-2004	822	755	777

PRUNE AND ALMOND UPDATE AVAILABLE ON-LINE

Subscribe to weekly Yuba/Sutter orchard update, which will be on-line by the time this newsletter reaches you. Please subscribe (on the web) if you would like to be notified when this is updated through the season.

PULL OR PLANT? ORCHARD ECONOMIC OUTLOOK MEETING IN YUBA CITY

UC Cooperative Extension and UC Davis Ag Issues Center will be sponsoring a day-long program on the economic outlook for orchard crops in the south Sacramento Valley. The meeting will be held in Yuba City on May 6 at the Veteran’s Building on Veteran’s Memorial Circle. University and industry speakers will present information on key issues affecting profitable production of walnuts, prunes, cling peaches, and almonds including biological “choke points” (i.e. soil type, frost, disease management, etc.), production costs, trends in tree crop production in China, as well as the international marketing outlook for those crops. THIS MEETING IS A “MUST” FOR ANYONE INTERESTED IN THE FUTURE OF TREE CROP PRODUCTION IN THE REGION.

The meeting cost is \$15 per person and will include lunch with vegetarian options. Pre-registration is required. Registration will be accepted by fax, phone, e-mail to pabagley@ucdavis.edu, and by credit card. A program agenda and registration form will be mailed out this month.

SPRING PRUNE FIELD MEETING -- AGENDA

April 29, 2004

Thandi Orchard, Ramirez Road, District 10
(see enclosed map)

- 8:30 a.m. Coffee and registration
Refreshments courtesy of California Dried Plum Board.
- 9:00 Shaker thinning demonstration/discussion
Rich Buckner, UCCE Tehama County, and Bill Krueger, UCCE Glenn County.
- 9:30 Spring nutrition review (nitrogen, potassium, etc.)
Bill Krueger, UCCE Glenn County, and Franz Niederholzer, UCCE Yuba/Sutter
- 9:45 Spring pest monitoring review
Carolyn Pickel, UC IPM, Rich Buchner, UCCE Tehama County,
- Aphids
 - Mites
 - Peach twig borer and leafrollers
 - Scale
 - Bacterial canker
 - Rust
 - Brown Rot
- 10:45 Irrigation scheduling with the pressure bomb
Rich Buckner, UCCE Tehama County
- 11:15 Demonstration of "smart" sprayer and orchard sprayer calibration.
Franz Niederholzer, UCCE Yuba/Sutter Counties
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TWO FRIENDS RETIRE

Wilbur Reil, UCCE Farm Advisor in Yolo/Solano Counties, and Bill Olson, UCCE Farm Advisor in Butte County, two guys who worked long and hard to help support California tree crop growers and, as a result, local economies, will retire this spring. I would like to thank both Bill and Wilbur for their tremendous example(s) of what UC Cooperative Extension farm advisors can accomplish as horticulturists, educators, and mentors. Thanks, Bill! Thanks, Wilbur!

FRANZ NIEDERHOLZER
UC FARM ADVISOR



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