

University of California

Cooperative Extension

Contra Costa & Alameda Counties

CROP CURRENTS

From: Janet Caprile, Farm Advisor

BACK FROM SABBATIC LEAVE

by Janet Caprile

It's been quite awhile since you last received a Crop Currents newsletter. That's because I have just recently returned from a very productive 9 month sabbatic leave in which I took classes in Agricultural Statistics and Computer Science at UC Davis, explored the internet as an educational and research tool and took a trip to the Australian and New Zealand apple growing regions. I'd like to thank Farm Advisors Bob Mullein, Paul Verdegaal, Joe Grant and Mick Canevari in San Joaquin County for filling in for me while I was gone.

As a result of my studies I should be able to design more effective research projects to help solve local agricultural problems. I am also adding a "Useful Websites" column to my newsletter for those of you who are currently using the Internet. For those of you who aren't and would like to be, I'm planning to include a session on *Using the Internet to Obtain Agricultural Information* at my winter Agriculture meeting. I'm also planning a session on *Growing Pink Lady Apples*. I visited some of the oldest plantings of Pink Lady in SE Australia and learned quite a bit about growing and handling this new variety.

I'm in the process of finalizing the date and presentations for my winter Agriculture meeting. If there are topics you would be interested in having addressed, please let me know. My phone numbers and e-mail address are included above. Note the new address for the main office in Pleasant Hill. I'd also like to let you know that I have resumed my Monday afternoon office hours (1:30 to 4:30 pm) in the Brentwood office. Stop by and say hello.

1997 TOMATO TRIAL RESULTS

We have been conducting processing tomato variety trials in Brentwood for the past few years as a part of the statewide trials supported by the California Tomato Research Institute. Many thanks to Bob Mullein and Stan Nunn who continued these tests last season, while I was on sabbatic leave. The following table summarizes this years trial results for Brentwood. If you would like a copy of either the Brentwood or statewide trial results for this or past years, give me a call.

1997 EARLY SEASON PROCESSING TOMATO VARIETY TRIAL

Ron Nunn Farms - Brentwood

REPLICATED VARIETIES¹

Variety	Yield (Tons/Acre)	Agtron Color	⁰ Brix	Brix Yield (Tons/Acre)
Red-Set-Go 28	49.9	24.25	4.08	2.036
CXD 171	49.7	25.00	5.13	2.550
H-3044	48.8	23.75	3.78	1.845
Sun 6235	48.6	25.00	4.78	2.323
APT X 410	47.4	21.75	4.88	2.313
HyPeel 45	46.4	25.00	5.45	2.529
RPT 1108	46.2	25.75	4.78	2.208
APT 266	46.2	24.00	5.25	2.425
PX 16313	43.9	26.50	4.53	1.989
FMX 1080N	43.6	25.50	4.48	1.953
BOS-8066	43.6	23.25	4.38	1.910
Sun 6117	42.3	23.75	4.90	2.073
CXD 187	42.1	23.75	4.38	1.844
FMX 1071N	41.9	26.50	4.18	1.751
H-9280	38.7	22.50	3.95	1.529
LSD @ 5%	5.6	1.71	0.86	
CV =	8.6%	4.9%	13.1%	

¹ Average of 4 replications

OBSERVATIONAL VARIETIES

Variety	Yield	Agtron Color		Brix Yield
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	(Tons/Acre)		⁰ Brix	(Tons/Acre)
Brigade	51.8	22.00	4.70	2.435
HMX 4879	49.4	29.00	4.20	2.075
H-8892	48.3	23.00	4.60	2.222
Peelmech	47.1	26.00	4.40	2.072
APTX 403	46.7	25.00	4.50	2.102
HMX 5887	46.1	24.00	4.50	2.074
Sun 6133	43.5	22.00	4.80	2.088
FMX 1115 NP	42.0	26.00	4.80	2.016
H-9661	41.2	24.00	4.50	1.854
ENP 519	39.9	23.00	4.40	1.756
NemaBrix	36.8	25.00	4.90	1.803
Red Century 32	34.1	23.00	4.90	1.671
Super 528	33.5	23.00	5.00	1.675
HyPeel 287	33.2	23.00	4.70	1.560
H-8773	33.1	22.00	4.10	1.357

DORMANT SPRAYS FOR DECIDUOUS TREE CROPS

Dormant sprays are one of the most efficient and economical pest control treatments of the season. You can control a wide variety of pests with a minimum of risk to trees, people, and beneficial insects. You have the advantage of a broad range of usable materials and excellent, unobstructed, spray coverage. There is usually a conveniently wide window for application (December to prebloom budswell). However, this year, with the threat of El Nino and a wet winter looming ahead, you may want to apply your dormant sprays earlier rather than later to make sure you have time to put them on.

Dormant sprays are important in controlling peach twig borer, mites, scale, aphids, many leafrollers, pear psylla and various other insects. They are essential in controlling peach leaf curl and shothole diseases. Zinc deficiencies can also be corrected with a timely dormant application.

Controlling Insects & Mites: Usually a dormant oil plus an Organophosphate (OP) combination is the most effective control for the insect and mite pests. Diazinon, Lorsban, and Supracide are the most commonly used OP materials. All are similarly effective in achieving 96-97% control. Supracide is effective and often used without oil as it can cause damage to some sensitive crops (like walnuts) when used with oil.

There has been concern over the dormant use of OP insecticides in recent years as they can drift from the target site in our winter fog. Fortunately, oil can be fairly effective when used alone against most mites, scale and aphids *but not against Peach Twig Borer (PTB)*. To control PTB without an OP, use two BT sprays at bloom. I'll have more information on this in my spring newsletter. You may still want to apply a dormant oil to guard against mites, scale, and aphids.

Controlling Diseases: There are several fungicides that can be used to control Peach Leaf Curl (needed on all peaches and nectarines) and Shothole (needed on apricots, peaches and nectarines). Bordeaux and fixed coppers (both organically acceptable) as well as Bravo and Ziram are the most commonly used materials. An application at leaf fall should control both these diseases. If disease pressure is high and/or if the winter/spring has been particularly wet, an additional application may be necessary just before budswell for Peach Leaf Curl and during bloom and early leafout for shothole.

Check the label for compatibility information before you put any fungicide in the tank with your oil or your OP. Don't forget to consider the pH and add a buffer if necessary. Bordeaux can raise the pH of the tank mix to 12 and Kocide or other copper hydroxides can raise it to 8. These pH's will *greatly* reduce the effectiveness of all our common OP materials.

Rates: A typical rate for the more common narrow range oils (superior or supreme) is 4-8 gallons/acre. Concentrated or lower volume sprays (100GPA or less) have been shown to be just as effective as dilute sprays (400 GPA or more) when applied correctly.

Application: Correct application means that sprays go on in a ground rig traveling no more than 2.0 MPH. If you're not confident that your tractor speedometer is correct, count trees. If you are going 2 MPH, you should cover 176 feet in 1 minute. You can use the chart below to gage your speed.

Speed		Tree Spacing			
		10'	16'	18'	20'
(MPH)	(Feet/min.)	(trees traveled/minute)			
1.00	88	8.8	5.5	4.9	4.4
1.25	110	11.0	6.9	6.1	5.5
1.50	132	13.2	8.3	7.3	6.6
1.75	154	15.4	9.6	8.6	7.7
2.00	176	17.6	11.0	9.8	8.8
2.25	198	19.8	12.3	11.0	9.9
2.50	220	22.0	13.8	12.2	11.0

In large trees, 2/3 of the spray material should come out of the top half of the spray manifold. Don't forget to check for nozzle wear - wettable powders are harder on the nozzles than other

materials. The spray needs time to dry before it rains and, similarly, sprays shouldn't be applied to wet trees (damp from fog is OK).

Cautions: Walnuts and plums can be sensitive to oils. The later oils are applied, the less likely that damage will occur, so delayed dormant sprays are suggested for these trees. Delayed dormant sprays are generally more effective against mites, aphids, and leafrollers in all the tree crops. However, if the winter is very wet, you need to be prepared to get into the orchard as soon as there is a break in the weather if you wait for the delayed dormant period (February to budswell).

Also, keep in mind that any tree can be damaged by oil if it is water stressed. So make sure the soil is moist to 2-1/2 to 3 feet and don't make an application soon after a period of freezing weather or drying winds.

GRAPE ROOTSTOCKS FOR CLAY SOILS

There has been a tremendous increase in the grape acreage in this area over the last few years. In Contra Costa, much of this acreage is going in on heavier soils that have not been planted in grapes before. The rootstock choices on these heavy soils are going to be different than on the sandy soils more typical in the traditional Oakley viticulture area. The following is a brief description that should help you select an appropriate rootstock for these heavier soils. All are resistant to phylloxera.

Drought Tolerant Rootstocks: These are probably best used on dry farmed or infrequently irrigated sites to avoid excess vigor.

St. George (V. rupestris): is quite vigorous and can reduce crop yields or produce poor quality grapes due to excessive vigor if grown on moist, fertile soils. It's best used with limited water on clay soils.

110R (V. Berlandieri x V. rupestris): is vigorous, has good drought tolerance and is adapted to many soils. A good general use rootstock. It is a little less vigorous than St. George on most soils.

1103P (V. Berlandieri x V. rupestris): has the same parentage as 110R and should be similarly vigorous and drought tolerant; however, there is limited experience in California with this rootstock so it is difficult to know how it will perform under a variety of conditions.

Rootstocks Needing Irrigation:

5C (V. Berlandieri x V. riparia): has good vigor on moist, clay loam soils. It's a little less vigorous than 110R. It is resistant to root knot and dagger nematode but susceptible to lesion, citrus, ring, and X. americanum nematodes.

5BB (V. Berlandieri x V. riparia): prefers moist, clay loam soils with regular irrigation. It has similar parentage to 5C but has less California experience.

3309C (V. riparia x V. rupestris): is for deeper soils with regular irrigation. It is less vigorous than 110R but more vigorous and productive than 5C. It is highly susceptible to nematodes.

101-14 (V. riparia x V. rupestris): is a lower vigor stock for deep soils when small vine size is desired. It needs regular irrigation and is less vigorous than 3309C.

WINTER N.O.W. CONTROL

All nuts - walnuts, almonds, pistachios - can be damaged by Navel Orange Worm (NOW). It is a very difficult pest to control during the course of the season. However, a winter sanitation program has proven to be highly effective in preventing problems for the upcoming season.

This worm overwinters in the mummy nuts left in the orchard after harvest. The wet, windy winter weather and the crows will help to clean the nuts (with their worms) out of the trees. However, if there are more than 2-3 mummy nuts left per tree by late winter, you'll need to remove and destroy them. A shaker or a pole works well to remove the mummies. A mower or chopper works well to crack the nuts and destroy them. Discing is *not* an effective way to destroy the nuts. The worms can still emerge from the whole buried nut.

USEFUL WEBSITES

UC Statewide Integrated Pest Management Project [<http://www.ipm.ucdavis.edu>]

This is a great site. You can access all our Pest Management Guidelines (these are the ones with the current pest control recommendations) . You can see pictures of the pests. You can directly access the weather information from our local CIMIS stations (and any other station in the state). You can use the ET information to help you schedule your irrigations. And you can use the max-min temperatures to calculate degree days for a number of pests - in fact, they have a degree day calculator on site that you can use. If your not sure of the insect thresholds, there is a pest model database to check. They also provide a link to Cal EPA's Department of Pesticide regulation if you need to check on registration status of any material. And there's more. Explore the rest for yourself.

UC Fruit and Nut Research and Information Center [<http://fruitsandnuts.ucdavis.edu>]

This site has lots of information for fruit and nut growers. It includes information on at least 48 individual crops; it has a section on orchard statistics, a current calendar of pomology events and a list of available publications. It also has a monthly topic column for growers (this month it's politics) and consumers (this month it's unusual fruit). It also offers site links and search engines for many more, difficult to find pomology sites.

UC Vegetable Crop Research and Information Center [<http://vric.ucdavis.edu>]

This site has information for all our major California commodities - there is basic production, cost of production, post harvest information and more. It also has a calendar of events of interest to vegetable growers. For a fun diversion, take the virtual tour of California Production and check out the vegetable joke site (the potato joke is my contribution). They also have great links to other sites.

PUBLICATIONS

The following 3 publications are available from our central publications unit: University of

California, DANR Communications 1-800-994-8849.

How to find Agricultural Information on the Internet

This handy manual is for farmers, ranchers, gardeners, consultants and anyone else who wants to save time and get results on the internet. It walks you through real life examples of how farmers and others have used email and the World Wide Web to answer questions to improve their business effectiveness and their bottom line. 1997.

Publication 3387, 100 pp. \$12.00 + (shipping, handling, tax)

Pesticide Safety: A Reference Manual

This manual was written for farm owners, managers, and employees and can be used as a study guide for Ca. DPR's Private Applicator Certificate examination. It covers a variety of farm profiles and tells how to read pesticide labels, how to mix and apply pesticides, the hazards of pesticide use, and how to handle pesticide emergencies. Includes review questions, appendixes, a glossary, illustrations and an index. 1997.

Publication 3383, 115pp. \$7.00 + (shipping, handling, tax)

Walnut Production Manual

This long awaited revision of our 1985 classic "Walnut Orchard Management" is the only complete guide available covering all aspects of English walnut production. More than 60 UC authors give you the latest information on walnut varieties, hedgerow planting, and agricultural chemicals, and cover everything from the crop's ancient origins to its increasingly global market. Lots of color photos. 1997.

Publication 3373, 328 pp., \$35 (soft cover)

\$50 (hardcover) + (shipping, handling, tax)

Grape Rootstock Flash Cards

This is a set of laminated cards that have excellent photos of leaves and fruit and written descriptions of the major grape rootstocks in use in California today. *Available from Foundation Plant Materials Service, University of California, Davis, CA 95616-8600, (530) 752-3590 for \$40.00 (includes tax, shipping, handling)*

The following publications are available from my office. Call me for a copy 510-646-6540:

Processing Tomato Cost Study for Yolo County

This is the most recent UC Processing Tomato cost study available in California. It was prepared for Yolo County but has much information of use to growers in this area. It

includes tables on: Costs/A, Costs and Returns/A, Monthly Cash Costs/A, Annual Equipment, Investment and Business Overhead, Hourly Equipment Costs, Ranging Analysis, Cost and Returns/Break-even Analysis.

Follow-Up Care of Grafted Trees

This is a brief 1 page publication outlining proper techniques in maintaining grafts to promote good take. It also includes a troubleshooting section to help diagnose problems.

Financial Management Notes

These are the most recent a in a series of excellent, brief publications from our Financial & Risk Management Specialist, Steve Blank. Call my office for a copy at 510-646-6540.

- o Is Retirement Possible in Agriculture? 4 pp.
- o Producers Must Recognize Risk Sources and Develop a Plan. 4 pp.
- o Financial Ratios as Management Tools. 4 pp.

CALENDAR

Ca. Alfalfa Symposium

Dec. 10-11, Visalia

This annual conference is sponsored by the UC Alfalfa Workgroup. There will be sessions on the dairy industry's impending alfalfa supply shortage, new equipment, soil, pests, irrigation, forage quality, risk analysis, and alfalfa improvement. Contact Marilee Schmidt at 539-752-1703 or mdschmidt@ucdavis.edu.

Pest Science Conference

Dec. 16-17, UCD, Freeborn Hall

Presentation by UC Faculty and Farm Advisors on current advances in the practical advances of pest management for practitioners in the fields of vegetables, orchards, vineyards and ornamentals. 10 hours PCA credit. Contact UNEX at 1-800-752-0881 to register.

Tomato Day

Jan 7, UC Davis

A half day of presentations by UC Faculty and Farm Advisors on current tomato research. Contact the Vegetable Crops Research and Information Center at 530-754-9618 or vric@ucdavis.edu.

Train-the-Trainer Program: For Trainers of Pesticide Handlers and Field Workers.

Jan 7, Winters - English

Jan 8, Winters - Spanish

These workshops qualify individuals as trainers as required by recent changes in the Ca. Ag. Code and provide information and materials as prescribed by the Fed. Worker Protection Standard. This may be the final year that these workshops are offered by UC. E-mail to diane.clarke@email.ipm.ucdavis.edu or call 530-752-5273.

Ca. Apple Day*Jan 14, Fresno*

An industry update of research and trends. Free. Begins at 8 am. To be held at the Centre Plaza Holiday Inn, 2233 Ventura Ave. Contact the Ca. Apple Commission for details 209-456-0900.

Association of Applied Insect Ecologist 32nd Annual Conference*Jan 18-20, Pacific Grove (Asilomar)*

This is a group of entomologists, researchers, PCA's and others interested in IPM. This year's theme is "Scents, Cents & Sense - Issues in Modern Pest Management". Contact John Plain at (916) 441-5224.

Pistachio Day*Jan 20, Radisson Hotel, Visalia*

Contact Louise Ferguson (louise@uckac.edu or 209-646-6541) or Mark Freeman (mwfreeman@ucdavis.edu or 209-456-7265) for information.

Ecological Farming Conference*Jan 21-24, Pacific Grove (Asilomar)*

Over 50 workshops on all aspects of sustainable agriculture as well as farm tours, a marketing connection event, organic wine and food tasting and more. Contact the Committee for Sustainable Agriculture 408-763-2111.

Plant & Soil Conference*Jan 21-23, Sacramento*

This conference is sponsored by the Amer. Soc. of Agronomy and the Ca. Fertilizer Assoc. This year's theme is "Agricultural Challenges in an Urbanizing State". Includes sessions on sewage sludge, dormant sprays, nutrient management, farmscaping, pest management, farming marginal soils. Contact Steve Oakley at 805-746-3366 or FAX to 805-746-6905.

Unified Wine & Grape Symposium*Jan 21-22, Sacramento*

This 4th annual symposium provides practical information regarding global trends, challenges and issues facing the industry, an equipment show, wine tasting and more. Co-sponsored by the Amer. Soc. for Enology and Viticulture (ASEV) and the Ca. Assoc. of Winegrape Growers (CAWG). Call 530-753-3318.

Cherry Research Review*Jan 26, Stockton*

This morning meeting is a review for growers of current cherry research funded by the Ca. Cherry Advisory Board. It will be held at the Best Western/Stockton Inn on Waterloo Rd. just off Hwy 99. Contact Joe Grant at UC Cooperative Extension for details 209-468-2085

Olive Day*Jan 27, Sacramento Convention Center*

A half day meeting followed by lunch. UC researchers will address irrigation, fertilization, pollination, oily film development, mechanical pruning & harvest evaluation, cost studies. Contact me to preregister at 646-6540.

Winegrape Production Short Course*Jan 26-28, Sacramento*

This course is taught by UC Farm Advisors and faculty and combines reviews with updates serving the needs of both new and experienced vineyard operators. It covers all aspects of production including grape physiology, vineyard establishment, vineyard management, pest management and harvest. Contact UC Extension at UC Davis: 1-800-752-0881.

Recent Advances in Codling Moth Management

Feb 5, Sacramento

This meeting is an update for apple, pear, and walnut growers on current strategies for codling moth management including the impacts of FQPA and resistance on control. 8 am - 4 pm at the Elks Lodge, 6446 Riverside Blvd., \$18 includes lunch. Sponsored by UC Cooperative Extension. Contact Chuck Ingels at 916-875-6913 or caingels@ucdavis.edu.

Tulare Farm Equipment Show

Feb 10-12, Tulare

Contact Gary Shulz at the International Ag Center 209-688-1751

Wine Tech/Grape Tech

Feb 10-12, Sacramento

Contact 203-854-9137 FAX

Hope you find something of interest in this issue.

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