



TREE AND VINE NOTES



DECEMBER 2002

2002 North San Joaquin Valley Cling Peach Seminar

December 11, 2002

8:00-Noon

Stanislaus County Agricultural Center
Service and Crows Landing Roads, Modesto

Sponsored by the University of California Cooperative Extension and the Cling Peach Board

1.5 Hours of Continuing Education Credit Pending
No attendance fee required.

8:00 **Registration**

8:30 **Program begins**

- **Progress Report on Stanislaus County Research Trials.**
 - Update on peach replant trial
 - Update on rootstocks for cling peaches in bacterial canker sites
Roger Duncan, UCCE Farm Advisor, Stanislaus County
- **The Role of Microorganisms and Soil Health**
Dr. Rebecca Drenovsky, Dept. of Land, Air, and Water Resources, UC Davis
- **Cling Peach Board Business**
 - **Discussion of Industry Research Needs**
 - **Board Member Nominations**
- **Overview of the Peach Pest Management Alliance Project**
Walt Bentley, UC IPM Advisor, UC Kearney Ag Center
- **Review of Pruning Principles (classroom discussion)**
Dr. Ted DeJong, Dept. of Pomology, UC Davis
- **Pruning Demonstration of Various Peach Training Systems**
Dr. Ted DeJong, Dept. of Pomology, UC Davis

12:00: Tri-tip lunch hosted by the Cling Peach Board

SALINITY PROBLEMS INCREASING by Maxwell Norton

I am observing an increase in salinity symptoms in orchards in Merced County. Salinity has always been a concern on soils west of the SJ River but in the last few years we have been seeing problems east of the river also. This is a very bad trend. Salinity problems take a long time to develop and even longer to cure.

Suspected salt problems are easily confirmed with a soil and water test performed by an agricultural lab. Contact them first about how to collect and handle the samples. Your Pest Control Advisor can help you take the samples in such a way to give meaningful results. Always take separate composite samples from different depths. For example: sample from several sites at 18", several sites at 30" and several sites at 48". Often times there will be low salt accumulations in the top foot but at three or four feet salt can be accumulating to damaging levels. A soil EC greater than 1.0 dS/m indicates that salts are accumulating. Above 1.5 you will probably see a yield reduction. Irrigation water should be below 1.0 also. At only 1.1 and above you may see a yield reduction.

One cause is the conversion of many orchards to micro-irrigation. All well water contains at least one type of salt. We add additional salts when we add fertilizer. Compost and manure can carry a big salt load. If we add only enough water to satisfy the evapotranspiration demand of the ground cover and trees/vines, salt accumulates in the root zone. We must add additional water to leach salts below the root zone. The additional water added to leach salts out is called the leaching index. When you have your water tested, the lab can calculate the index for you.

When calculating the amount of water that actually goes into the soil, you must include losses due to evaporation. Micro sprinklers and micro jets can have significant losses of water due to evaporation – especially when operated on hot, breezy days. When water evaporates into the atmosphere, the salts do not leave with it - they are deposited on the soil. Do everything you can to reduce evaporative losses. Do not operate micro jets and micro sprinklers on hot windy days. Solid-set sprinklers are not as bad in this respect because the application rate/hour is much higher and the droplet sizes are much bigger.

Some soils cannot be leached because of a physical barrier such as a silt pan, clay lens or hard pan. If this is the case, all you can do is try to minimize the amount of salt you add to your fields. Avoid manure and compost. Use synthetic forms of fertilizer that have a low salt index – generally the simple forms. Before purchasing mixed fertilizers, ask your salesperson about low salt alternatives. Remember that sodium salts are not the only types of salts that add to the total salinity problem.

Gypsum and other soil amendments will not cure a total salt problem. Gypsum is only useful when you have excess sodium and the ability to leach the sodium below the root zone. What we are trying to do when we apply gypsum is to displace sodium with calcium on the clay particle's exchange sites and leach the sodium out. If you cannot leach below the root zone you only make the problem worse by adding a bunch of amendments. If your pH is too high, you can adjust it downward with the addition of soil sulfur. Lowering the pH is not the same as leaching out salts.

If your wells have increasing salt levels, investigate whether you can buy low-salt water from an irrigation district. The additional filtration costs will be repaid by better yields in the future. You may be able to change the well casing to pull water from another strata that has less salt in it. Talk to a couple well companies to find out. Most irrigation districts monitor water quality from all sources within their boundaries. Talk to the engineering department and ask for suggestions.

Because of global climate change in general and specifically a warming trend of the Pacific Ocean, very long-term forecasts call for less rain and snow in the western US. This will make salinity problems in the arid west even worse. In dry winters, it can be beneficial to apply winter irrigations to leach salts if you have water available and the water is of good quality.

Summary: 1. Minimize the amount of salt you bring into your field, 2. Minimize evaporation when you irrigate by the choice of application methods and how you operate sprinklers. 3. If you can, leach salts below the effective root zone, 4. Look for an alternate water source if there is one.

Additional reading:

Western Fertilizer Handbook Salt Index Table B-22

UC DANR publications available at your local Cooperative Extension office:

Salts in California's Water Supply #21381 \$1.50

Distribution of Saline and Alkaline soils in the SJV: a Map of Valley Soils #21511 \$3.50

Agriculture Salinity and Drainage #3375 \$25.00

Chemigation in Tree and Vine Microirrigation Systems #21599 \$5.00

Micro-Irrigation of Trees and Vines #3378 \$25.00

Managing and Modifying Problem Soils #2791 \$2.00

Managing Compacted and Layered Soils #2635 \$1.50

Video: Agricultural Salts and Water Quality V91-A \$15.00

Almond Orchard Management #3364 #30.00 see chapter 5 – Salinity Management

FINAL GRAPE CRUSH REPORT OUT

Go to www.nass.usda.gov/ca and click on the Final Grape Crush Report. Of most interest are sections 5, 6, 8 and 10. They show what grapes were sold for and at what sugar levels in our district, which is 12.

SURVIVAL AND GROWTH OF FALL TRANSPLANTED POTTED ALMOND NURSERY TREES COMPARED TO SPRING TRANSPLANTED BARE ROOT TREES

By Wilbur Reil, UCCE Yolo & Solano Counties

Almond trees on peach-almond hybrid rootstock have been difficult to transplant and grow if the bare root trees are planted in mid to late spring from nursery trees stored in cold storage. In some cases losses have been 20 to 40 %. Many years on loam and silty clay loam soils the ground is too wet to plant earlier than late spring. There are also times that growers do not complete ground preparation in the preceding year to have an ideal planting bed. Therefore, sometimes the ground must dry out in the spring to complete soil preparation before planting. One nursery currently has been growing nursery trees in containers and selling the potted trees for transplant into the orchard at any time of the year. I started a trial 4 years ago to evaluate planting potted tree transplants in the fall compared to winter or spring planted bare root nursery trees.

The trial is on Class I silty clay loam in Yolo County. The orchard site previously was planted to almonds. The experimental design is a randomized complete block of five replicates of four trees per replicate. There are two treatments (potted vs. bare root trees) and three varieties (Nonpareil, Sonora and Butte). The five-month-old growing potted trees were planted in September 28, 1998 and the bare root 5/8 inch dormant trees were planted in late January 1999. All trees were headed at 36 to 38 inches. At the end of the first growing season the length of the three longest shoots that were selected for the primary scaffolds of the tree was measured. Results are shown in Table 1.

Table 1. Average length of each of the 3 longest scaffolds per tree at the end of the first year of growth.

	Potted		Bare Root	
	cm.	ft.	cm.	ft.
Nonpareil	164.3	4.6	134.5	4.4
Butte	135.2	4.4	136.2	4.5
Sonora	131.2	4.3	125.8	4.1
Average	135.2	4.4	132.2	4.3

During the winter following the first, second, third and fourth growing seasons the trunk circumference was measured at 14 inches above the ground. The measurement was then converted to trunk cross sectional area. Results are shown in Table 2.

Table 2. Average square centimeters of trunk cross sectional area measure approximately 14 inches above ground level at the end of each growing season.

<u>Year</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Nonpareil	17.8	59.7	110	191	15.1	55.2	104	194
Butte	14.9	63.2	121	221	14.6	62.0	121	116
Sonora	18.3	66.8	130	241	13.1	56.5	119	215
Average	17.0*	63.3*	121	218	14.3	57.9	112	212

*Statistically significant – LSD .05

Yield was taken on the Nonpareil and Butte in 2002. Sonora bloomed about 5 days before Nonpareil and set a very small crop due to the poor bloom overlap. No yield was harvested from the Sonora trees. Yield data is shown in Table 3.

Table 3. Average pounds production per acre for 200 from the Nonpareil and Butte Cultivars.

<u>Year</u>	<u>2001</u>	<u>2002</u>
Nonpareil	226	218
Butte	466	435
Average	346	327

Growth measurements in October 1999 showed no statistical differences between the potted trees and the bare root trees in shoot length. The total length of the 3 longest scaffold limbs showed that the potted trees had grown an average of 406 cm. (13.3 feet per limb) for the bare root trees. Average potted tree trunk cross sectional area in 1999 was statistically significant at 17.0 sq. cm. compared to 14.3 sq. cm. for the bare root trees showing that the potted trees had attained a larger trunk thickness. Trunk cross sectional area was also significantly larger for the potted trees (63.3 sq. cm.) in 2000 compared to the bare root trees (57.9 sq. cm.). In 2001 and 2002 the trunk cross sectional area showed no significant differences between the potted and bare root trees (121 vs. 112 and 218 vs. 212 sq. cm.)

Growth and height of the potted and bare root trees look the same. You cannot view the trial and separate the nursery-potted trees from the bare root trees.

While there was a slight numerical difference there was no statistical significant difference between yields. Butte yields were the highest showing the excellent pollination they received from the Nonpareil trees in the trial. Sonora yield was very disappointing. The earliness of bloom with no Nonpareil pollen available for several days after they started blooming probably caused the crop failure.

One bare root tree died whereas no potted trees died due to transplanting. The bare root trees were not placed in cold storage. Planting of the bare root trees occurred shortly after digging from the nursery. Originally the trial was set up to compare the potted trees planted in September to bare root trees that were going to be planted in late March or April, after the bare root trees were dug and placed in cold storage. There was a window in January 1999 where weather was ideal for planting so the trial was modified to take advantage of the good planting conditions. This window does not occur every year in Yolo Co.

On an adjoining block the grower planted several rows of potted nursery trees and also block the grower planted several rows of potted nursery trees and also several rows of bare root trees that had been in cold storage approximately 3 weeks until they were planted in mid-March. Survival was observed on a random 200 trees in each section. While it is not a replicated trial the observation showed that 4 trees out of 200 died in the bare root section (2%) and no trees died in the potted tree section.

Based on these trials it appears that trees planted as potted trees in the fall performed equally with bare root trees planted during the winter. While the potted trees grew slowly the two months before going dormant they grew very vigorously the following spring. Trunk diameter after one year was equal to the bare root trees even though the potted trees had a small trunk caliper at planting. Some of both the potted and bare root trees needed to be staked to maintain a straight trunk. Planting potted trees gives another option to growers especially when planting on soils that cannot always be planted during the winter months due to rain or extremely wet soils.

2002 Tri-County Almond Meeting

Tuesday, December 10, 2002

Madera County Conference Center, 700 E. Yosemite Ave, Madera

From the north take 4th street exit, go south on I Street, and east on Yosemite, 145 East

From the south, take Gateway exit, go north until Yosemite 145, then go east.

8:00 AM-12:00 Noon

8:00 a.m.	PCA and continuing education credits sign-up
8:15 a.m.	Almond leaf scorch disease diagnosis Dr. Brent Holtz, UCCE Farm Advisor, Madera County
8:30 a.m.	Regional Almond variety trials Dr. Bruce Lampinen, Almond and Walnut Specialist, UC Davis
9:00 a.m.	Weed control in almond orchards Ron Vargas, UCCE Farm Advisor & County Director
9:30 a.m.	Ten Lined June Beetle Identification & Control Rich Coviello, UCCE Farm Advisor, Fresno County
10:15 a.m.	The effect of Kaolin (Surround) on Carmel bloom, fruit set, and yield Dr. Brent Holtz, UCCE farm advisor, Madera County
10:30 a.m.	Pre-plant fumigation for nematode control Dr Mike McKenry, Nematology Extension Specialist
11:00 a.m.	Wood chipping almond brush and its effect on the nematodes, soil aggregation, and soil nutrients Dr. Brent Holtz, UCCE farm advisor, Madera County
11:30 a.m.	Ground squirrel and gopher control Mark Freeman, UCCE farm advisor, Fresno County

2 hours of PCA, CCA and Private Applicators Credit have been requested. A **free lunch** will be served by the Madera County 4-H, sponsored by the UC, Engelhard, and Dow Agro Sciences.

Lunch reservations and information:

Sandra at 559-675-7879 ext 201

SAN JOAQUIN VALLEY GRAPE SYMPOSIUM PROGRAM

Wednesday, January 8, 2003

C.P.D.E.S. Hall

172 W. Jefferson Avenue - Easton, California

7:30 a.m. - 8:30 am.	Registration - Coffee, juice, and donuts available
8:30 a.m. - 9:00 a.m.	Rural Crimes: Keeping the Farm Safe John Tilley, <i>Sgt., Fresno County Sheriff's Department</i>
9:00 a.m. - 9:30 a.m.	Citrus Peelminer: An Emerging Pest of Grapes? Kris Godfrey, <i>CDFA Environmental Research Specialist</i>
9:30 a.m. - 10:00 a.m.	Imposing Water Deficits to Improve Wine Quality and Reduce Cost, Terry Prichard, <i>UC Cooperative Extension Specialist</i>
10:15 a.m.-10:45 a.m.	Wine Grape Varieties and Clones Suitable for the San Joaquin Valley Pete Christensen, <i>UC Cooperative Extension Specialist,</i>
10:45 a.m.-11:15 p.m.	Update on Vine Mealybug Biology and Control Kent Daane, <i>UC Cooperative Extension Specialist, UC KAC</i>
11:15 p.m.-12:00 p.m.	Factors Influencing Wine Grape Quality in the SJV Nick Dokoozlian, <i>UC Cooperative Extension Specialist, UC KAC</i>

Meeting and Proceedings: _____ x \$10/each = \$ _____
Meeting, Proceedings, and Lunch: _____ x \$23/each = \$ _____
Amount Enclosed: \$ _____ Check No. _____

REGISTRATION TO INCLUDE LUNCH-MUST BE RECEIVED BY JANUARY 3, 2003

(Late Registration Per Person: \$15 For Meeting And Proceedings Only. Lunch Is Not Included.)

Please enclose a check payable to: **UC REGENTS**

Mail to: San Joaquin Valley Grape Symposium
1720 S. Maple Avenue

Information: 559/456-7285

NORTH SAN JOAQUIN VALLEY WINEGRAPE SEMINAR

Thursday 13 Feb 2003 8:30 to Noon

Turlock Irrigation District Auditorium

Vine mealy bug
Controlled deficit irrigation
Delayed spring growth syndrome
Chemigation
Mechanical pruning
Pierce's disease

More information to follow.

**Using Low-Sulfur Mildew Control Programs
To Improve Natural Control of Mites and Leafhoppers In Grapes**

Tuesday 14 January 8:30-11:00 a.m.
Viticulture and Enology Research Center
California State University, Fresno
2360 E. Barstow (west of the stables)

Background: Some raisin growers have found that by using little or no sulfur in their mildew program, they can usually eliminate the need for chemical treatments of mites and leafhoppers. The reason is natural biological control. The result may be a healthier vine. Come hear a discussion of pros, cons, economics, and methods.

Effects of sulfur on Pacific mite and western predatory mite in vineyards.

Michael Costello, Cal Poly State University, San Luis Obispo

Case histories of grape growers using low-sulfur programs to control mildew. Devin Carroll, Bio Ag Services.

Effectiveness of alternatives to sulfur. George Leavitt, U.C. Cooperative Extension, Madera.

Using Kaligreen in mildew control programs. Jay Irvine, Monterey Chemical. Elite and Flint in mildew control programs. Tim Sitton, Bayer Crop Sciences.

Trilogy, an organic alternative in mildew control. Toby Nairn, Certis.

Sovran and Pristine in a grape disease program. Todd Burkdoll, BASF.

Admittance is free, but space is limited to 70.

2.5 hours of P.C.A. and C.C.A. Credits applied for.

Free parking available in: Lots N and O (south side Barstow, across street from VERC, near Ag operations) and Lot P (off Barstow and Maple).

For reservations call Devin Carroll at 559-291-1715

WINEGRAPE SHORT COURSE

Intensive short course on all aspects of winegrape production.

4-6 February at UC Davis

To have a complete program sent to you call 800/452-0881

CHERRY SHORT COURSE

Intensive short course on all aspects of cherry production in the SJV.

25-27 March 2003 in Stockton

To have a complete program sent to you call **800/452-0881**

CONGRATULATIONS TO OUR LOCAL QUALITY AWARD WINNERS

The CA Canning Peach Association awarded Tom Nakashima, Grewal Brothers, OZ Ranch and Luchessa Ranches Quality Awards for 2002. Recognized for their precision crop estimating skills were Lloyd Narita, Sol Mark and Eric Spycher!

