

**UNIVERSITY OF CALIFORNIA ~ SUTTER/YUBA COUNTIES  
COOPERATIVE EXTENSION**

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# **ORCHARD NOTES**

**NOVEMBER / DECEMBER 1997**

## **PEACH PRUNING MEETING**

Thursday, November 20, 1997

10:00 a.m. - 12:00 p.m.

Clark Road, Live Oak

Ted DeJong, Pomologist from UC Davis, will discuss pruning concepts and demonstrate pruning techniques on two and five-year-old cling peach trees. Following the pruning techniques meeting, David Waters, a local grower and farm equipment designer, will show his dual pruning tower called Orchard King. The dual tower was originally designed to prune peach trees but also works in all deciduous fruit trees and hedgerows.

The meeting will begin in John Micheli's two-year-old peaches on Clark Road east of Highway 99 in Live Oak. We will cross the highway and continue the meeting and dual pruning tower demonstration in Taisha Thiara's five-year-old Andross peaches on Clark Road west of Highway 99. Park either on Clark Road by Micheli's orchard or on the cement slab in front of Thiara's orchard. In case of rain, please call our office for further instructions. Please call our office for special accommodations.

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## **ALTERNATIVES TO DORMANT INSECTICIDE SPRAYS: USING Bt**

Tuesday, November 25, 1997

2:30 p.m. - 4:00 p.m.

Farm advisor's meeting room 142

GARDEN HIGHWAY, YUBA CITY

The dormant spray season is fast approaching. Before spraying your usual dormant insecticide this winter, plan to attend this meeting and find out about using Bt sprays at bloom instead. Peach growers are the target audience for this meeting although prune and almond growers who want to learn about using Bts to replace dormant organophosphates or pyrethroids are welcome. Refreshments will be served. PCAs note: 1.5 hours of classroom credit has been approved.

~ ~**Program** ~ ~

**2:30 Introduction** - *Janine Hasey, UC Farm Advisor, Sutter/Yuba Counties*

**Bts - What They Are and How They Work** - *John Edstrom, UC Farm Advisor, Colusa County*

**Bt Demonstration Studies, Monitoring and Effects on Secondary Pests** - *Carolyn Pickel, IPM Advisor, Sacramento Valley*

**1997 Peach Biorational Program and Results** - *Janine Hasey, U.C. Farm Advisor*

**My Experiences with Bt** - *J.R. Thiara, Grower*

**3:40** Displays by Companies with Bt Products

**4:00** Adjourn

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## UPCOMING MEETINGS

California Apple Day - January 14, 1998 in Fresno

Peach Meeting - Save January 22, 1998 for the annual Tri-County Peach Meeting held in Yuba City.

Sutter/Yuba/Colusa Walnut Meeting -Sometime in February 1998 in Yuba City.

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## PEACH DISEASES

With El Nino and all the predictions for a wet winter, you will not want to miss the fall spray for shothole. As a new Farm Advisor here in 1983, another El Nino year, I vividly remember what twice our normal rainfall did for peach diseases. Peach leaf curl, shothole and Phytophthora crown and root rot was common place that spring.

For Shothole, apply a protective fungicide, such as a copper containing material, Ziram or Bravo at leaf fall. This spray protects against twig infections which are of greatest concern in peaches. The fungus survives on infected twigs and buds and is spread by water splashed spores during prolonged fall to midwinter rains. Small purplish spots develop on the twigs which later turn brown, affected bud scales turn gummy and black, and twigs may dieback over winter.

This late fall spray will also help control peach leaf curl. This fall spray in addition to the winter spray will be especially important to controlling leaf curl if El Nino rainfall predictions come true.

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## **PHYTOPHTHORA DISEASES**

This past year, I have provided updates on the disease situation in the Arboga flood zone. There was a high incidence of aerial Phytophthora and waterlogging damage depending on duration of flooding and tree species. Recently we noted reactivation of some aerial Phytophthora cankers on prune tree branches. I will continue to monitor cankers on the various tree crops over the winter. Additionally, outside the flood zone, there have been many walnut, peach and apple orchards with Phytophthora crown or root rot and trunk canker (walnut) this past season. Some orchards were in light, sandy loam soils although it's more typical to see problems on heavier soils. Phytophthora needs prolonged saturated soil conditions to cause root or crown rot. Other predisposing factors are trees planted too deep or berms made after planting so the rootstock is below the soil level. Anytime there is wet soil up against the upper portion of the rootstock (which should be above the soil level) or even worse, the scion, the probability of crown rot developing is greatly increased. The time to put berms in is before planting, especially now in the fall for those putting in new orchards in 1998. That gives them time to settle.

Provide for the best drainage possible before planting and plant trees correctly to help alleviate Phytophthora problems. It will pay off in heavy rainfall years.

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## **THE DORMANT SPRAY**

The traditional dormant spray is an oil spray mixed with an insecticide applied during the dormant season. Typical insecticides used are the organophosphates, diazinon, supracide or lorsban or the pyrethroids asana, pounce or ambush. The insecticide targets peach twig borer without harming the beneficials that are in a winter resting state. The oil spray controls overwintering mite eggs, young scales, and provides a carrier for the insecticide to control the older scales and overwintering aphids. Synthetic pyrethroids, however, do not provide good control of scales.

Since the early 1990's, the use of dormant sprays has been reexamined. First there was concern about organophosphates harming red-tail hawks; more recently, dormant spray residues believed to be harmful to aquatic organisms were detected in the Sacramento watersheds.

We started studies on the insect bacteria, *Bacillus thuringiensis* (Bt), as an alternative to dormant insecticides in 1990. We found Bt was less harmful to the environment and beneficial insects, and controlled peach twig borer. The Bt program consists of applying oil during the dormant period and two Bt sprays during bloom with brown rot fungicides. This program has been successful locally in cling peaches and almonds. Come to the Bt meeting on November 25 to get more information on using Bt sprays.

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## **WALNUT VARIETIES AND ROOTSTOCKS**

Walnut plantings are on the rise in Sutter and Yuba Counties. What variety followed by what rootstock should I plant are frequently asked questions. We all would like the perfect variety and rootstock but they don't exist. Each grower has to look at varietal attributes, their individual situation and needs, and the market when selecting a variety; soil, drainage, water quality, diseases and variety selected all figure in when choosing a rootstock.

Varieties - Chandler is the most planted walnut variety and has been for several years. It is a semi- upright moderately vigorous tree that is late leafing and late harvesting. The large, light colored kernels are sold as shelled stock. Because many growers have all the late harvested walnuts they can handle, they are looking for a similar variety that harvests earlier than Chandler but is also later leafing than Vina. That variety is Howard.

Howard is a small to a medium tree with upright vegetative growth and low to moderate vigor. Because of it's size, we recommend closer spacings for Howard compared to Chandler. It is also well suited to hedgerow plantings. Howard is harvested before Hartley. Nut quality is good and there is some interest in marketing the nuts as in-shell. Our sources on Howard's performance include the U.C. Davis variety block, a 16-year-old conventional planting in Butte County, hedgerow trials in Yolo and Tulare Counties and a hedgerow planting on marginal soil at the Nickels Soil Laboratory in Colusa County. Locally, other than several recent plantings, there were a couple of Howard orchards planted in mid-1980 in Sutter County. One was planted into a bad nematode situation, but the other was planted in good river bottom soil on black rootstock. Although planted as temporary trees in a 40' x 40' Hartley planting, the Howards remain. As young trees, they grew well and had early, heavy crops. They also produced a good crop this season. In the Colusa County study, Howard has performed well on Paradox rootstock where soils are marginal. For most situations though, we recommend planting Howards on better soils and Paradox rootstock and pruning heavily to maintain vigor.

Our newest variety Tulare, is a moderately vigorous to a vigorous upright tree that leafs out a few days before Howard and Chandler. It does not require a pollinator. Nut size is large and color can be very good. It is well suited to hedgerows and locally has produced early, heavy crops in a young hedgerow planting. It is sensitive to early autumn frost damage and is susceptible to husk fly.

The above are very brief summaries on three of our newest varieties. I encourage anyone who is deciding what variety to plant, to get the reports and publications we have on these and other varieties from our office. Please call me for

any additional information or reports on tree growth, yield and nut quality.

Rootstocks - The main rootstocks planted in our area are Paradox hybrid and northern California black walnut. English walnut rootstocks are mainly planted in counties where walnut blackline disease is more of a problem than it is here. All walnut rootstocks need drainage and adequate aeration but they vary in their sensitivity to adverse soil conditions. Paradox hybrid is the rootstock most in demand because of its vigor and better tolerance to heavy or poorly drained soils and to phytophthora root and crown rot. In our area I have observed over the years that it is also more tolerant of oak root fungus than is black rootstock. Oak root fungus problems often occur with root and crown rot disease which is much more common on black rootstock than on Paradox hybrid. The dead tissue from the rotted roots is easily invaded by oak root fungus although it can also attack healthy roots. The main downfall with Paradox hybrid is its susceptibility to crown gall which is a big problem in our counties. I know of growers who will no longer plant Paradox hybrid because of this disease. It is fine to plant black rootstock where the soil is deep, well drained and not subject to high water tables or flooding and expected tree vigor is good. If planting on more marginal soils or where water tables can be high, I still recommend Paradox hybrid in spite of crown gall problems. If you plant black rootstock in these situations don't be surprised if your trees die of root and crown rot problems. You may be trading one disease for another.

What about yield on black rootstock vs. Paradox hybrid? I have nine years of data comparing Chandler in a conventional planting on various black rootstocks with Paradox hybrid. This walnut rootstock trial is in the Bear River bottoms on a sandy soil. Although tree size is the same between the Paradox hybrid and Northern California black rootstocks, yield efficiency (nuts per unit of plant size) is significantly lower in the black rootstock compared to the Paradox hybrid. This similar trend of higher yield efficiency in Paradox hybrid is often seen in other county studies where the two rootstocks are compared, although there are exceptions.

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## **HERBICIDE LIST ADDITION**

Please add the following update to the 1997 registration status of herbicides list that was sent in last month's newsletter: 2,4-D (Dri-clean) - registered in apple, pear, stonefruit, nut orchards and grapes.

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## **NEW PUBLICATIONS**

Walnut Production Manual - As mentioned in my last newsletter, these manuals are available from our office. This complete and easy-to-understand book about walnuts, takes the reader from the origin of the walnut through all aspects of production and processing, variety selection, rootstock characteristics, propagation, orchard planning and design, genetics, marketing, economics and more. Illustrated with photos and drawings, it also includes a glossary and full index. Paper bound: \$35.00 Hardbound: \$50.00

How to Find Agricultural Information on the Internet - This handy manual is for farmers, ranchers, gardeners, consultants and scientists who want to save time and get results using the Internet. The book is aimed at both beginning and intermediate Internet users, and walks readers through real-life examples of how farmers and others have used E-mail and the World Wide Web to answer questions to improve their business effectiveness. Cost \$12.00, now available from our office.

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**HAPPY HOLIDAYS!** I would like to thank all of you who supported our office this past year, especially research cooperators and those who hosted meetings. Your time, efforts and monetary support are all appreciated.

Submitted by,

**JANINE HASEY**

UC Farm Advisor

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