



# Orchard Notes

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## Walnut Observations/Updates

*Drought Stress* ~ Some 'Howard' and 'Chandler' orchards in early to mid-October displayed symptoms of yellowing leaves in the tree's interior and shriveling of the hull. These are symptoms of drought stress. The orchards were flood irrigated and the water had been cut off in early September. Walnut trees still use a high amount of water in September. Also, the early part of October was warm with north winds causing increased water use and also delaying harvest. We checked the water status in one orchard with symptoms using a pressure bomb by comparing trees with green leaves vs. trees with yellowing leaves before it rained. In all cases, the yellowing trees showed severe water stress while the trees that were still green were less stressed although still in need of water. In these orchards, irrigation was stopped too early in anticipation of harvest. A plan to meet the walnut tree's need for water in September in combination with long-term weather forecasts and percent hullsplit to estimate harvest date will help avoid drought stress by withdrawing water too early before harvest.

*Botryosphaeria Blight vs. Branch Wilt* ~the disease ***Botryosphaeria blight*** which is a severe problem in pistachios has been found in a few area walnut orchards in 2003 and 2004. Symptoms include branch dieback that can be found anywhere on the tree. Cutting away the bark will reveal a canker and fungal fruiting bodies called pycnidia that have white cell walls when young that turn black with age.

The orchards where this disease was found were all 'Chandler' variety and had heavy infestations of walnut scale. To control the problem, prune about two inches below the canker margins into uninfected wood.

Mark your calendar for this  
Upcoming Meeting

### Annual Dormant Spray Meeting

Tuesday, December 7<sup>th</sup>  
Thursday, December 9<sup>th</sup>  
142 Garden Highway, Yuba  
City  
Agricultural Building

Topics Include:

Alternatives to the dormant  
spray in peaches and prunes,  
adjuvants, and calibrating your  
equipment to avoid drift and  
save money.

Three private applicator hours  
are available.

Call Rosemary Pierson at  
(530) 822-7503 to make  
reservations.

The program will be in the next  
"Orchard Notes".

In contrast, **branch wilt**, which is also a fungus disease, will usually appear as a dead branch on the southwest side following a hot spell. The fungus spores usually invade bark through sunburn wounds. The fungus spreads within the branch to other limbs and can extend into the trunk. The thin outer bark layer peels away revealing black sooty spores. Dead limbs should be completely removed after harvest to stop disease spread within the tree and orchard.

Visit our website at <http://cesutter.ucdavis.edu> to view pictures of these two walnut diseases.

**Walnut Husk Fly** ~ Husk fly can be a real moving target at times. Sometimes when you think you know the “hot spots” in your orchard, it will pop up on the opposite end. Even worse, you may suddenly find husk fly damage at harvest in an orchard where there hasn't been damage before or at least for a long time. There are some reports of husk fly damage where no husk flies were found on traps. In a husk fly research trial this season, we didn't pick up the early season husk fly numbers on our traps that we should have based on when stings occurred. Traps should be placed high in the tree, have plenty of stickem and either a packet or tube of ammonium carbonate that is recharged or changed as needed. The usual trap placement timing is by July 1<sup>st</sup>, but there are several orchards where they come out earlier and need to be hung by June 1<sup>st</sup>.

**Navel Orangeworm** ~ There are scattered orchards around our area that have worm damage in the harvested crop that is navel orangeworm. Since most grades only provide “worm damage” and do not distinguish between codling moth and navel orangeworm, take your own

sample from unharvested orchards to determine which worm you have. It will help you in next years control strategy. With navel orangeworm, infested nuts will have frass and webbing and may have more than one worm. To distinguish from codling moth, the navel orangeworm larva has a crescent-shaped mark on each side of the second segment behind the head.

**Nematodes and Planting Walnuts** ~ In a screening trial with UC Extension Nematologist Mike McKenry, we compared seedling Paradox and seedling Northern California black rootstocks to own-rooted ‘Chandler’ and own-rooted ‘Vina’ in root-lesion (*Pratylenchus vulnus*) infested soil. All were found to be highly susceptible to *P. vulnus*. Most infection occurred in the youngest lateral roots, especially in their fleshy root tips. This means the most susceptible part of a walnut root is the terminal one foot of it. This is why it is so important to get walnut trees off to a good start by planting in nematode free soil. The trees need to grow enough root mass that is less susceptible before nematodes migrate back into the root zone. This helps to avoid the tree stunting that occurs if young walnut trees are infected with this root-lesion nematode.

**Correcting Potassium Deficiency** ~ In our counties, potassium deficiency in walnuts is rare with the exception of certain areas like Nicolaus where visual symptoms are frequently seen. Nevertheless, we recommend annual testing of this essential macronutrient in the July leaf sample. Over 1.2% potassium is considered adequate in leaf tissue samples taken in July. Walnut leaf tissue levels below 1% are considered deficient and soil treatments of potassium become necessary. In silt-loam and heavier clay soils, an initial application of 1,500 pounds

of potassium sulfate or potassium chloride (only where the chloride ion can be leached beyond the root zone) per acre should be banded or drilled into the soil on each side of the tree. This generally gives correction for several years. Fertilizer blends that contain potassium are not recommended because the small amount of potassium they contain becomes "fixed" in the soil and is unavailable to the tree roots.

### **Retrieve Articles Online**

There are several articles you may find useful that are in my October 2003 "Orchard Notes" that I'm not including in this issue. They include:

- "Orchard Planting Preparation"
- "Minimizing Frost Damage to Walnuts"
- "Timing Peach Pruning"
- "Protecting Surface Water and Cover Crops", (includes link to cover cropping in walnuts)

These can be accessed at <http://cesutter.ucdavis.edu> where you can also subscribe to the newsletter on line and view photos. As usual, for those who do not

have internet access, you may request a copy of last year's newsletter from our office.

### **Publications**

Sample Costs to Produce Cling Peaches, Sacramento and San Joaquin Valleys - 2004, Extra-early Harvested Varieties ~  
Available from our office or on the web at <http://www.coststudies.ucdavis.edu>

*Walnut Hedgerows* ~ There are quite a few young hedgerow walnut orchards or hedgerows that growers are planning to plant in our counties, particularly to 'Howard'. The publication The Walnut Hedgerow Planting System is very useful for planning, planting and training hedgerow orchards. It is available from our office for \$2.00.

### **Kiwifruit Registration**

The fungicide Elevate became fully registered in California for postharvest use to prevent Botrytis fruit rot last month. The supplemental label must be in the user's possession at the time of application.

### **Herbicide Charts**

The 2004 registration status of Herbicides in Trees and Vines and Susceptibility of Weeds to Herbicides was recently updated by Extension Weed Specialist, Tom Lanini, from UC Davis. It is included for your reference. The Susceptibility of Weeds to Herbicide chart can also be accessed through the UCIPM website at <http://ucipm.ucdavis.edu>

## 2004 Herbicide Registration on Horticultural Tree and Vine Crops

Herbicide-Common Name (trade name)	Almond	Apple	Apricot	Cherry	Grape	Kiwi	Nectarine	Olive	Peach	Pear	Pecan	Prune	Walnut
<b>Preemergence</b>													
dichlobenil ( <i>Casoron</i> )	N	R	N	R	R	N	N	N	N	R	N	N	N
diuron ( <i>Karmex, Diurex</i> )	N	R	N	N	R	N	N	R	R	R	R	N	R
EPTC ( <i>Eptam</i> )	R	N	N	N	N	N	N	N	N	N	N	N	R
isoxaben ( <i>Gallery</i> )	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
napropamide ( <i>Devrinol</i> )	R	R	R	R	R	R	R	R	R	R	R	R	R
norflurazon ( <i>Solicam</i> )	R	R	R	R	R	N	R	N	R	R	R	R	R
oryzalin ( <i>Surflan, Farm Saver</i> )	R	R	R	R	R	R	R	R	R	R	R	R	R
oxyfluorfen ( <i>Goal</i> )	R	R	R	R	R	R	R	R	R	R	R	R	R
pendimethalin ( <i>Prowl</i> )	NB	NB	NB	NB	NB	N	NB	N	NB	NB	NB	NB	NB
pronamide ( <i>Kerb</i> )	N	R	R	R	R	N	R	N	R	R	N	R	N
simazine ( <i>Princep, Caliber 90</i> )	R	R	N	R sour only	R	N	R	R	R	R	N	N	R
thiazopyr ( <i>Visor</i> )	NB	N	NB	NB	NB	N	NB	N	NB	N	N	NB	NB
Trifluralin ( <i>Treflan</i> )	R	R	R	R	R	NB	R	NB	R	NB	R	R	R
<b>Post emergence</b>													
Clethodim ( <i>Prism</i> )	NB	NB	NB	NB	NB	N	NB	NB	NB	NB	NB	NB	NB
2,4-D ( <i>Clean-crop, Orchard Master</i> )	R	R	R	R	N	N	R	N	R	R	R	R	R
fluazifop-p-butyl ( <i>FusiladeDX</i> )	NB	NB	R	R	NB	NB	R	NB	R	NB	R	R	NB
glyphosate ( <i>Roundup, Touchdown</i> )	R	R	R	R	R	R	R	R	R	R	R	R	R
glufosinate ( <i>Rely</i> )	R	R	N	N	R	N	N	N	N	N	R	N	R
halosulfuron ( <i>Sempra CA</i> )	R	N	N	N	N	N	N	N	N	N	R	N	R
MSMA	NB	NB	NB	NB	N	N	N	N	NB	NB	N	NB	NB
Paraquat ( <i>Gramoxone</i> )	R	R	R	R	R	R	R	R	R	R	R	R	R
sethoxydim ( <i>Poast</i> )	R	R	R	R	R	N	R	NB	R	R	R	NB	R

**Note:** This is intended as a general guide only. Before use of any herbicide, consult the label.

Labels change frequently and often contain special restrictions regarding specific use of a company's product.

N = Not registered, NB = nonbearing, R = Registered

