



Tree and Vine Newsletter



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February 2008

CLARKSBURG WINE GROWER MEETING

Tuesday, March 4, 2008

9:00 AM to Afternoon

Jean Harvie Senior and Community Center, Walnut Grove

(Stay on River Rd. to south end of Walnut Grove; The Community Center is on the left.)

3.0 hours PCA / Private Applicator C.E. credit applied for
3.0 hours CCA applied for

Sponsors:

Clarksburg Wine Growers & Vintners Association & UC Cooperative Extension – Sacramento, Yolo, & Solano Counties

- 8:30 Sign in
Pastries provided courtesy of Sacramento Valley Farm Credit
- 9:00 **Welcome**
Randy Baranek – President of Clarksburg Wine Growers Association
- 9:05 Strategies for controlling gray mold (Botrytis)
Jenny Broome, UC Cooperative Extension, Sacramento/Yolo/Solano Counties
- 9:30 Latest research on powdery mildew modeling and control
Doug Gubler, Plant Pathology Dept., UC Davis
- 10:00 Comparison of new and existing miticides
Chuck Ingels, UC Cooperative Extension, Sacramento County
- 10:15 **Break** – Pastries courtesy of Sacramento Valley Farm Credit
- 10:45 Update on vine mealybug control
Speaker TBA
- 11:15 The California Sustainable Winegrowing Program and third-party certification for sustainable farming
Jeff Dlott, SureHarvest, Soquel CA
- 11:35 Local grower and winery experience with the Sustainable Winegrowing Program
Speaker TBA
- 12:00 **Luncheon**
Courtesy of AGRO Crop Insurance, California Crop Insurance Services, and the Clarksburg Wine Growers Association
- 1:30 **Sustainable Winegrowing Program workshop** – 2 to 3 hour hands-on session for interested growers and winery personnel to fill out an assessment of their operation.
Staff & Consultants, California Sustainable Winegrowing Alliance

BACTERIAL CANKER AND BLAST OF CHERRY: *PSEUDOMONAS SYRINGAE*

By Jenny Broome

Symptoms of this disease will be most obvious in the spring and include branch or limb dieback with rough sunken cankers, blisters and gumming. There may also be leaf spots, dead buds, and “blast” of young flowers and shoots. Frequently, trees completely killed by the disease sucker from near ground level; cankers do not extend below ground. Although bacterial canker is more serious on sweet cherry trees, it also affects peaches, prunes, plums, apricots, and almonds.

Cankers caused by the bacteria may occur on the trunk, limbs, and twigs. Typical cankers are much longer than they are broad. A canker may girdle the infected limb or trunk. Use a pocket knife to observe the cambium at the canker; new cankers have red flecks outside canker margins and older cankers are brown and dead. They usually have a sour smell. Cankers develop in winter and early spring. As the tree begins growth in spring, the bacteria population declines and a callus layer forms around the canker’s edge. During spring and summer, girdled and nearly girdled limbs may leaf out. Usually the leaves turn yellow and the limbs die. Oozing of amber-colored gum may be visible.

“Blast” (also called “dead bud” disease) is first noted as dying buds on spurs in spring. According to Oregon researchers, infected buds usually start to die in February. As the disease progresses, both leaf and flower become infected. Dead bud usually starts in lower limbs and moves up the tree and to adjacent trees in successive years. Often, trees in the lower orchard, where the air is cooler and air movement is reduced, are the first to be infected. If all buds on a spur are killed, the spur will die. Cankers very seldom form, but the diseased buds may produce a slight gumming. Repeated death of buds may result in misshaped growth.

Pseudomonas syringae survives on plant surfaces, is spread by splashing rain, and is favored by high moisture and low temperatures in spring. The disease is worse in low or sandy spots in the orchard. Ring nematodes have also been associated with increased susceptibility to bacteria canker in both cherry and peach. Young trees, 2 to 5 years old, are more likely than older trees to be affected. Though rare, this disease can occur in first year of planting.

Factors that increase disease include wounds, frost damage, early dormant season pruning, incorrect soil pH, and poor nutrition. Oregon researchers report that infection by other pathogens including *Cytospora*, *Verticillium*, and *Nectria* can lead to more bacterial canker.

Sources of bacteria include old cankers, healthy buds, systemic infections within trees (with or without cankers), and epiphytes on leaf surfaces, weeds, grasses, and even soil. Wind, rain, insects, infected bud wood, and infected nursery stock can spread bacteria.

CONTROL WITH MULTIPLE TACTICS

Prior to planting, try to locate orchard in an area less likely to be affected by frost. Test soil for ring nematodes before planting. Also test for incorrect pH and other physical characteristics that can be corrected prior to planting.

Of the rootstocks commonly used for cherries in California, Mahaleb is the most tolerant of bacterial canker, Colt is moderately susceptible, and Mazzard is susceptible. Size-controlling rootstocks may also have useful resistance but field performance trials are lacking. Trees on Gisela rootstock have exhibited increased susceptibility.

Use only scions from virus-tested (and found to be free of all known viruses), canker-free trees. Make buds or grafts at least 12 to 15 inches away from the trunk. ‘Royal Ann’, ‘Bing’, ‘Lambert’, and ‘Van’ are very susceptible to bacterial canker. ‘Corum’, ‘Sam’, and ‘Sue’ appear to have sufficient tolerance to canker to be grown commercially without serious tree loss.

For the blast phase of the disease, the cultivars ‘Royal Ann’, ‘Bing’, ‘Lambert’, and ‘Van’ are quite susceptible. ‘Black Republican’ and ‘Mazzard’ seedlings are somewhat less susceptible.

Avoid pruning in the dormant season. Delay pruning until after budbreak in late March or early April, or prune in the fall before winter rains begin.

During the growing season, provide optimal soil conditions for growing cherries including attention to water, pH and nutrition. Prevent trunk sunburn by

painting trunks white, and prevent winter injury by avoiding late season nitrogen applications.

Completely remove infected trees or branches girdled and killed by cankers. Do not allow trees to re-grow from roots or trunks left after a major trunk canker has been removed.

According to researchers in Oregon, in summer, small cankers may be cut out. They recommend cutting away bark above and around the edges of the infected area. Use sharp tools, and leave wound margins smooth and neat. If no sprinkler water hits the trunks, wounds may be left uncovered during summer but should be treated with a wound sealant before fall rains begin. If sprinklers do hit the trunks, wounds may be soaked frequently, so they should be covered with a sealant as soon as possible after cutting. Sterilize all pruning tools between cuts with 10% Clorox (bleach) solution or shellac thinner (70% ethyl alcohol).

Cauterizing cankers using a hand-held propane burner has been used with some success in New Zealand and might be worth investigating for California cherries.

The controls described above are more likely to consistently provide disease control than chemical control, which has been mixed in its results. In

particular, use of copper products like Bordeaux, COCS, Kocide and Nu-Cop has provided mixed results in California, although dormant season copper-based treatments have been shown to be effective in controlling canker in research trials and commercial practice in some other countries.

In light, sandy soils and in some heavy soils, control has been achieved with pre-plant fumigation for nematodes. Nematodes stress trees, which predisposes them to bacterial canker. The benefits of pre-plant soil fumigation for control of bacterial canker usually last only a few years; in some areas only limited improvements in disease control occur following soil fumigation.

REFERENCES:

- Kennelly, M.M., F.M. Cazorla, A. de Vicente, C. Ramos. and G.W. Sundin. 2007. *Pseudomonas syringae* Diseases of Fruit Trees: Progress toward Understanding and Control. *Plant Disease* 91:4-17.
- Pscheidt J.W. 2007. Bacterial canker of cherry, see <http://plant-disease.ippc.orst.edu/disease.cfm?RecordID=270>
- UC IPM Pest Management Guidelines, Cherry: Bacterial canker, available online at <http://www.ipm.ucdavis.edu/PMG/r105101511.html>

GROWING BLUEBERRIES IN SACRAMENTO COUNTY

by Chuck Ingels

Thinking of growing blueberries? They are still in high demand because of press coverage of their antioxidant content and potential for lowering cholesterol, although many growers throughout California and the U.S. have recently planted them.

Blueberries are well suited to small farms, and they may play an important role if agri-tourism increases in the Delta. According to the Sacramento County Ag. Commissioner, there are only 46 acres of blueberries being grown in the county (in the Delta). Blueberry production in San Joaquin County increased nine-fold from 2000 to 2005, and in 2006 there were about 500 acres— up from about 200 in 2005. There is also a fair amount of organic acreage. There are no blueberry processors in California, so nearly the entire crop is sold fresh or frozen. Growers in the southern Central Valley are more able to benefit from the early market than in Sacramento County.

Establishing blueberries currently costs about \$10-\$15,000 per acre. Yields on mature plantings may reach 15 tons per acre in the Pacific Northwest, but in coastal areas typical varieties may reach 5- to 8-ton yields in the fifth year. The 2002 sample cost study (Tulare County) listed below assumes a production of about 10 tons/acre.

Varieties that have been recently planted by large-scale San Joaquin County growers include Star, Jewel, Emerald, Duke, and Legacy. Small-scale growers have planted most of these varieties, as well as Spartan, Bluecrop, Chandler, Darrow, Ozark Blue, and Powderblue.

A key factor in growing blueberries is to ensure that the soil drains well and has high organic matter content – at least 3%. Use berms and incorporate 2-4 in. of sawdust, wood shavings (not cedar), or finely ground wood chips. Peat moss is beneficial to add to the planting hole, and compost can also be

used. Some form of nitrogen must also be added, but not too much; many plantings have suffered greatly from excess N. The other key is to lower the pH to 4.5 to 5.0; pH can be lowered quickly with sulfuric acid or urea sulfuric acid materials but elemental sulfur is much slower. The amount to apply will vary with pH and soil type, with more needed on heavier soils (see Gaskell soil preparation reference). Heavy clay soils should be avoided.

Blueberries have very shallow root systems and do not tolerate drought, so frequent watering is needed; drip or microsprinklers work best. The water must be acidified – sulfuric, phosphoric, and urea sulfuric acids are commonly added to irrigation water. Organic growers can use citric or acetic acid. A mulch of wood chips should be applied around the newly established plants to retain moisture and control weeds. Landscape fabric can also be used, which can last up to 7 years. Some growers also create a slight depression on the top of the berm to increase the amount of water that infiltrates.

Plant spacing is 3 to 4 ft. apart. Trellis systems are sometimes used to facilitate machine harvest. New plantings should be kept from producing flowers or fruit for about the first 2 years to allow the plants to develop an adequate plant structure and roots.

Production problems include weeds, birds, and nutrition. Eliminate perennial weeds before planting. Few weeds will grow through thick mulch and even fewer with landscape fabric. Both pre- and post-emergence herbicides can be used cautiously. Some plantings do not have bird problems, but many do. Netting must be used in affected fields. Fertilize regularly with nitrogen and test soil to be sure the pH stays in the optimal range.

In late spring 2007 I planted a variety trial of 8 blueberry varieties to compare their growth and production. They had a rough start due to the heat, but they grew well late in the season. The varieties planted were Duke, Northland, Toro, Southmoon, Bluecrop, Elliot, Legacy, and Liberty. Elliot (the latest ripening variety) was small and did not survive well; it will be replaced with Misty and Sharpblue will be added, and the trial is being moved to a site east of Courtland.

UPCOMING BLUEBERRY WORKSHOPS

The annual Blueberry Field Day & Tasting will be held all day on Wed., May 21, 2008 at the Kearney Agricultural Research & Extension Center in Parlier, CA. Visit <http://cetulare.ucdavis.edu> (click on Newsletters or Calendar) closer to the date of the event for more details.

Locally, home blueberry growing will be discussed at the May 3 workshop at the Fair Oaks Horticulture Center (www.cesacramento.ucdavis.edu). We have recently added more varieties to the small blueberry planting.

USEFUL REFERENCES:

Interest in berries grows in California (UC, 2006):
www.ucanr.org/spotlight/berries.shtml

Calif. Agric. research article:
www.calag.ucop.edu/0502AMJ/pdfs/Blueberries.pdf

Information from Benny Fouche, UCCE San Joaquin County: www.cesanjoaquin.ucdavis.edu (click on Ag. & Nat. Resources, then on Small Farms)

Information from Mark Gaskell, UCCE San Luis Obispo & Santa Barbara Counties:

- Acid injection in irrigation water:
www.sbceo.k12.ca.us/~uccesb1/sf1002.htm
- Soil preparation & pH management:
www.ucce.ucdavis.edu/files/filelibrary/2028/26520.pdf
- Pruning southern highbush blueberries:
www.sbceo.k12.ca.us/~uccesb1/sf2200.htm

UC cost study:
www.coststudies.ucdavis.edu/files/blueberriesvs02.pdf

Northwest Berry & Grape Information Network:
www.berrygrape.oregonstate.edu

Organic production (ATTRA):
www.attra.ncat.org/attra-pub/blueberry.html

Home blueberry growing in Sacramento:
www.cesacramento.ucdavis.edu (click on Fair Oaks Hort. Center, then Berries)

SACRAMENTO COUNTY AGRITOURISM RESOURCES

by Jenny Broome

On January 16, 2008 a group of Sacramento County growers met at Scribner Bend winery to discuss the County's general plan update process and the inclusion of an "agritourism element" in the plan. The growers have been working with several Sacramento County departments including the County Economic Development Department to provide further input on how agriculture and County departments can work together. They have chosen to start by looking more closely at the Delta and how agritourism might help local growers.

For more information on this effort and what UCCE Sacramento County can do to help, please see our newly created web site on Agritourism at http://cesacramento.ucdavis.edu/Pomology/Sacramento_County_Agritourism_Resources.htm

For more information on the Sacramento County general plan update, including the agricultural element, please see the [Planning and Community Development Department web site](http://www.planning.saccounty.net/gpupdate/gpu-index.html) <http://www.planning.saccounty.net/gpupdate/gpu-index.html>

The University of Cooperative Extension provides research-based information that assists in the long term viability of agriculture. Towards that end,

UCCE has a range of informational materials available to assist growers, either as individuals to develop agritourism on their farm lands, or as an organization of growers who wish to embark on regional marketing and agricultural promotional initiatives.

We hope to continue to provide assistance as this initiative moves forward. Here are links to some valuable University of California resources:

UC Agriculture and Natural Resources: [Agritourism workgroup](http://groups.ucanr.org/Ag_Tour/), http://groups.ucanr.org/Ag_Tour/

UC publication on [Agritourism and Nature Tourism in California](http://ucce.ucdavis.edu/files/file_library/5327/23247.pdf), http://ucce.ucdavis.edu/files/file_library/5327/23247.pdf

UC Sustainable Agriculture Research and Education Program: [Sustaining local food systems reports](http://www.sarep.ucdavis.edu/cdpp/foodsystems/sustaining.htm), including information on regional and county marketing initiatives, <http://www.sarep.ucdavis.edu/cdpp/foodsystems/sustaining.htm>

UC Small Farm Center: [Information on agritourism](http://www.sfc.ucdavis.edu/agritourism/agritour.html), including a database where you can list your farm. <http://www.sfc.ucdavis.edu/agritourism/agritour.html>

SACRAMENTO VALLEY AREA PLANT PATHOLOGY

by Jenny Broome

Please visit our UCCE Sacramento County web site for new information at:

http://cesacramento.ucdavis.edu/Pomology/Sacramento_Valley_Area_Plant_Pathology.htm

INCLUDING:

What is Plant Pathology? An overview of plant pathology and disease management.

Plant Disease Models: Information from published studies on weather-based models available for use in plant disease decision making.

Plant Pathology Links: Other web sites with plant pathology information, including results of annual UC pesticide trials and other research results.

Weather Data: Information and links to local weather station data in Sacramento, Yolo and Solano Counties.

Don't forget phone access of current and recent local weather data for the Russell Road weather station by calling (916) 775-4557 and the UCCE Sacramento County weather station near the intersection of Bradshaw Road and Kiefer Blvd. by calling (916) 876-5204.