

University of  
California  
Cooperative Extension

# Vine Lines

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## April 2007 Issue

- Protecting Grapevines from *Phomopsis Cane and Leaf Spot*
- UC Studies Examines Continuous-Tray Raisin Production Costs
- DPR Launches Toll-free Phone Number for Complaints
- Local Meetings and Events
- Publications from the University of California

## Protecting Grapevines from *Phomopsis Cane and Leaf Spot*

Stephen Vasquez and George Leavitt

March and April spring showers should have grape growers thinking about protecting their vines from *Phomopsis Cane and Leaf Spot*. Thompson Seedless, Flame Seedless, Redglobe and Grenache are most susceptible to infection by *Phomopsis viticola*. The application of fungicides is the primary control method for this disease when farming the most susceptible cultivars. Unfortunately, cultural or biological control of this disease are marginal and fungicides are usually necessary.

### Disease Cycle

Symptoms first appear on leaf blades as tiny dark brown-black

spots with yellow margins (Fig. 1). If environmental conditions are optimal, spots will coalesce and kill portions of the expanding leaf. Severely infected leaves will become distorted over time, die and drop from the canopy. Tender green shoots that become infected will display tiny black spots near the head or cordon. These spots will also begin to grow into each other and form cracks that will give a scarred, scabby appearance at the basal end of the shoot (Fig. 2). Early, heavy infections will stunt shoot growth and development. Some buds may not emerge at all due to bud mortality or cell death directly below the bud. Thompson

Seedless and Redglobe are two varieties that experience poor budbreak after a season of heavy infection by *Phomopsis viticola*. When shoots have developed 12-24" of growth, shoot breakage can occur during strong winds when heavy infections are present.

As fall approaches and grapevines begin dormancy, infected canes and spurs take on a grayish-white appearance (Fig. 3). Black to purple scars are noticeable near the base of cane and tiny black pycnidia (fruiting body of the fungus) begin to protrude from the infected wood. It is these pycnidia that will provide the inoculum for the next season. Optimal environment conditions in-

## UC Studies Examines Continuous-Tray Raisin Production Costs

The University of California Cooperative Extension has prepared two new studies to help raisin growers evaluate the cost of continuous-tray raisin production.

The continuous tray method mechanizes grape picking and raisin collecting. It was developed by former UC Davis scientists Harold Olmo and Henry Studer and raisin grower Earl Rocca to

reduce the labor associated with traditional raisin production. Though Rocca has been using the continuous tray method since the 1970s, interest in this method has increased substantially in the last decade as wages and other costs associated with farm labor (e.g. workers' compensation insurance) were beginning to erode the already small profit margins of

producing raisins. This trend is likely to continue due to labor shortages throughout the grape industry. Raisin growers considering the move to continuous tray production have been looking for science-based information that shows costs on a per acre basis. Both UC studies identify the cost of producing continuous tray raisins, taking into account the pur-

(Continued on page 2)

(Continued on page 3)

# Phomopsis

(continued from page 1)



Figure 1. Grape leaf displaying yellow spots from *Phomopsis viticola* infection.

clude temperatures between 60-75°F and free moisture or humidity near 100%. Extended periods of rain will increase infection and may make it difficult to apply fungicides. It is important to protect young green shoots (i.e. 0.5-1" in length) prior to weather forecasts that include rain. Spores are released in large quantities from pycnidia found on diseased canes, spurs and bark at budbreak and splashed by rain onto the young growing shoots. Once growth has reached 15-18 inches the canopy forms an umbrella and helps prevent the splashing effect, therefore decreasing the need for fungicide applications.

## Cultural control

Removing infected canes during pruning helps reduce the inoculum within a vineyard. However, pruning alone will not elimi-

nate the disease from the vineyard. The application of fungicides should be used in addition to removing infected canes.

## Chemical control

Fungicides registered for management of Phomopsis fall into three major categories: dormant, foliar contact protectants and foliar systemic protectants.

Dormant applications: Liquid lime sulfur is the only fungicide registered for dormant applications. It is effective in helping manage this disease in vineyards that have severe infections by limiting spore production from the pycnidia. Dormant season applications of lime sulfur (15 gal/ac rate) need to be incorporated into a season-long (March-May) program in order to manage phomopsis cane and leaf spot. It is important to apply lime sulfur

only when vines are dormant (i.e. buds should be tight) to avoid damage to young tissue.

In-season applications: Registered fungicides applied from budbreak through 12" of growth (mid March-May) act as foliar protectants and need to be applied to the foliage after budbreak (during the highest potential infection period). Foliar applications need to be applied prior to rain events in order to be effective and will need to be reapplied after significant precipitation.

Various copper/sulfur materials (alone or in combination), ziram, captan, mancozeb or maneb are all foliar contact protectants and need to be applied before spring rains. Additional applications will be needed after significant rainfall or on new growth that was not present during the initial application. These fungicides are known as multiple site inhibitors, having a low resistance potential, and can be used in successive applications. Fungicides from this group should be considered for early season management due to canopy size and costs.

The group of fungicides known as the strobilurins (Abound®, Sorvan®, Flint® and Pristine®) are classified as foliar systemics and sustain activity during long rain events. Unlike the contact protectants, they have the advantage of not being washed off after a rain. These fungicides are also effective against grapevine powdery mildew. Care should be taken to rotate the strobilurins with fungicide that are multiple site inhibi-

(Continued on page 4)

## Raisin Production Costs

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chase of used harvesting equipment to be upgraded or taking advantage of new harvesting equipment designed for continuous-tray raisin production.

The two studies, "Sample Costs to Produce Raisins on a Continuous Tray," one using used or refurbished equipment, the other using new equipment are intended as guides to help make production decisions, determine potential returns, prepare budgets and evaluate production loans. The studies are based on hypothetical farms using practices common in the San Joaquin Valley. Input and reviews were provided by UCCE farm advisors, growers, pest control advisers and other agricultural associates.

Assumptions used to identify current costs for production operations, material inputs, cash and non-cash overhead are described in the studies. Tables in the studies show establishment costs, profits over a range of prices and yields, monthly cash costs, hourly equipment costs, and the whole farm annual equipment, investment and business overhead costs.

The cost study was prepared by Stephen Vasquez, UCCE farm advisor, Fresno County; Matthew Fidelibus, UCCE viticulture specialist; Peter Christensen, UCCE viticulture specialist emeritus; Bill Peacock, UCCE farm advisor, Tulare County; and Karen A. Klonsky, UCCE economist, and Richard De Moura, staff

research associate, UC Davis Department of Agricultural and Resource Economics.

The studies can be downloaded free from the Web at <http://coststudies.ucdavis.edu>. The studies are also available from the Department of Agricultural and Resource Economics, University of California, One Shields Avenue, Davis, CA 95616, and from local UCCE offices.

Similar reports are available for many commodities from 1931 to the present. A \$3 handling fee is charged for each report mailed from the department. For more information, call (530) 752-3589 or (530) 752-1517.

## DPR Launches Toll-free Phone Number for Complaints

Californians who have pesticide complaints can now call one toll-free phone number for help.

The new service, 1-877-378-5463, transfers callers to their County Agricultural Commissioners Office with recorded information in English and Spanish.

The goal of the Department of Pesticide Regulation (DPR) is to help people with their pesticide problems as quickly as possible. The new phone number will help DPR and their local partners, County Agricultural Commissioners, enforce pesticide laws and protect the public.

The new, toll-free service was launched as DPR released its latest annual summary of pesticide illness reports. The 2005 illness summary found 911 individual cases

related to pesticide exposure. Of these, 647 were agricultural and 263 were non-agricultural.

More information regarding the statewide summary of pesticide illnesses in 2005 can be found at [www.cdpr.ca.gov/docs/whs/2005pisp.htm](http://www.cdpr.ca.gov/docs/whs/2005pisp.htm)

Individual county illness statistics for 2005 are available at [www.cdpr.ca.gov/docs/pressrls/2007/2005illnesstable.pdf](http://www.cdpr.ca.gov/docs/pressrls/2007/2005illnesstable.pdf)

DPR researchers emphasize that these statistics alone are not an indicator of the effectiveness of pesticide regulation at the local level. Illness statistics are compiled and summarized statewide to analyze illness trends and help determine whether existing safeguards are sufficient.

### Pesticide Complaint?

**I-87PestLine**  
INFORMATION LINE

**I-877-378-5463**



# Phomopsis

(continued from page 2)



**Figure 2.** Severe infection on basal portion of young shoots displaying scars and scabs.

tors. As the canopy continues to grow (4-6"), these fungicides should be considered as replacements for the non-systemic fungicides. Their efficacy during storms lasting more than a day will help protect new susceptible tissue.

This season, budbreak has occurred (approximately March 16<sup>th</sup> in the San Joaquin Valley) and we have had some significant precipitation (March 20<sup>th</sup> and 21<sup>st</sup>). A fungicide application should have been applied to protect shoots originating from the head of cane pruned varieties, renewal shoots and spurs. Additional applications should be scheduled prior to forecast rain events.

Additional information on *Phomopsis viticola* and management can be found at the follow-

ing link: Phomopsis cane and leaf spot <http://ucipm.ucdavis.edu/PMG/r302100411.html>

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*George Leavitt is a UC Cooperative Extension viticulture farm advisor emeritus.*



**Figure 3.** Dormant cane displaying a gray-white appearance. Tiny black pycnidia will exude spores when wet.

## *Calendar of Events*

### **U.C. Davis University Extension Meetings (800) 752-0881**

#### **Successful Small Scale Winemaking**

April 28, 2007  
9:00 a.m.— 4:30 p.m.  
Medical Sciences Bldg. E. Health Science Dr.  
Davis, CA  
Instructor: Jim Laspley  
Section: 064VIT202

#### **Everyday Compliance for Winery and Brand Owners**

May 24, 2007  
9:00 a.m.— 4:00 p.m.  
Da Vinci Building, 1632 Da Vinci Ct.  
Davis, CA  
Instructor: Andrea Anderson  
Section: 064VIT207

#### **Introduction to Wine Analysis for Home Winemakers**

May 19, 2007  
8:00 a.m. — 6:00 p.m.  
Enology Building, California Ave.  
Davis, CA.  
Instructor: Michael Ramsey  
Section: 064VIT203

#### **Variety Focus: Zinfandel**

May 31, 2007  
8:30 a.m. — 4:30 p.m.  
Freeborn Hall, North Quad  
Davis, CA  
Deborah Golino  
Section: 064VIT200

## *Publications from the University of California*



**Weeds of California and other  
Western States, 2007**  
ANR Publication 3488  
Price - \$100.00 + tax and shipping

This easy-to-use guide is the most comprehensive guide available on weeds in the Western United States. Package includes a CD of all of the photographs from the book.



**Wine Grape Varieties in  
California, 2003**  
ANR Publication 3419  
Price - \$30.00 + tax and shipping

A comprehensive variety publication. Covers all the grape growing districts in California, highlighting 36 major varieties.

### **Order Form**

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