

Vineyard Views

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Vine Mealybug in Napa County – Here to Stay?

There is no doubt that the ongoing efforts to eradicate vine mealybug (VMB) from Napa County have had a major impact on reducing the severity of existing infestations and have limited spread of VMB into new locations. Year-round treatment programs at most of the infested sites have reduced populations to levels where little, if any, fruit loss is occurring. However, these sites still harbor VMB populations that will rebound without continued insecticide applications. In addition, more infested sites have been identified in 2005. Carneros (Napa and Sonoma) is an area of particular concern due to the number of infestations scattered throughout the region, some of which are quite extensive in terms of acreage.

In the case of Carneros, it appears that VMB was spread throughout some large plantings (probably via machine harvesters) before the operators knew that their blocks were infested. This has complicated control efforts and increases the opportunities for spread to neighboring vineyards. These cases highlight the importance of early detection and treatment in limiting the severity of VMB infestations.

On the positive side, registration of insecticide baits for ant control may be in place by next year and this should help with control efforts. Ants interfere with biological control of VMB by killing or driving off predators and parasites that would otherwise attack VMB.

A unique research proposal is being considered to train sniffer dogs to detect VMB (think of drug sniffing dogs on the hunt for VMB in your vineyard). The Assistance Dog Institute trains dogs to sniff out cancer metabolites and now proposes to train dogs to sniff out VMB pheromone. As noted above, early detection is key to preventing inadvertent spread of VMB (such as occurred in Carneros), so sniffer dogs could be a valuable asset in our control efforts. Growers in Carneros are attempting to fund this project and are looking for more cooperators. If you are interested in possibly supporting this project, please contact my office.

For more information regarding vine mealybug, contact my office or visit my website:

<http://cenapa.ucdavis.edu/>.

Grape Mealybug – Large Populations this Year

In addition to the problems associated with vine mealybug, 2005 has been a year with unusually high populations of grape mealybug. Grape mealybug is present in vineyards throughout much of Napa County, but populations normally remain at very low levels due to effective natural biological control. Chemical treatment is rarely needed for grape mealybug, and many growers have never seen it in their vineyards. This year, however, something changed and allowed populations to reach significant levels. Whether there were fewer predators and parasites present this year, more ants to disrupt the biological control, or simply a greater hatch of mealybugs, we don't know. The end result, though, is the largest population of grape mealybug I have ever seen in Napa County.

In the summer, grape mealybug prefers protected areas where clusters rest against the woody bark of cordons or trunks, or where clusters are massed together. In infested vineyards, flipping over clusters resting on bark often reveals a sticky mess of honeydew and mealybugs. In many cases, growers needed to drop these heavily infested clusters and apply insecticides to limit future damage. I observed large populations in vineyards from American Canyon up to St. Helena.

Besides the direct damage to fruit, an additional threat posed by mealybug infestations is vine-to-vine spread of virus diseases such as leafroll and corky bark. Both grape and vine mealybugs can spread these viruses. Spread of leafroll has been especially apparent in the Oakville and Rutherford regions in recent years, most likely due to grape mealybug. The larger than normal populations this year will only make this problem worse.

Remember, if you find mealybugs in your vineyard, examine them for the presence of what appear to be “tails”. If tails are present, they are likely grape mealybugs. If tails are absent, it may be vine mealybug. In either case, you'll want to bring samples in to my office or the Agricultural Commissioner for positive identification.

Severe Pruning for Pierce's Disease Management

Symptoms of Pierce's disease (PD) become clearly evident in September and October as infected vines develop the classic symptoms of leaf scorching, cluster shriveling and loss of leaf blades (with petioles still attached to canes). Removal of diseased vines followed by replanting is currently the only viable management option for PD.

In a recent research project, I investigated the possibility of using severe pruning to remove infected portions of vines and to speed redevelopment of new plants. Severe pruning involved cutting off the entire vine 3-4 inches above the graft union in the fall or early winter. PD is caused by a bacterium, *Xylella fastidiosa*, which moves through the vine from the foliage (where it is introduced during feeding by infected sharpshooter leafhoppers) to the permanent parts of the vine, eventually reaching the roots. If severe pruning occurs before bacteria have reached the lower trunk, then severe pruning should eliminate the entire infection and re-growth should be disease free. Vines redeveloped on existing root systems can usually be brought back into

production in just one or two years. Replants may take 3-5 years to reach the same level of productivity due to their small root systems and competition from the surrounding vines. Therefore, if severe pruning was successful at eliminating infections, it would reduce the economic losses associated with PD.

We tried severe pruning in several vineyards. In almost every case, redeveloped vines appeared disease-free during the first season as new shoots were trained up the stake and out on wires. However, by the second or third year, almost all of these vines developed symptoms of PD. Apparently, bacteria persisted in the trunk or roots of these vines at levels that did not cause symptoms the first season. Over time, the bacteria multiplied and reached levels sufficient to again cause symptoms to occur. Therefore, severe pruning failed in most of our sites.

One vineyard, though, had results that suggest severe pruning could still be useful in some cases. This was a young block of Merlot where severe pruning took place the first year that PD symptoms became evident. Sixty seven diseased vines were severely pruned in October 1998. All the vines were symptom free in 1999 and most were back in production in 2000 when PD began to reappear in some of them. By the end of 2002, four seasons after severe pruning, 50% of the vines were still healthy. While 50% is a low rate of success, the practice may still have been economically viable given the value of the fruit produced by these vines. Severe pruning is likely to be economically successful only in cases where growers are aggressive in cutting back vines and practice severe pruning the first year that vines show extensive PD symptoms.

Heat Stress Awareness

Heat is a serious physical hazard that threatens agricultural workers from late spring to early fall. When one's ability to respond to heat stress is exceeded, continued exposure can lead to reduced productivity, increased accidents on the job, or heat-related illnesses.

Minimizing the risks of heat stress should be on the minds of owners and managers who have crews working extended hours throughout the harvest season. While most harvest activities take place in the cool morning hours, considerable work takes place during the hotter hours of the day. This is especially so when we experience heat waves with temperatures reaching the upper 90's or higher.

Workers should drink water even before being prompted by thirst because thirst is a late signal of a water deficit. "Chugging to quench an intense thirst is like pouring water on a wilted plant," according to UC Berkeley-based agricultural personnel management specialist Howard Rosenberg.

For farm operations, Rosenberg recommends that managers and foremen try to keep drinking water containers as close as possible to centers of activity. If the water is too far away, such as at the end of a long row, workers may not want to take time away from their tasks or exert the extra effort to get to it. In a Sonoma County study, Rosenberg compared crews provided with personal hydration systems (Camelbak®) to ones that had to walk 100 feet or more to a cooler. The

workers with the personal hydration systems drank more water and had higher productivity than the standard crew.

Excess heat can impair the body even before a person feels ill. Symptoms of heat stress may include general discomfort, loss of coordination and stamina, weakness, poor concentration, irritability, muscle pain and cramping, fatigue, blurry vision, headache, dizziness, nausea, confusion, and unconsciousness (see enclosed Safety Note).

A bilingual heat stress education card was recently produced in cooperation with UC, California Farm Bureau Federation, California Grape and Tree Fruit League, and California Association of Winegrape Growers, with additional USDA support through its Western Center for Risk Management Education. A copy can be seen at <http://farmsafety.ucdavis.edu/safeshts/Heat-Stress-Handout-Eng-Spn.pdf>. To order free copies of the bilingual heat-stress education cards for farmworkers, contact Elisa Noble at enoble@cfbf.com or (916) 561-5598.

In August 2005, Cal OSHA adopted an emergency standard (California Code of Regulations, Title 8, Section 3395) intended to reduce the frequency and severity of heat-related illness. The emergency standard includes three primary measures to control heat-related illnesses: provision of drinking water, access to shade, and training. The standard suggests that the newly required measures be included in an employer's injury and illness prevention program.

More references about heat stress are available at the following web sites:

<http://are.berkeley.edu/heat/>

<http://farmsafety.ucdavis.edu/index.html>

http://danrec.ucdavis.edu/ehs/safety_notes/index2.html

<http://www.cfbf.com/programs/rhs/heatresources.cfm>

<http://www.dir.ca.gov/dosh/HeatIllnessInfo.html>

Keep An Eye On Vine Water Stress Too!

With the considerable amount of late spring rains this year, grapevines throughout the North Coast have developed larger canopies than normal. Larger canopies use more water than smaller ones, so the demand for late-season moisture will be greater than ever. While it may seem that the vines have just recently stopped growing, don't be lulled into thinking that they will have plenty of water to make it through harvest. Keep an eye on weather forecasts, and continue monitoring the water status of the vines. This can be done visually, with pressure bombs and/or with soil moisture measurements. Early signs of late-season water stress are yellowing of basal leaves. More severe stress leads to loss of lower leaves, shriveled clusters, and scorching of leaves and fruit exposed to direct sunlight in the hot afternoon hours. If high temperatures are in the forecast, irrigate in advance to provide adequate moisture to the vines to help them withstand the heat. Using overhead sprinklers on very hot days can greatly reduce vine temperatures and will minimize fruit damage from heat stress.

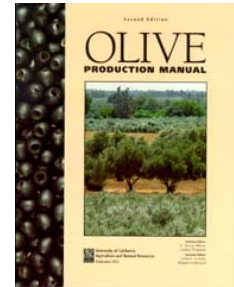
Berry Sampling for Brix Measurements

A recent article in the American Journal of Enology and Viticulture (AJEV 56 [2005]: 86-89) looked at berry position within clusters of Cabernet Sauvignon in order to understand which berries would yield Brix measurements closest to that of the entire cluster. Their results showed that berry sampling for Brix measurements was best confined to the top or middle of the cluster, and that bottom berries should be avoided. This work was conducted in a single vineyard near Oakville in the Napa Valley. While Brix levels in Napa Cabernet Sauvignon currently have little influence on harvest timing, this work is still worth noting.

New Publications

Olive Production Manual-2nd Edition (\$35)

First released in 1994, this manual quickly became a bestseller as the definitive guide to olive production in California. Now completely revised and updated, growers will want to update their libraries with this much-anticipated new edition. This 180-page manual is fully illustrated with 40 tables, 19 line drawings, and 36 charts, and 100 color and black and white photos. The most notable additions include a new chapter on deficit irrigation, a greatly expanded chapter on olive oil production, and coverage of four new pests, including the olive fly.



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Order from UC Publications: 1-800-994-8849 or <http://anrcatalog.ucdavis.edu>. Also available at the UC Cooperative Extension office in Napa.

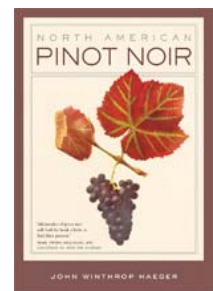
Recommended Reading:

North American Pinot Noir

John Winthrop Haeger

UC Press. \$34.95. <http://www.ucpress.edu>

This is the definitive work on pinot noir in North America. A comprehensive reference for winemakers and aficionados as well as a sourcebook for casual enthusiasts, it includes extensive historical and viticultural background on pinot noir in the New World and profiles of six dozen prominent producers in California, Oregon, British Columbia, and New York. The author discusses plant genetics and clones, identifies the essential conditions for really good pinot, tells where the best wines are grown and made, and analyzes the factors that determine wine styles and signatures. In the second part of the book, he presents detailed producer profiles with accessibly written tasting notes on recent and mature vintages. Available through UC Press and at local book stores.



Harvest Weather Forecasts

Free weather forecasts from Fox Weather continue to be available to growers in Napa and Sonoma counties thanks to funding provided by Syngenta Crop Protection. The recorded messages can be heard by calling 258-3420 (Napa County).

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