

Notes from the 2011 American Society for Enology and Viticulture Eastern Section Annual Conference

Pest Management Symposium: Impacts in the Vineyard and Winery (Tuesday sessions)

Dr. Robert Davis, an Agricultural Research Service scientist at USDA in Beltsville, MD presented a talk on Grapevine Yellowing, a phytoplasma disease that affects grapevines and many other plants. It resides in the sieve cells of the plant phloem and is an obligate parasite that can be graft or vector transmitted, mainly by leafhoppers where grapevines are concerned. There are different types of grapevine yellowings and each with its own particular leafhopper vector. GY first appeared in New York in 1977 but has global distribution and is a severe problem in European wine regions. There are now identified strains of GY in North America (Virginia-2, NY and Canada). It appears elsewhere as Flavescence dorée, Bois noir, Aster yellows, Australian GY or X-disease. In red varieties it causes a reddening in the leaves later in the season and looks a little bit like leafroll. Cabernet Sauvignon and Chardonnay appear to be quite susceptible. <http://plantpathology.ba.ars.usda.gov/phytoplasma.html>

Shadi Atallah from Cornell discussed the economic effects of leafroll virus in Finger Lakes vineyards and when it is most cost effective to remove vines or replace an entire vineyard. His research covered many scenarios from doing nothing, partial vine removal and full vineyard replacement. The economic loss due to leafroll infected vines can be significant and vineyard replacement may be the best long term solution. Planting a vineyard with certified leafroll tested plant materials can contribute significantly to the long term health and profitability of a vineyard.

Dr. Keith Striegler from the University of Missouri reported on the USDA National Clean Plant Network. It was decided not to locate a foundation block in the Eastern US. Instead, the Foundation Plant Service in Davis, CA will undertake to serve the needs of Eastern growers by producing materials such as crown gall and Tomato Ringspot virus tested vines on the new Russell Ranch which is currently being developed and planted. It will be 3-5 years before certified materials are available to growers. A rigorous system of education for nurseries and grape growers will be needed to make sure the plant materials are optimally developed and used. [http://ucanr.org/sites/natcpn/Grape\\_CPN/](http://ucanr.org/sites/natcpn/Grape_CPN/)

Dr. Turner Sutton from NC State University gave a good overview of the late season fruit rot organisms, which certainly continue to linger around vineyards in the Mid-Atlantic region. These include phomopsis, botrytis, ripe, bitter and sour rots. All can strike at the last moment before harvest and ruin a wine crop. We normally associate phomopsis with a wet spring like we just had on shoots but it is responsible for blighted flower clusters and can appear later on fruit as latent infections. Bitter rot often starts on the berry pedicel and moves into the berry, and looks a bit like botrytis with dense, dark infections. Ripe rot appears when it is warm and wet and is very aggressive, infecting the rachis and berries. It is distinctive from bitter rot because of its salmon color on berries. Sour rot is associated with damaged fruit and is caused by a variety of organisms (30-40 total) such as Rhizopus, Penicillium, Alternaria, Aspergillus that all rot and stink together. It creates a slip skin and rots the clusters very quickly. He also discussed Macrophoma rot and botrytis. Fruit is susceptible from bloom to harvest but veraison is the most dangerous period. Varietal susceptibility varies dramatically and disease resistant varieties can offer great advantages to vineyard management. Vineyard sanitation is hugely important – removing dead material such as mummies, cankers, old cordons, etc. Training to cane over cordon can reduce the amount of old infected wood around the clusters. Canopy management practices such as shoot positioning, shoot thinning, leaf removal, hedging, crop thinning and spraying are all important. Use the maximum amount of water per acre for best coverage. He emphasized that growers should spray before it rains to get protective materials in place, not afterwards when the infections have already occurred. Abound is excellent for bitter and ripe rots. Captan is still one of the more effective treatments these rots.

Agriculture on Long Island, because of its delicate aquifers and population density, probably gets more scrutiny than any farmer wants or deserves. Alice Wise has spent much of her Cornell extension career helping the wine industry to comply with environmental regulations from just about every agency on earth. The sustainable viticulture program she developed was a landmark work for the wine industry in the East and eventually evolved into the New York VineBalance program. She and Libby Tarleton continue to push the envelope on vineyard sustainability by testing disease resistant varieties like Norton, and conducting grape disease and vineyard floor management trials. Currently, her plots are separated into conventional and two levels of organic treatments, 1 and 2 that rely on stilet oil, Serenade, copper and sulfur. She reports that phomopsis and black rot are a problem every year and is worst in the organic plots. Vines in the organic plots are also smaller in size and vigor. In high pressure years downy mildew is a problem even with phosphorus acid products (not organic) and copper is not enough to provide control. Mites are treated early with neem oil and Japanese beetles with neem and pyrethrins work if applied early with good coverage. BT has worked on grape berry moth if applied early with good coverage. Vineyard floor compost is added every 2-3 years but humic acid has not helped. She likes to use foliar N as a spot treatment. Under trellis mowing is a good option in vineyards that do not hill up vines for winter protection. Organic herbicides have not worked very well. They no longer use pre-emergence herbicides and mow only using a side mounted mower. The under-vine treatments have reduced vine and berry size but have not affected harvest juice quality. She stressed that the details of farming ops help to raise sustainability, such as paying attention to nozzle selection, reducing drift, using lots of water (100 g/a), improving deposition (Landers devices), improving pesticide storage and handling and following WPS and pesticide regulations. <http://ccesuffolk.org/viticulture/>

Dr. Gavin Sacks, in the food science department and enology program at Cornell gave a presentation about the effects of late season sulfur use on fermentation musts. Unfortunately at this time I had to help with the wine service at lunch and missed most of his presentation. Sorry!

Dr. Tracy Lesky from USDA ARS in Kearneysville, WV continues to scare everyone with her presentation on Brown Marmorated Stink Bug. It is a very serious problem in commercial orchards and homes in the Mid-Atlantic region and is rapidly expanding its range in the US. It is uncertain how BMSB will affect wine vineyards. Dr. Joe Fiola at Univ of Maryland ran white and red wine trials in 2010, applying 5, 10 or 20 stink bugs to 25 lb grape lugs and producing separate small wine lots. He explained that taint in the form of cilantro in aromas and flavors were most evident during and immediately after fermentation but eventually the taint faded. In three white and three red samples I tasted the taint was not obvious. Perhaps this will be a mixed blessing for wine growers. Dr. Leskey reported that BMSB is a nervous bug, given to flight if disturbed. In machine harvest vineyards, the shaking prior to the arrival of the picker should cause the bugs to fly or drop and hopefully not get in with the grapes. <http://ars.usda.gov/pandp/people/people.htm?personid=21287>

The Eastern Section awarded eight scholarships this year to worthy students from around the region. You'll have a chance to hear about their work at next year's Eastern Section conference in Traverse City, Michigan. I hope you will attend. <http://www.asev-es.org/>

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