

Virginia Cooperative Extension

Knowledge for the Commonwealth



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VIRGINIA STATE UNIVERSITY

VITICULTURE NOTES Vol. 27, No. 2 (May 2012)

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<http://www.arec.vaes.vt.edu/alson-h-smith/grapes/viticulture/index.html>

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I. Current situation

The following topics and reminders have been discussed at recent vineyard meetings on 11 and 25 April and are included here with some additional detail. The viticulture topics (canopy management, nutrition, crop management) are covered more extensively in the Wine Grape Production Guide, available here: <http://palspublishing.cals.cornell.edu/>

Canopy management: Shoot-thinning

- Our goal with shoot-thinning is to promote a desirable canopy architecture for fruit ripening, starting now, by limiting shoot density to about 3 to 4 shoots per foot of canopy (it's far easier to thin shoots now than waiting until you realize the canopy is too dense after fruit set!)
- Note: If you are in a windy location, or with high-trained vines, you might go a bit higher with this density goal, as shoot breakage may occur and further thin the canopy.
- Note: Shoot density for Smart-Dyson (or other divided canopy training systems) should be altered to reflect the upper and lower canopies. For S-D, or S-D Ballerina, we would aim for 3-4 shoots/foot of cordon going UP and 2-3 shoots/foot going DOWN on the two opposing planes of vertically-divided canopy
- Cannot over-emphasize the importance of shoot-thinning **now** for improved disease management and fruit ripening **later**.
- Goes a long way towards achieving desirable canopy architecture AND balanced crop load
- More effort required with cordon-trained vines due to abundance of base buds at spur locations (we are shoot-thinning Cabernet now and there are still base buds that are just starting to push, although most shoots are at the 4- to 6-inch length)
- complete shoot-thinning before shoots reach 12" long
- Try to retain shoots that are close to cordon (e.g., lower node of 2-node spur) if using cordon-training.

- More work required to shoot-thin cordon-trained vines (due to multiple base buds) than head-trained, cane-pruned vines; however, shoot development often more uniform along the cordon than along a cane
- Close attention to shoot density and shoot positioning now will *greatly* assist with disease management in the post-bloom period

Canopy management: Selective leaf and shoot removal thinning

- At fruit set or shortly thereafter, selectively removing 1 or 2 leaves in the fruit zone is an excellent means of assisting with disease management, especially for botrytis bunch rot and powdery mildew.
- Ideally, we want no more than about 1.5 leaf layers (on average) in the fruit zone or elsewhere in the canopy.
- Can restrict to eastern canopy face of N/S-oriented rows (especially important to minimize over-heating, or sun-burning of early-maturing varieties)
- If your canopy exceeds 1.5 leaf layers, think about additional shoot-thinning or selective leaf pulling.
- Attend the Canopy Management Workshop on 14 June (AHS AREC) to see how to assess canopies and correct some features of canopies before the season further progresses (see page 6 and attachments).

Crop control: My general rule of thumb is to aim for about 1.5 to 2.0 pounds of crop per foot of canopy: the lower number for reds, the higher for whites. Again, this is a *general* rule and you may wish to further reduce those levels if your own situation and experience warrant the reductions. You'll need your average cluster weights from previous harvests to predict how much crop is (currently) hanging (at time of thinning). But, say, if you are counting 7 developing clusters per foot of canopy and that variety averaged 0.38-pound clusters at harvest in past years, then you might be headed towards 2.7 pounds of crop per foot of canopy – I'd suggest going back to no more than 5 clusters per foot—if you think that cluster weights will be near long-term average.

When to reduce crop, if needed: With vigorous vines, wait until July (but prior to veraison) to remove excessive crop, otherwise vines will compensate with larger berries and more compact clusters. With low-vigor and/or young vines, remove additional crop soon after fruit set, once you can see the extent of set. Remove all clusters from stunted shoots (e.g., those that appear to have aborted shoot tips and that are less than 18 inches long). Basal clusters are typically the larger(est) clusters on shoots that bear 2 or more clusters. Deciding which cluster(s) to remove on a shoot has more to do with proximity to other clusters than to position on the shoot though. We prefer to thin clusters with the strategy of minimizing cluster-to-cluster contact, or contact of the cluster with trellis hardware or cordons, rather than following a particular prescription for basal cluster versus more distal cluster removal. Clusters and berries that freely develop without contact with other objects tend to be freer of fruit rots and exhibit more uniform berry ripening than do clusters that are contacting trellis or grapevine parts.

Nutrition: Small rates (10 to 20 pounds actual N/acre) of nitrogen can be applied prior to bloom if petiole tests from previous year(s) indicate low, early season levels of N. However, we often see adequate N levels at bloom, followed by deficient levels at veraison. Therefore, the trend with our recommendations has been to delay N application until bloom, and then do a split application wherein 50% of total rate is applied at fruit set, and the other 50% applied about 6 weeks later. The latter application can help ensure adequate N availability during the critical ripening period of the grapes. It also helps ensure adequate Yeast-assimilable Nitrogen (YAN) levels in fruit at harvest.

- Under-trellis cover crops for vigor control (or weeds) can aggravate N availability to vines (vines might need more N applied if intra-row cover crops are used than if under-trellis herbicides or other weed management techniques are used).
- Make sure that applied nutrients are incorporated, as by cultivation or rainfall. Soil-applied nutrients will be unavailable to the plant unless there's sufficient incorporation and soil moisture to get the nutrients to the roots.
- Don't apply what's not needed. Use plant tissue analysis, soil testing, and visual observation to determine nutrient needs. We continue to recommend either the Penn State plant analysis lab or A&L Eastern Laboratories for submission of plant tissue analyses. IMPORTANT: You can submit plant tissue samples directly to these labs with the appropriate submission forms: Penn State plant analysis forms are available at: <http://www.aasl.psu.edu/>. Click on "submitting samples" on the menu on the left-hand side of screen. A&L Eastern Laboratories also has submittal forms for plant tissue samples at their website (<http://www.al-labs-eastern.com/agricultural.html>). We will provide feedback to you on tissue analysis results if desired, but you will need to contact us (vitis@vt.edu) and request the recommendation once you receive your lab results.

Insects: Scout for grape berry moth infestation in developing grape clusters. Insecticide options, if warranted, are in the current Pest Management Guide, which is available here: (<http://pubs.ext.vt.edu/456/456-017/456-017.html>).

We often see various galls on vines at this time of year – some are important and some are not: tomato tumid galls, which appear as pea- to marble-sized, often reddish galls on shoot stems, cluster rachises and sometimes leaf petioles may be present, but are generally inconsequential (<http://www.virginiafruit.ento.vt.edu/grapegalls.html>). These and similar galls, some more conical in appearance, are tissue overgrowths caused by egg-laying of small insects (midges). They are entirely benign and unless you have a very unusual situation, they do not warrant removal or other control measure. Enjoy them for the biotic diversity that they represent.

Aerial phylloxera becomes apparent at this time of year on some varieties (esp. some hybrids) and may warrant insecticidal control if historically severe in your vineyard (see the PMG).

Grape cane girdlers cause shoot damage by the sequence of egg-deposition in succulent shoots, and the subsequent breakage of those shoots. Generally, the shoot breakage occurs well above grape clusters and, despite the immediate appearance of the broken shoots, lateral development on the injured shoots will soon replace the leaf area necessary to ripen grapes on the affected shoots. If you believe that insecticidal control is warranted (>10% of shoot breakage has occurred in previous years), the insecticide (see PMG for current recommendations) should be applied when shoots are 4 to 6 inches long (now).

Periodical cicadas: Brood emergence of 17-year periodical cicadas will occur in parts of the Shenandoah Valley in 2012, but more generally in northern and central piedmont in 2013 (Note, Augusta County is unique in that emergence here will generally occur in 2015). Damage can occur to canes and shoots of grapevines by egg-laying adults. Insecticidal control is difficult to achieve as the adults do not use the grapevines as a food source. Netting is an option. Young vines – particularly those being trained – are most at risk. Planting vines the year of, or more conservatively, the year before an emergence, is one means of minimizing the potential impact. See <http://pubs.ext.vt.edu/444/444-276/444-276.html> for detailed maps of emergence locations by year.

Question from a vineyard meeting: Thanks for the information on periodical cicadas, but I just planted in an area where emergence is expected in 2013. We should have had this information last year.

Answer: You might have missed it, but we covered the subject rather extensively in the March-April 2011 Viticulture Notes, which can be found here: <http://www.ares.vaes.vt.edu/alson-h-smith/grapes/viticulture/extension/news/vn-cms-archive.html>. The article has some details about potential means of vine protection (limited) as well as consequences of egg-laying damage.

Grape root borer: Isomate GRB mating disruption technology will be available for 2012. Grape root borer has been a difficult pest to control, and has been increasing in severity in Virginia vineyards. A (pheromone) mating disruption product, **Isomate GRB**, is now registered for grape root borer management. The label is available ([Great Lakes IPM](#)), as is the MSDS ([Pacific Biocontrol](#)). The rope-style (twist-tie) pheromone dispensers should be placed in the vineyard the last week of June, at a rate of 100 ropes per acre. Additional instructions are found on the label. It is important to continue use of Isomate GRB for consecutive seasons. Local agrichemical companies in Virginia are also carrying the Isomate GRB dispensers.

Virginia Cooperative Extension's Pest Management Guides: Just a reminder (the PMGs have been on-line for some time), **grape** chemical pest management guidelines are provided in the Pest Management Guide, updated annually, and found at: http://pubs.ext.vt.edu/456/456-017/Section-3_Grapes-1.pdf

Other threats:

Hail: Hail hits at least one VA vineyard per year and injury can range from the occasional torn leaf and bruised berries (almost always on the exposed portion of the cluster) to dings on shoot stems and even defoliated vines. The minor symptoms may be difficult to trace to hail, while there is no mystery about the latter. There's not a lot you can do after a catastrophic hail storm. The vines will usually grow back out. Damage to fruit (bruises, sunken regions on the berry, exposed seeds, etc.) may lead to disease if the weather remains wet, but these injuries usually dry up with pre-veraison berries. A botrytis-specific fungicide might be warranted with botrytis-susceptible varieties that have been hit by hail.

2,4-D herbicide drift: Often associated with no-till corn production. Alert neighbors to the sensitivity of grapevines to phenoxy-type herbicides. Early season damage not quite as severe as late-season, provided it does not occur right at bloom or fruit-set. Communication is extremely important, but is not always entirely effective.

Disease management updates: Be sure to visit Dr. Mizuho Nita's grape disease web blog (<http://grapepathology.blogspot.com/>) to stay abreast of disease development and for useful links to the more in-depth disease (and other pest) management information. Dr. Nita updates the blog almost daily and there is a tremendous amount of information posted there, including fungicide efficacy data from his 2011 trials (Dr. Nita discussed those trials at the VA Vineyards Association's winter technical conference in early February), a spray schedule "template" that organizes your disease management strategy, and much, much more.

II. Upcoming meetings:

The following meetings are listed in chronological order. Some will be more applicable to readers in Virginia than will others. Some are listed for regional readers. The list is not intended to be exhaustive of all viticulture meetings in the region, but does focus on some that I (TKW) am involved with.

10 May 2012

What: Webcast (computer and internet connection required to "attend")
Innovative Under Vine Management Strategies Webcast

Who: Hosted by Alice Wise and Libby Tarleton, Cornell Cooperative Extension of Suffolk County (NY)

When: Thursday, May 10, 2012, 3:00 – 4:30 pm

3:00-3:45 Dr. Tony Wolf, Virginia Tech

Intrarow cover crops and other practices to favorably alter vine growth and canopy architecture

The presentation will focus on research and grower experience using intrarow or under-trellis cover crops to (a) reduce soil erosion and to (b) suppress vegetative growth of vigorous grapevines under conditions of excess soil moisture. The discussion will also describe how canopy architecture is favorably altered by such treatments which can have a bearing on fruit composition and wine quality attributes such as color density, but also on pest management (Presentation is similar to presentations provided in the Finger Lakes (March) and at the VA Vineyards Association's winter meeting (Charlottesville).

3:45-4:30 Dr. Ian Merwin, Cornell University

Vineyard Floor Management and Soil Health

Different systems for managing vineyard soils and ground-cover vegetation influence soil fertility and functionality, soil water retention and release, soil biological activity, vine nutrition, vigor and berry composition, and the natural environment around vineyards and wineries. This presentation will describe some long-term effects of mulches, legume ground-covers, mechanical tillage, and different herbicides on important soil attributes that are often called 'soil health'. In addition, research on pesticide contamination of soils and surface water around vineyards will be reviewed, and suggestions will be made on ground-cover management systems that promote vine and soil health.

Pre-registration is required. To preregister, please contact Alice Wise or Libby Tarleton @ 631-727-3595 or lt68@cornell.edu at least several days prior to the presentation, details on connecting to the webcast will be e-mailed to registrants.

23 May 2012

What: Pennsylvania Viticulture and Enology Research Symposium

Where: Penn State campus, State College, PA

Topics: An opportunity for growers and wine makers to learn about the latest in V&E research and how the Pennsylvania Wine Marketing and Research Program is utilizing its resources. Topics include vine vigor control, cold climate viticulture, grape berry moth control, spotted wing drosophila update, botrytis research, YAN and fermentation, current enology and sensory research at Penn State, and a tasting of NE-1020 wine grape varietal wines made by Denise Gardner. You can read a [full program](#), access [registration and information](#) (including meeting location and parking information), or go directly to [on-line registration](#).

Information: Contact Mark Chien of Penn State Cooperative Extension: Tel: 717.394.6851
E-mail: mlc12@psu.edu

6 June 2012

What: VA Cooperative Extension and Loudoun County Winegrowers vineyard meeting

Where: Willowcroft Farm Vineyards and Stone Tower Winery, Loudoun County

Start time: 6:00 pm at Willowcroft Farm Vineyards; move to Stone Tower Winery at 7:30 pm; technical meeting concludes approximately 9:00 pm.

Presenters: Tony Wolf, Mizuho Nita, Bryan Toy, Dean Triplett, Tremain Hatch

Topics – Seasonal viticultural and pest management reminders, North American Grapevine Yellows, planting density, and trends in vineyard installation. The Loudoun County Winegrowers business meeting will follow the vineyard tours.

Directions: Willowcroft is located ~7 miles south of Leesburg. Drive south from Leesburg on Rt. 15, and take a right onto Harmony Church Road. Drive ~3 miles to take a left on Loudoun Orchard Rd. Stay left to remain on Loudoun Orchard road ~ 3 miles. Turn right at T-intersection on Mt. Gilead Rd.

To Stone Tower from Willowcroft – Turn left onto Mt. Gilead continue for ~1 mile and turn right onto Hogback Mountain Road vineyard will be on right in ~1 mile.

Contact: Tremain Hatch, Virginia Tech (thatch@vt.edu) or [\(540\) 869-2560 x11](tel:5408692560)

14-15 June 2012

What: Canopy Management Workshop, VVA summer Social, and Spray Technology Workshop, all in 2 days!

Where: AHS Jr. Agricultural Research and Extension Center (AREC) 595 Laurel Grove Road in Winchester located in Frederick County, Virginia, near Winchester (Frederick County) (www.arec.vaes.vt.edu/alson-h-smith/index.html).

Details: Here's a 2-day event that you're going to regret if you miss. Virginia Tech's AHS Agricultural Research and Extension Center (AREC) will host a Grapevine Canopy Management Workshop on Thursday, 14 June 2012. The workshop will feature specialists from Virginia Tech, Cornell, and Texas AgriLife Extension. The workshop will be immediately followed by the Virginia Vineyards Association's Summer Social, also at the AREC, and featuring a catered meal, wines, a band, and plenty of opportunity to socialize with your fellow wine growers. Arrangements have also been made for an all-day sprayer calibration/spray technology workshop the following day (15 June) featuring Dr. Andrew Landers of Cornell University. The spray technology meeting on the 15th will include both classroom training and field demonstrations, and is targeting both wine grape producers and tree fruit (orchard) producers. Our [website](#) has the latest information on the Summer Technical and Spray Workshop, including workshop schedules and social details.

Hotel Reservations: Winchester and the Frederick County area have a number of hotels, motels and B&Bs. We have made arrangements, however, with one of the closest to the AREC, the [Holiday Inn Express-Stephens City](#) at [\(540\) 869-0909](tel:5408690909). The HI-Express has blocked a limited number of rooms for us at a special rate of \$72/night. ***The Holiday Inn Express has a cut-off date of May 31, 2012 at 5:00 PM, to receive the special pricing of \$72.*** Any reservations received after the cut-off date of May 31st will be accepted on a space and rate availability basis.

For VVA members (or others) who only want to attend the social and are looking for ways to spend the afternoon the hotel is conveniently located near many attractions. For the outdoor enthusiasts [Glen Burnie Gardens](#), [Skyline Drive National Park](#), [Skyline Caverns](#), and many hiking trails are close-by. For history buffs there is [Belle Grove Plantation](#), [Stonewall Jackson's Headquarters](#), [George Washington's Office Museum](#), and the [Museum of the Shenandoah Valley](#). Other activities include [Farmer's Markets](#), Tea Houses ([Sunflower Cottage](#)), [Wayside Theatre & Inn](#), and [Old Town Winchester Historic Walking Mall](#).

Additional information, including programs and registration information, is attached with this newsletter.

Industry and academic positions available

The following positions and potential positions are available and are listed here as a community service

Enology Extension Specialist

Department of Food Science and Technology
Virginia Tech

The Department of Food Science and Technology at Virginia Tech located in Blacksburg, Virginia is currently recruiting an Enology Extension Specialist. This position is a 100% extension, full-time (12 month) non-tenure track appointment in the Food Science and Technology Department. The primary responsibility of this position will be to expand the educational resources available to Virginia grape and wine producers. The successful candidate will support the growth and development of Virginia's wine industry through the expansion of educational extension programs and applied enological research; provide written and oral educational resources to existing and potential wine industry practitioners; and provide an educational bridge between vineyard practices and the wine production practices that directly impact wine quality.

MS in food science or related discipline is required but a PhD is preferred with education and/or experience in best management practices for enology and viticulture. Preference will be given to candidates with effective communication skills and ability to work within a team environment.

For more information about the position and/or to apply, please visit:

<https://listings.jobs.vt.edu/applicants/Central?quickFind=195354>.

Vineyard foreman

Breaux Vineyards
Purcellville, VA

The Vineyard Foreman is responsible for maintaining Breaux Vineyard's 105-acre vineyard and installing future estate vineyards under the advisement of the Vineyard Consultant. This full-time position reports to the General Manager. Job duties include a comprehensive involvement in all aspects of vineyard management, including labor training and management. Occasional assistance in winery operations and machinery maintenance also anticipated. For further details, contact: Christopher M. Blosser, General Manager, Breaux Vineyards, Ltd. 36888 Breaux Vineyards Ln.; Purcellville, VA 20132
540-668-6299 x 208

Internships available:

Attimo Winery is pleased to announce the formation of a formal Scholar Internship Program for horticulture, viticulture, enology, and related majors. There will be up to 6 summer internship positions available from May 1, 2012 through August 31, 2012. Over the 4 month period, interns will be exposed to various aspects of the vineyard and winery business and will rotate through several areas (see attached). Our main goal here is to provide quality internship

opportunities to our fellow Hokies and alma mater. We have a very experienced staff, we are located in Montgomery County, and, have already established a strong foundation in the Virginia Winery Industry with several award winning wines. All applicants must be majoring in a BS or MS program in Horticulture, Viticulture, enology, or closely related field. All applicants must be 18 or older (>21 preferred) and have reliable transportation and successfully complete the interview process. For more information and to apply, please send the following to Dr. Richard Obiso at wine@attimowinery.com and Kate Hrezo khrezo@attimowinery.com:

- Current resume/CV
- List of classes completed
- Schedule/Availability during the period May 1 - August 31 2012

Vineyard manager/viticulturist

The Williamsburg Winery
Williamsburg VA

The Williamsburg Winery is seeking a qualified Vineyard Manager/Viticulturist to oversee the daily operations of the vineyards as well as develop future vineyard blocks. The candidate will work very closely with the winemaker and other senior officers of the company to insure a successful and pleasant working environment. Salary is commensurate with experience.

Chosen candidate, after formalization of engagement, will have the use of a Company pick-up truck. Other benefits include medical coverage and a 401k program. Contact Information: Matthew G.R. Meyer (mmeyer@wmbqwine.com).

Vineyard and winery internship available:

Hillsborough Vineyards is seeking to hire an intern to work in the vineyard and winery. The employment has the potential to lead to full-time employment as assistant winegrower. If interested, please contact Kerem Baki at Hillsborough Vineyards, 540.668.6216 x208 kerem@hillsboroughwine.com