Virginia Cooperative Extension
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Viticulture Notes..... Vol 32 No. 3 (July 2017)

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I. Current situation

The recent Virginia Vineyards Association summer technical meeting, held in conjunction with the Eastern Section of the American Society for Enology and Viticulture annual meeting in Charlottesville last week, provided a forum on seasonal progress. Members Ben Renshaw, Rock Stephens, Lucie Morton, Robbie Corpora and Tom Kelly provided a geographically diverse panel on where we stand in mid-July 2017. The consensus was that most of the state is running 10 to 14 days ahead of the calendar in terms of vine phenology and grape development; early varieties are moving into or are well into véraison, depending on location within the state. Reflecting on the temperature swings of winter and ensuing spring, there was a collective sense of surprise that spring frost was generally not a more significant issue. Bud burst was generally early, and with some exceptions, fruit set progressed well despite a rather protracted bloom period in a number of vineyards. Pest and disease pressure seems to be about average – but see my comments below on seasonal reminders. Japanese beetle pressure is moderate/average – a single carbaryl spray has been sufficient in our research vineyard in Frederick County, but vineyards in central Virginia and those east of the Blue Ridge are finding that multiple insecticide applications are necessary. Several vineyards are now using modified herbicide boom sprayers where the boom is located behind the tractor, just above the vineyard rows. The spray is deposited downward at relatively low pressure such that only the top of the canopy, where the beetles are feeding, receives the spray. This effectively reduces the overall pesticide rate of application and puts it only where it's needed. Rock Stephens, who farms on the Eastern Shore, discussed his experience with Pierce's Disease. The area is a high pressure area for the lethal disease and, without management, some growers have lost 1 – 2% of their vines in some years. Rock has been using imidacloprid insecticide (Admire-Pro, a single, 14-oz/acre application) distributed to the soil via his irrigation system. Since introducing this management strategy some years ago, Rock has lost few vines to PD. A number of growers are lamenting that the accelerated pace of the 2017 season has left them scrambling to catch up. Fruit zone lateral shoot removal and leaf thinning are still going on in some vineyards. Readers are reminded that fruit is much more susceptible to sunburning at this point in development than were it to be done earlier in the season. Use extreme caution when thinning leaves now. With the forecast for generally hot, dry weather for the rest of July, the potential for sunburning is further increased. Despite the increased interest in more severe leaf pulling for

various reasons, I would urge some restraint if you are just now getting to this management practice in your own vineyard: consider a graduated process of increasing leaf removal over time, rather than trying to fully expose clusters in one pass.

II: Seasonal reminders:

The following are a couple of opportunities and issues that might be of interest at this time.

First, I would call your attention to a couple of meetings/events coming up in the next month that might be of interest to you, particularly if you're a new or prospective grower. These are described in more detail in Section III: Meetings, below and in the attached, and comprise an interpretative tour of several northern Shenandoah Valley vineyards on 2 August, and a combined New Grower/Advanced producer workshop at Rosemont Vineyard (Mecklenburg County) on 16 August.

Grape berry moth injury: Grape berry moth injury is insidious. One may think it's not happening, that the fruit is escaping the notice of the moths, and that no insecticide sprays are warranted. And then it's suddenly in your face obvious. Do some careful scouting and, if you've sprayed an insecticide for GBM, cut affected berries open to see if the larvae are still alive. Ignore the well-exposed, loose clusters on the vine. Go right to the densest part of the canopy where clusters are shaded. This is where the moths prefer to lay eggs and this is where you'll see the greatest infestation. Look first at rows along wooded borders of the vineyard. Grape berry moth-affected berries may be completely dried at this point, or they may be showing very early stages of larval development in which the berries may still be turgid, but showing discoloration. Affected berries are often towards the inside of the cluster. While the direct loss of crop due to GBM can be a minor issue, the presence of injured or dead tissue in the cluster is a major catalyst for botrytis development with the return of cooler, wet weather later in the summer and fall. Take what steps you can now to limit GBM infestation. Again, many options are listed in the current Grape Pest Management recommendations.

Figure 1 Cabernet Sauvignon cluster with several berries that have been damaged by grape berry moth (two within circle).

Drought stress: Rainfall can be very spotty at this time of year and July is shaping up to be a hot, dry month in many locations. Be mindful of young vines and those on soils that might have low water holding capacity. I spent much of yesterday repairing irrigation lines and getting water to a set of our research vines that are purposefully restricted in their root development – these vines have all the symptoms listed in the "severe water stress" column of Table 1, below. While reduced water availability can be helpful to slow vine vegetative vigor, it's undesirable to have such a high degree of stress that canopy function – carbon assimilation – is impaired, particularly after véraison. The following is a short discussion of drought symptoms and impacts modified from an older Viticulture Notes:

One of the first signs of drought stress is a change in the appearance of the vines. Rapidly growing shoot tips of well-watered vines appear soft and yellowish or reddish green. As soil moisture becomes limiting, the rate of shoot growth slows and the shoot tips gradually become more grayish green, like the mature leaves. Tendril drying and abscission is also a useful early indicator of vine drought stress. As stress intensifies, leaves appear wilted, particularly during midday heat. Under prolonged stress, exposed leaves may become chlorotic (yellow), starting at the base of the shoot. This should not be confused with the yellowing and senescing of shaded leaves, which results from lack of sunlight. Drought can induce a range of nutrient deficiencies, such as nitrogen, potassium and/or magnesium deficiency and foliage may exhibit marginal yellowing (white-fruited varieties) or reddening (black-fruited varieties). Severe stress will lead to desiccation and abscission of affected leaves. Discoloration and abscission commence at the base of the shoot and progress up the shoot as stress intensifies. Water-stressed fruit exposed to the sun can sunburn and shrivel, much like a raisin. The visual symptoms of drought stress are summarized in Table 1. In addition to visual indicators, vine water stress can be measured with special instruments. Some instruments measure the water status of vines, whereas others measure the moisture status of the soil. Hand-held, infrared thermometers can measure the temperature of vine canopies. Leaves of well-watered vines are generally cooler than the air temperature, even during the hottest period of the day. The leaves of water-stressed vines are often warmer than the surrounding air because of reduced transpirational cooling. The leaves heat because the stomata of the leaves close as the water status of the vines becomes limiting. This closure conserves the remaining water in the leaf, but the "cost" of this water conservation is decreased sugar production. With stomata closed, carbon dioxide cannot enter the leaf and the photosynthetic conversion of carbon dioxide into sugars will not occur. The impairment of the photosynthetic processes will generally occur before leaves are visibly wilted. Reduced photosynthesis can explain why fruit fails to ripen during periods of water shortage; little or no sugar is being manufactured. A point will be reached during a drought at which the daily stress of insufficient water will have an irreversible impact on the vine's performance. By the time leaf wilting occurs, vines are severely stressed.

The impact on young vines can be particularly dramatic and the stress at this time of year can negatively affect the vines' ability to withstand challenging winter temperatures.

Table. 1 Visual indications of increasing drought stress in grapevine.

Observation	Surplus moisture	Slight to moderate water stress	Severe water stress
Tendrils	Turgid, extending well beyond shoot tip horizontally or upright	Drooping	Yellowed or dried
Shoot tips	Actively elongating	Compressed	Aborted
Leaf orientation to mid-day sun	Blade is perpendicular to incident sunlight, receiving full sun	Leaves appear to droop, blades not oriented to receive full, direct sunlight	Leaves may be rolling or actually dried
Leaf temperature (check with infrared thermometer or simply press between palms of hands)	Cooler than our body temperature, even at mid-day (at or below ambient temperature)	Warm to touch at mid-day (> 100°F)	Much greater than 100°F
Leaf color (basal to mid-shoot leaves)	Vibrant green	Grayish-green to light green	Light green or yellowing; abscising
Fruit cluster	Normal berry set and turgid berries	Set may be reduced	Cluster rachis tips may dry if stress occurs during bloom; fruit set may be reduced; berries may become flaccid if severe stress occurs post- véraison

While we are interested in reducing some water availability to the vine in the bloom to véraison period to throttle back vegetative development, we do NOT want to impose water stress on the vines after véraison. If irrigation is available, we'd choose to supply enough water post-véraison to keep the leaves functioning optimally, but not so much water as to stimulate lateral shoot development. How much water this balancing act takes depends on many factors. It depends on evapotranspiration rates; it depends on soil depth and root system development; it depends on natural precipitation; it depends on crop load – heavily-cropped vines require more water for ripening than do lightly-cropped vines. And, of course, it depends on whether you have an irrigation system in place.

III. Pre-harvest considerations:

This is a good time to look ahead at and prepare for the coming harvest; for sparkling wines, harvest will commence in the next 30 to 45 days. We're seeing the first indications of color change

associated with véraison in early reds (e.g., Merlot) in central VA, so points further south are likely already into véraison. In case you failed to notice, the 2017 season is running early – perhaps as much as 2 weeks in some locations. Hot, generally dry weather is likely to advance harvest and might catch you by surprise if you're thinking calendar date and not maturity date of your crop.

A check-list of pre-harvest activities would include the following, at minimum (alas, some of these are "seasonal reminders" as well):

Canopy management: Do a final check of the vine canopy. Prematurely senescing, yellowing leaves should be removed from the fruit zone. They do not contribute carbohydrates to fruit maturity and may in fact contribute potassium to ripening fruit. Elevated potassium in fruit can, under certain conditions, lead to elevated fruit pH. Leaves also retard the drying of clusters when those leaves are in contact with clusters, and they can promote botrytis development on fruit in both direct and indirect ways. You needn't denude the fruit zone of leaves, but *most* clusters should be getting *some* direct sun exposure at *some* point during the course of a day. Aim to keep leaf layers in the fruit zone of the canopies down to 1 or at most 2: a real or imagined probe run through the canopy should contact no more than 1 or 2 leaves on average as the probes passes from one side of the canopy to the other. The potential for sunburning fruit is very high at this time of year and as I indicated in the Current Situation, above, one should use extreme caution in exposing shaded fruit to direct sunlight at this point in the season, particularly if the vines are under any drought stress. Look for congestion at the tops of hedged VSP-trained canopies. If the hedging was not done in a timely fashion, the shoot tops might be growing horizontally along the top wires. Normal hedging can also produce several laterals where there was originally only one growing point. Collectively, this lateral growth can create very dense regions at the top of the canopy. It is often in these shaded, poorly ventilated regions that downy mildew gains a foothold on young, susceptible leaves.

Crop management: It's not too late to reduce crop levels on vines that are carrying a heavy crop. Clusters at 50% véraison weigh about 80% of their harvest weight and fruit at 15 to 17°Brix will essentially represent final weight, with some variation due to precipitation extremes. A much more thorough description of crop estimation is provide in our Wine Grape Production Guide. If you failed to collect mid-season cluster weight data you can still estimate crops and make downward adjustments to the crop if you feel that the crop level is excessive. As I've used in previous communications, a starting point in deciding on an optimal crop level for mature vines is to target a range of about 1.0 to 2.0 lbs of crop per foot of canopy (or simply 1.5 lbs). It's a "starting point". Your own experience and goals will dictate whether you can push that figure up or whether it should be reduced, and of course the season has a bearing on a tolerable crop level.

Pest management: First, review pesticide label Pre-Harvest Intervals (PHIs) before you apply any additional pesticides. Table 2 is a short table of pesticides (insecticides, miticides and fungicides) that have PHIs greater than 20 days. In addition, many products carry a 14-day PHI. READ the pesticide label or refer to Table 3.4 of the 2017 Grape Pest Management Guide

(http://www.pubs.ext.vt.edu/456/456-017/456-017.html) to ensure that you're not going to get caught out by applying a product within the PHI.

Table 2. Pre-harvest Intervals (PHI) for selected pesticides used in grape crop protection. In addition to the products listed here, many other commonly used pesticides have 14-day or longer PHIs.

Product	Target	PHI
Mancozeb (Ridomil, dithane, Manzate, etc.)	Downy mildew	66
Ridomil Gold Copper	Downy mildew	42
Tanos	Downy mildew	30
Sniper, Brigade (bifentrin)	Insects	30
Applaud	Leafhoppers and mealybugs	30
Intrepid	Grape berry moth	30
Onager	mites	28
Ranman, Reason	Downy mildew	30
Vendex	mites	28
Agri-mek	Mites	28
Diazinon	Insects (SWD)	28
Ziram	Downy mildew	21
Aprovia	BR, ripe rot?	21

BR = black rot; SWD = spotted wing drosophila.

If you've done a good job with disease control up until now, you will find it much easier making it all the way through harvest; if not, you may still have a fight on your hands, particularly with powdery mildew (PM). Berries are less susceptible to PM infection once they attain about 8° Brix. Fruit may, however, continue to show lesion development from infections that occurred up to one month ago. Low levels of PM may exist on fruit, even with apparent "good" prevention programs. The "inconspicuous" mildew can increase fruit susceptibility to botrytis and other rots later in the season. Powdery mildew fungicide options in the pre-harvest period are constrained by label pre-harvest intervals (PHIs) and the need (or at least desire) to avoid sulfur residue on harvested fruit, which can occasionally lead to sulfide production and off-odors in wine. It is advisable to avoid sulfur application within 6 weeks of harvest if at all possible. Fungicide and other pesticide options

are provided in the Virginia Cooperative Extension Pest Management Guide (https://pubs.ext.vt.edu/456/456-017/456-017.html).

Botrytis: Botrytis incidence varies from year-to-year, but we tend to have greatest problems in large, compact clustered varieties such as Seyval and Chardonnay. Culturally, the incidence of botrytis can be greatly reduced by removing leaves that are directly touching clusters, and generally opening the fruit zone to aid air movement and improve spray coverage. It's certainly not too late to do some follow-up leafing in botrytis-prone cultivars, but avoid pulling too many leaves that could result in sunburning of fruit (see comments above under *canopy management*). Fungicide options, specific for botrytis, are provided in the Virginia Cooperative Extension Pest Management Guide (https://pubs.ext.vt.edu/456/456-017/456-017.html).

Downy mildew: Conditions that favor the spread of downy mildew (DM) are temperatures of 65 to 77°F and free moisture. A summer late-day shower followed by a humid evening creates the perfect scenario for a downy infection. Fruit becomes resistant to infection as it develops; however, young leaves (such as on laterals) are highly susceptible, and this is often where late-summer infections develop. To avoid a potential defoliation, continue a downy mildew protection program through harvest. Fungicide options are provided in the Virginia Cooperative Extension Pest Management Guide (https://pubs.ext.vt.edu/456/456-017/456-017.html). In our own vineyard, we bank a little heavier on the use of the phosphorus acid materials, and an occasional use of captan in late-summer, trying to lay off applications within 30 days of harvest. Watch the Pre-Harvest Intervals (PHIs): some of the insecticides and even a couple of fungicides (e.g., Ranman and Reason, both of which offer DM protection) have 30-day PHIs, while Ridomil+Copper has a 42-day PHI. Don't get caught out on this technical label restriction, and bear in mind that the 2017 season is on track to be an earlier than normal harvest.

Birds: Be ready for bird control. Again, the season is running early – the birds will be ready. Are you? Once we start seeing color change in our reds, we want to be prepared to put up bird exclusion netting. We've used the round hay bale netting over the past 10 years or so and for us it works. We pin the bottom of the two panels, sandwiching the fruit zone of the VSP-trained vines. Birds don't seem to mind flying *up* into the fruit zone through openings in the panels, but I've not seen them fly *down* into the sandwiched canopy, so we pay more attention to closing the bottoms of the panels than worrying about the tops. We play out the 51" wide netting from a vertically-mounted spool in the back of a 'Gator. If you want photos, just ask (vitis@vt.edu). Nothing fancy, but it works for us. I see many growers using the permanently mounted vine-side netting which is rolled up and "stored" below the canopy of VSP-trained vines, and pulled up and into place only after the last of the leaf-pulling is done at or just before véraison. More costly upfront, but faster to deploy and perhaps cheaper in the long-run. I don't have a recommendation on brands (but this would be a good topic for a VVA grower session [hint]).

Other wildlife: Hot, dry weather can increase wildlife pressure on ripening grapes if other food sources become limited. Be proactive on deer, raccoon and bear exclusion fencing if these animals are customary visitors to your vineyard.

Grow tubes: As a reminder to anyone using grow tubes, the tubes should be removed from vines by 1 September to allow vines to normally acclimate to fall conditions. DO NOT leave the tubes on over winter. We have seen ample evidence that vines can be severely damaged by winter temperatures if the vines remain in tubes over winter.

Nitrogen management: Graduate student Russ Moss provided a short article on the use of foliar urea to increase Yeast Assimilible Nitrogen (YAN) in grapes in a 2015 Viticulture Notes. I'll write a more comprehensive article on this subject later this year, but in the interest of time, if you have chronically low YAN levels in fruit at harvest, foliar application of urea around véraison is an effective means of increasing YAN, without stimulating greater vegetative vine growth. We got started with this work when we were trying to improve the efficiency of N application with cover-cropped vines. Vines of low to moderate vigor may produce wines of higher aromatic intensity when compared to vines with excessive vegetation. However, low fruit nitrogen (YAN) status, which can be exacerbated by cover cropping, can lead to lesser aromatic intensity in the resulting wine. When YAN is limiting (<150ppm for a must at 24^{o}Brix fermented to dryness) it can lead to fermentative off aromas and even a stuck or sluggish fermentation. While low YAN can be addressed by exogenous N application in the winery, there is some evidence that correcting the YAN levels in the vineyard is a superior approach. We have been exploring nitrogen fertilization strategies specific for vineyards that are intensively (inter- and intrarow) cover-cropped. While some of the original intention of cover cropping was to *reduce* vine size and vigor, we have seen commercial situations where vine capacity (vine size + vine crop yield potential) has been excessively reduced while juice YAN levels have been concomitantly severely depressed. Part of our rationale for the foliar application of N was to direct more of the fertilizer N to the grapevine, and less to the cover crop.

In a long-term study with Sauvignon Blanc, we found that soil application of N to these cover-cropped vines was effective in increasing vine capacity – both crop level (Figure 2) and vine pruning weights (Figure 3); however, the increased vine capacity was only achieved after several years of N application. In this work, N was applied to the soil at either 30 or 60 kg/ha as calcium nitrate, or to the foliage as urea at 30 kg/ha (all figures are rates of actual N). The foliar applications were made as six separate applications of 5 kg each. 30 kg/ha is equivalent to 27 lbs/acre. The foliar urea was as effective at the 30 kg/ha soil-applied rate at increasing crop and increasing vines size. The 60 kg/ha N rate, which was applied in a split application, was superior to other treatments in increasing vine capacity.

The most dramatic impact on YAN occurred with the foliar-applied N (Figure 4). We have also seen this response to foliar urea in our similar work with Petit Manseng and with Vidal blanc as well (as have other researchers). Although the Sauvignon blanc experiment involved a season-long

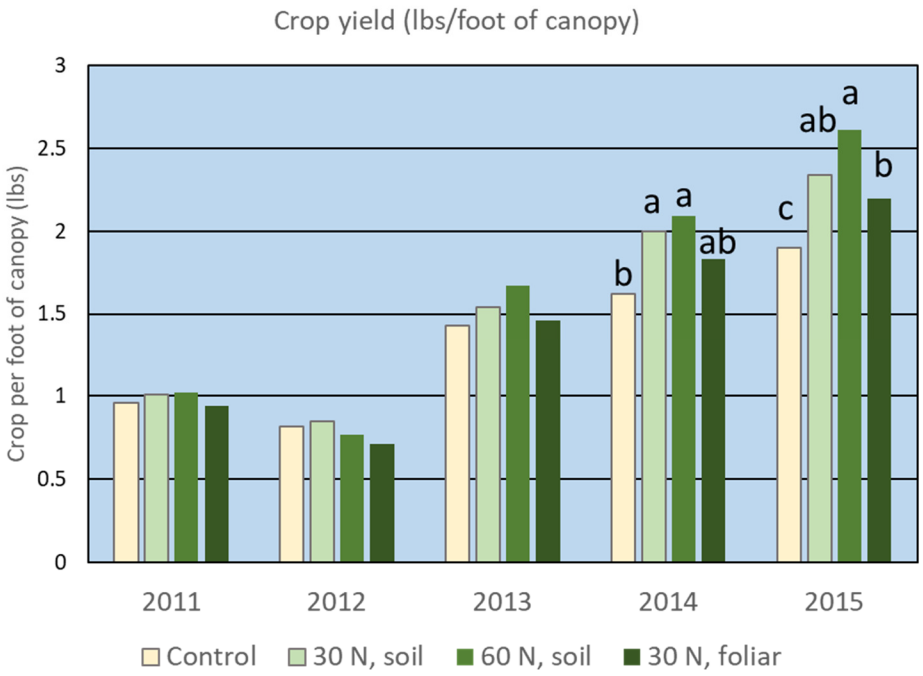

Figure 2. Sauvignon blanc crop per foot of canopy at different levels of soil-applied N, compared to foliar-applied N.

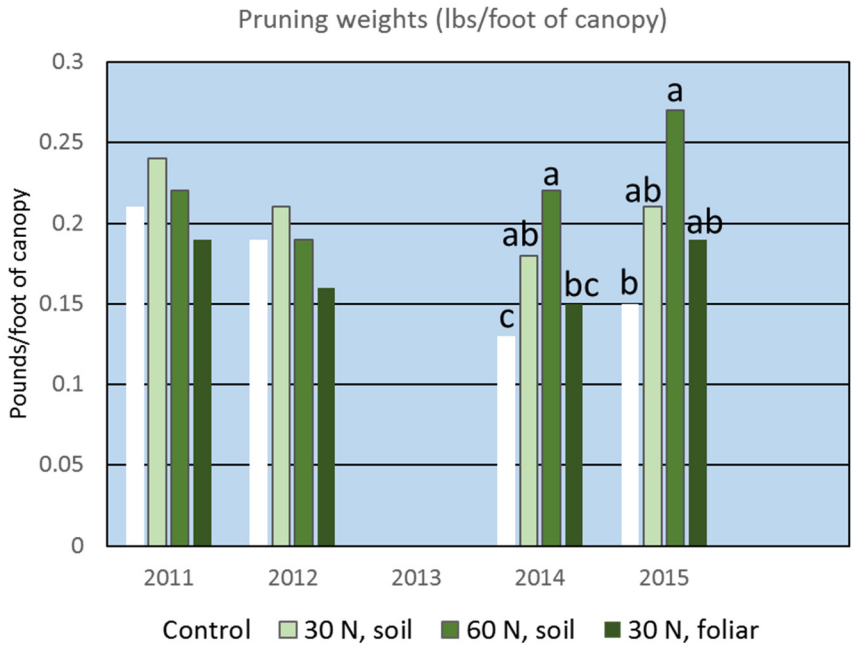

Figure 3. Sauvignon blanc cane prunings per foot of canopy at different levels of soil-applied N, compared to foliar-applied N. An optimal "vine size" would be about 0.25 to 0.40 lbs/foot of canopy. Pruning weight data were not collected in 2013.

application of urea (six applications), we have observed that just 2 applications of urea around véraison produced a similar, dramatic increase in YAN. Thus, an application of urea now, followed by a second application in 2 weeks, could be beneficial in chronically low YAN vineyards.

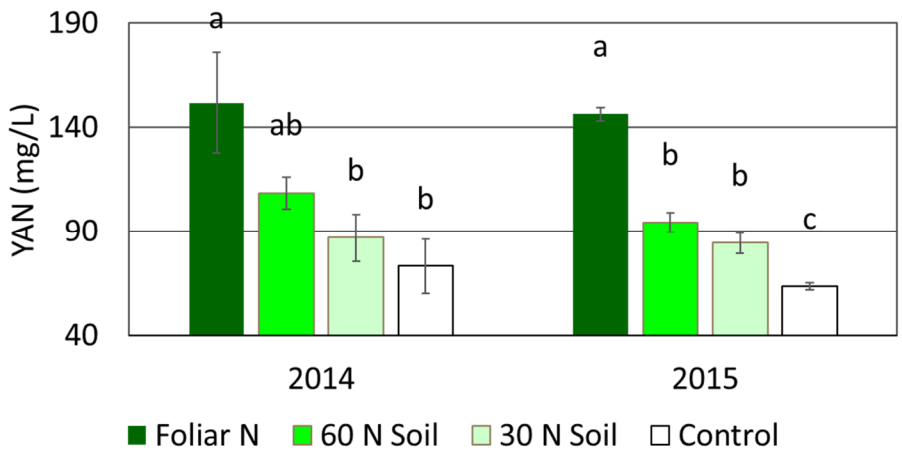

Figure 4. Yeast Assimilible Nitrogen (YAN) levels in Sauvignon blanc fruit at harvest as a function of soil- and foliar-applied N. For our purposes, we wished to achieve around 140 mg/L YAN.

Practical application: Foliar nitrogen should be applied in the form of urea. Due to the nature of urea (high solubility and small molecular size), it will be rapidly absorbed by the plant. However, urea can burn the foliage, so in order to avoid this potential problem, one should use a relatively high water to urea ratio. In this study, I have used water rates of approximately 107 gallons/acre with no more than 6.7 lb of actual N applied per acre per application. The high water rate allows for not only dilution of the urea and lesser chance of leaf burn, but it also facilitates greater absorption of the urea by the plant. Lower water rates can be used, however one may increase the risk of burning the foliage. In order to lessen losses due to volatilization and foliar burn, one should apply urea to the foliage during the cooler hours (i.e. early morning, in the evening or night). Also, one should avoid applying urea with horticultural oils or Captan, as to avoid a phytotoxic response. Urea is likely compatible with other commonly used fungicides, however one should always check with the manufacturer before mixing urea with another chemical. In our work, we have successfully mixed urea with sulfur without adverse effect.

It should be noted that the best time to apply foliar urea is around véraison. Véraison marks a period when the fruit becomes a major "sink" for nutrients and carbohydrates, therefore the nitrogen taken up around this time will be much greater than if urea is applied earlier in the season.

A caveat: Higher YAN concentrations can lead to a greater risk of fruit botrytis infection. It would be wise to monitor closely for botrytis after spraying urea and consider including a botrytis-specific fungicide following the completion of urea sprays. Anecdotally, we have not seen a greater severity of botrytis infections within the foliar applied urea plots when compared to other treatments.

Conclusion: Nitrogen management in a cover-cropped vineyard can be tricky. However, if done utilizing foliar applied urea around véraison, the clever vintner can cost effectively make significant improvements to the resulting wine. If one is to apply foliar urea then the following parameters should be adhered to in order to minimize risk and maximize potential benefit:

1. Apply no more than ~6.7 lbs. N/acre at any one time (make multiple applications as needed)
2. Use high water rates when making applications (~100 gallons/acre preferred)
3. Make applications during cool hours to avoid leaf burn
4. Do not mix urea with oils or Captan
5. Make applications close to véraison
6. Monitor for botrytis and consider applying a botrytis-specific fungicide if weather is conducive to botrytis development

IV: Coming meetings

Vineyard Field Trip: Visit innovative vineyards in the Northern Shenandoah Valley
2 August 2016

On this daylong tour we will visit a range of vineyard operations including an independent grape growing operation and several wineries in the Shenandoah Valley. This trip will include educational vineyard walks and an opportunity to socialize with fellow grape growers. We will go directly to the vineyard and see vine training systems at about véraison. Growers will explain their operations and extension specialists will offer seasonal updates. Group transportation will be offered from three meeting points across the state, make sure to register and identify the meeting point closest to you. Registration is $50 per person due by 26 July 2016 (see page 2).

Agenda:

10:00* am Cave Ridge Vineyards
1476 Conicville Rd,
Mt Jackson, VA 22842
*We are offering transportation from across the state to Cave Ridge and we have transportation lined up between stops on the tour (see rest of registration form for details)

Brown Bear Vineyards (formerly Indian Springs Vineyard)
Independent grape growing operation
Lunch will be provided for registered attendees

Shenandoah Springs Vineyards
Sunset Hills vineyard in Shenandoah County

Muse Vineyards
2015 Governor's Cup Winner

4:00pm Return to Cave Ridge Vineyards

Registration: Registration is due by 26 July 2016
Contact Tremain Hatch thatch@vt.edu with any questions

$50/per participant via check made to "The Virginia Tech Foundation"
Mail registration and check to:

Tremain Hatch
595 Laurel Grove Road
Winchester VA 22601

Contact Name: _____

Additional Attendees (Names): _____

What part of the state will you be departing from (circle one). We are offering transportation and carpooling from your region of the state. Please circle the closest meeting point.

- Northern Virginia (Loudoun County)
- Central Virginia (Crozet)
- Southside Virginia (Pittsylvania County)
- Tour only, I will drive myself to Cave Ridge

Address: _____
_____

Contact email*: _____

Phone: _____
Dietary restrictions (please list): _____

Payment enclosed:
Number of attendees____ x $50/each = _____

*Email will be used for registration confirmation and for notification of any adjustments to the schedule. Please print legibly.

This is a rain or shine event with an outdoor component, please dress appropriately.

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Tremain Hatch, AHS Jr. AREC at (540) 869-2560 ext. 11 during business hours of 8 a.m. and 4 p.m. to discuss accommodations 15 days prior to the event. *TDD number is (800) 828-1120

SOVA Vineyard Development and Expansion Program
New and Advanced Grower Workshop

This primer will provide an introduction to the basic components of vineyard operation in Virginia, along with an advanced educational segment. Attendance at this or a previously offered primer short course is required in order to be eligible for the SOVA VDE - New Vineyard Cost Share Program.

When:

Wednesday August 16, 2017 *(rain date Thursday August 17, 2017)*
10:00 – 4:00 pm
Please bring a lunch.
There will be an outdoor component to this workshop; dress appropriately to go outside in the afternoon.

Where:

Rosemont of Virginia
1050 BLACK RIDGE ROAD
LACROSSE, VA 23950 http://rosemontofvirginia.com/

Registration:

Please contact Ashley Nauta to register by 8/11.
434-432-7770
aswolfe@vt.edu

Agenda:

9:45	Meet and greet
10:00	Program Begins
	Overview of Virginia Wine Industry – Dr. Tony Wolf – 30 minutes
	Vineyard Cash Flows – Tremain Hatch – 30 minutes
	Wine grape Varieties – Dr. Tony Wolf – 30 minutes
	Vineyard Site Selection – Hatch – 30 minutes
Noon	Lunch (30-minute Break)
12:30	Vineyard walkabout – 60 minutes
13:30	Fundamentals of Vineyard Management – Dr. Tony Wolf – 30 minutes
14:00	Fundamentals of Grapevine Integrated Pest Management – Tremain Hatch – 30 minutes
14:30	Overview of SOVA VDE program – Ashley Nauta – 15 minutes
14:45	Advanced Session – 65 minutes
16:00	Adjourn

VIRGINIA VINEYARDS ASSOCIATION

Virginia Cooperative Extension
Virginia Tech • Virginia State University

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Ashley Nauta at (434-432-7770) during business hours of 8 a.m. and 4:30p.m. to discuss accommodations 5 days prior to the event. *TDD number is (800) 828-1120.

Positions to fill:

Virginia Vineyard Seeking Ambassador/Winegrower:

A Virginia vineyard on the path toward natural and biodynamic winegrowing is seeking a highly motivated, extremely organized, hardworking, multi-tasking, nature and wine-loving ambassador/winegrower.

Our ambassador/winegrower will report to our Master Winegrower. In order to understand what makes our vineyard different from the rest, our ambassador/winegrower will work in the vineyards initially as well as assist our Master Winegrower in the winery.

Following this learning period as our new wines become ready for market, our ambassador/winegrower will be the point of contact for sales/marketing and general representation to our public in addition to winemaking responsibilities. Additionally, our ambassador/winegrower will conduct wine tastings, represent the brand to the public, seek speaking engagements and help to build a global network in our industry, as well as manage our website and wine club sales.

For those with a passion for beginning the interview process, please respond to personnelvirginia@gmail.com