Small Fruit News

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Clemson University • Louisiana State University • North Carolina State University
The University of Arkansas • The University of Georgia • The University of Tennessee
Virginia Polytechnic Institute and State University

In This Issue

The 'Long Strange Trip'

Powell Smith

After a long love for growing things developed as a child, I graduated from the University of Georgia in 1979 with a BS in Agriculture (Microbiology) after a four-year stint in the Navy, where I served as a Hospital Corpsman. I did farm work for a couple of years to get 'some experience' then went back to UGA to earn a Masters of Plant Protection and Pest Management. With my newly minted Master's degree, I went to Florida to work for A. Duda and Sons in 1984 as a pest management supervisor on a very large vegetable operation in Belle Glade Florida. With A. Duda, working on their farms near Tampa, I became acquainted with strawberries grown on plastic mulch…a new sight for me.

Early in 1986, I came to Hendersonville in western NC to work for Southern Agricultural Insecticides and then for Van Wingerden International. While working in NC, I began to work with a young scientist from NC State named Barclay Poling. With some guidance from him, I began doing strawberry plasticulture demonstrations and pest management consulting for strawberry growers such as Everett Lewis who had nursery acreage in the county. Ann Carson working for Clemson Extension Service in the upstate had begun to bring this technology into that area, and I pitched in with her to work extensively with Greenville County growers such as Billy Ledford, Fred Lynn, Frank Ferguson, and Horace and Marvin Robertson.

In 1988, I started my career with Clemson Extension Service over in Horry County in SC's Pee Dee region. I was asked in my interview if I could 'show people how to grow strawberries on plastic'. I said, "Certainly!" I guess you could say that the rest is history. I had several demonstrations in the Horry, Marion, and Florence area to spread the technology and some of those same growers plus many more are growing strawberries successfully.

I moved to Lexington County in 1994 in May and that fall, the first acres were planted in the Gilbert area. Now we have several growers in the county producing strawberries.

I worked with other agents in SC, GA, and NC to continue to improve strawberry production. I continued to gather and use expertise where I could find it. Clemson was not flush with small fruit production expertise, although we had excellent specialists for disease and pest management on small fruits. Several SC growers had issue with getting information from out-of-state and were making complaints to the university and Farm Bureau. I took exception to this, because, to me, getting the necessary unbiased information was the important part. However, this led to a great thing!

In 1999, Dr. Walker Miller, several extension agents and I went to strawberry in-service training at the new Centennial Campus in Raleigh. After the training, over a beer with Drs. Miller and Poling, I related the problem with the growers and the out-of-state information issue and said that I wished that we could pay a fee to each other and develop a formal information sharing system. Budgetary crises were robbing our land grant universities of expertise and no one institution could have specialists for all subjects. This discussion was the seed for the Southern Region Small Fruit Consortium. Dr. Poling took this idea to Dr. Tom Monaco, and, with the NC push for specialty crops and some funding, these individuals were able to parlay this idea in our great consortium. I am glad that I had a small part in 'hatching' the idea. One of the most memorable events in my career was being asked by Dr. Monaco in 2012 to attend the ceremony at NIFA headquarters in Washington, DC to accept the 'Outstanding Extension Activity' award for the Consortium. It was quite an honor for the Consortium and me.

In 2003, I received my PhD in Entomology from Clemson University and became the state vegetable entomologist with responsibility for pests on strawberry as well. Also, I became an official member of the SRSFC Steering Committee that year. After three years as an entomology professor at the Edisto Research and Education Center in Blackville, I returned to Lexington County as an Extension Associate with 50% statewide responsibility in vegetable and small fruit production as well as retaining my vegetable entomologist job. Also, I began to supervise other agents as the Horticulture Program Team Leader.

I have continued to work in these capacities in Lexington County mentoring several graduate students, several interns, and many student workers during summer trial seasons. Although I will be retired after 28 February, 2018, I plan to continue to show up at some meetings, attend commodity conferences, and probably be available for county agent calls when needed. I just assured one of the candidates for my job in interviews lately that they may have to see my footprints, but they would not have to work in my shadow or worry about me looking over my shoulder. Look for me on the Foothills Trail, the AT, or in my kayak on Lake Jocassee. So long but not Good bye!

Powell

Wine From 'Victoria Red' Table Grape

John R. Clark
University of Arkansas

'Victoria Red' table grape was released in 2010 in a cooperative endeavor between the University of Arkansas, Texas A and M University, and Tarkington Vineyard in Victoria, TX. This grape was developed in Arkansas, and sent to Texas for testing in the 1980s under the designation Ark, 1475. Although not winter hardy in Arkansas, the warmer climate of the test site in Texas suited it fine. But more

importantly, it survived in Victoria, TX, in a region of high pressure from the devastating Pierce's disease. This survival (be it tolerance or resistance), and the substantial lack of Pierce's disease resistant table grape varieties, contributed to the release decision.
'Victoria Red' has red berries, but not highly pigmented (Fig. 1). The flavor is generally neutral, not a strong fruity flavor as many eastern US grapes exhibit. It has been planted to a limited extent across the South as a local-market option by table grape growers.
In 2017, Martha and Friench Tarkington, owners of Tarkington Vineyard, who were involved in the evaluation of 'Victoria Red', evaluated its potential for wine. They processed just under 70 lbs of fruit that was harvested on June 17, which was at least 2 weeks early (normal harvest date is July 4-6 in Victoria).

At harvest, it had a composition of 15.5 Brix (percent soluble solids), pH 3.8, and titratable acidity of 0.9%. They cold-soaked the berries for 1 day, with skin contact. This quantity of fruit yielded 7 gallons of juice. They then followed normal white wine procedures including pressing the berries prior to fermentation and fermenting the juice at 55F. Their fermentation was complete on July 5. The wine was bottled after cold stabilization for several months, and in January, 2018 the Tarkingtons evaluated the finished, bottled product. They thought the largely dry wine had a very nice character. Friench and Martha were so excited with their product that they entered it in the San Antonio Regional Wine Guild Competition held February 17, 2018. To their surprise and joy, their 'Victoria Red' wine earned first place in the dry white wine category! The judges gave the wine a score of 19 out of a possible 20 points with favorable comments. The wine barely missed best of show. Many of the competing wines were made from Vitis vinifera varieties. They comment that the finished product is not completely dry, but rather has a slight tinge of sweetness remaining.

The Tarkingtons are going to make wine from 'Victoria Red' again, and are very excited about finding this additional use for this table grape. I thought this story was worth sharing with their neighbors across the South.

Figure 1: *Fruit of 'Victoria Red' table grape.*

Major Eriophyoid Mites Species Transmitting Viruses in Blackberry and Raspberry

Tobiasz Druciarek
Ioannis E. Tzanetakis
Department of Plant Pathology, Division of Agriculture, University of Arkansas System

Eriophyoid mites are the smallest phytophagous arthropods known to date. With body length averaging of 200 microns (≈0.008 inch), they are hardly visible to the naked eye (for size comparison, a human hair is about 80 microns across). Their microscopic size allows eriophyoids to enter and utilize niche habitats in plants, not available to larger arthropods, but also makes them difficult to study. Among members of the subclass Acari (mites and ticks), eriophyoids are considered only second to spider mites when it comes to crop losses. Moreover, the ability of some to transmit viruses makes them even more important as plant pests. Here we focus on three among 45 species infesting *Rubus*. Those species play key role in virus epidemics; some aspect of their biology, injuriousness, and pest management are discussed below.

***Phyllocoptes gracilis* (Nalepa, 1890)** (Fig. 1) Reported in North America, Europe, and Asia, *P. gracilis* also called “raspberry leaf and bud mite” is playing a key role in a complex disease called raspberry leaf blotch disorder (RLBD), an important *Rubus* disease in Europe. Yellow blotching on raspberry leaves are the first symptoms of the disease (Fig. 2). As a result, overall plant growth is reduced. Raspberry leaf blotch virus (RLBV) is the causal agent of the disease, and it is vectored by *P. gracilis*. So far the virus has not been observed in the United States, however the mite is widespread in many states, with reports from Arkansas, California, Oregon, Washington. A single *P. gracilis* female may start the new population as well as transmit the virus. Therefore, special precautions should be applied to plant material imported from countries where RLBV is present, especially Europe.

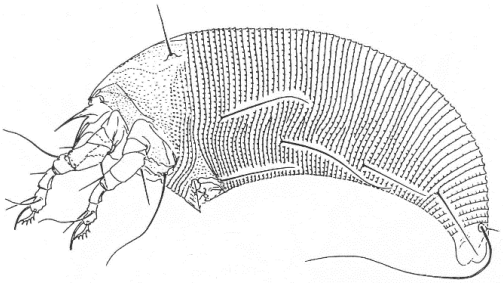

Figure 1: *Schematic drawing of Phyllocoptes gracilis female, lateral view (courtesy of Aoxiang Shi)*

Figure 2: *Early symptoms caused by raspberry leaf blotch virus (RLBV) on raspberry*

P. gracilis overwinter under bud scales, petiole scars, and crevices of the primocanes. In spring, mites emerge from overwintering sites and migrate to new shoots (floricanes) where they live within the layer of tomentum (fine hair on the lower leaf surface). When leaves mature, mites move to primocane leaves. Also, the berries become infested when population density on leaves reach high levels. Population density increases during spring and summer, reaching a maximum in mid-summer on the floricanes (at fruit ripening) and in early fall on primocanes. It takes about 14 days at 25°C (77°F) for the mite to complete its life cycle (egg→larva→nymph→adult), and therefore many generations may develop during the growing season.

Of the varieties sampled in the UK, ‘Glen Ample’ and ‘Octavia’ were the most commonly infected. Interestingly, transmission experiments through grafts and mites suggest that RLBV has limited ability to move within the plant in the absence of mites and therefore, virus infection does not persist between seasons. This suggests that effective acaricide treatment may prevent RLBV infection and control the virus. More research is needed to determine effective chemistries against *P. gracilis* as well as parameters for spraying (trigger, number of sprays, spray intervals). There is no knowledge the efficacy of natural enemies against *P. gracilis.*

***Acalitus essigi* (Hassan, 1928)** (Fig. 3) Reported from Europe, the Americas, and Australia, *Acalitus essigi* also called "blackberry mite" was assumed for a long time to cause redberry disease of blackberry, due to injection of toxic saliva into developing druplets during feeding. Some of the druplets remain greenish or reddish and hard, while other ripen normally. Fruit damaged by *A. essigi* feeding is unmarketable and can result in 10 to 50% loss. In a worldwide survey of commercial blackberry production, *A. essigi* was reported as an important pest in California, Oregon, Germany, and Hungary. Recent research has demonstrated that effective control of mite did not result in prevention or reduction of redberry symptoms, therefore the main contributor to the disease is yet to be characterized. Further studies revealed the presence of at least five viruses in redberry-affected blackberry

samples, with three being new to science. Further studies are needed to understand whether any of these viruses are associated with redberry disease and *A. essigi*.

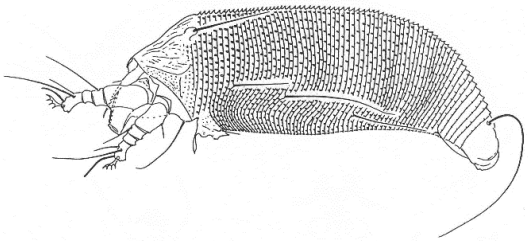

Figure 3: *Schematic drawing of Acalitus essigi female, lateral view (courtesy of Aoxiang Shi)*

Females overwinter in crevices around bud scales, between the petioles and stems, between bud scales and occasionally on damaged fruits. They emerge in early spring and move towards the developing flower buds, and later to the bases of leaves and green berries. They live between drupelets of the berries until late summer or early winter, when they migrate back towards overwintering sites or stay on the berries until these start to rot. Population density on fruits reaches its maximum in late summer or early fall. No quantitative information is available on the number of generations per year or the time necessary for the development from egg to adult. Codacide oil treatment supplemented with abamectin as well as Sulphur sprays were reported being most effective against *A. essigi* in studies in the UK. The population-dynamic studies conducted in Hungary showed that there were two periods crucial for successful control of *A. essigi*: 1) end of winter dormancy before the mites lay eggs and, 2) from bud stage till flowering when the mites are migrating. Studies conducted in California showed that cutting back the canes after the last harvest in late fall or early winter would greatly reduce *A. essigi* habitat, preventing populations from overwintering and building up over time, as is suspected to be the case with floricane fruiting cultivars. All plant residues should be removed from the field to minimize *A. essigi* survival in drying and dead plant parts and subsequent migration of mites to new spring growth. *Neoseiulus californicus* (Acari: Phytoseiidae), a predatory mite has potential as a biological control agent against *A. essigi*.

Figure 4: *Typical symptoms of blackberry yellow vein disease*

***Diptacus* sp.**

Blackberry yellow vein disease (BYVD; Fig. 4) is the most economically important virus disease in the southern United States. At least ten different viruses among over 40 reported in *Rubus* are associated with this complex disorder. One of the key contributors to the disease, blackberry leaf mottle associated virus (BLMaV) was recently characterized and successfully transmitted by yet undescribed eriophyoid species belonging to the genus *Diptacus*. The species is twice as large as *P. gracilis* and *A. essigi*, and in contrast to the other two, is a vagrant (free-living) species. Vagrant species are characteristic for their darker body color in comparison to those living hidden on plant and not exposed to direct sunlight. Change in color is especially evident in adult specimens of new the new species, as they turn from light brown to almost black. There are no studies yet showing times necessary for development or reproductive potential of a new species nor is there knowledge on the susceptibility of a new species to particular acaricides. These species has been already reported from different areas of the U.S. transmitting BLMaV, with incidence greater than 40% in BYVD-affected plants. BLMaV is highly underreported, and there are no studies available yet to show its true

distribution. This is also true for the mite, as the faunistic studies on *Rubus* eriophyoid fauna were never conducted in the United States.

Alion Herbicide Cleared for Use in Blueberry and Caneberry

Wayne Mitchem
Extension Associate, NCSU, Clemson Univ., UGA, Cooperatively Department of Horticultural Science

Alion herbicide was developed by Bayer Crop Science and it contains the active ingredient indaziflam which was originally introduced into the market place as a preemergence herbicide for use in citrus, pome, and stone fruit plantings. The uses of Alion have since expanded and most recently a supplemental label for use in blueberry and caneberry plantings was approved.

The blueberry and caneberry supplemental label can be found at www.cdms.net and the user must have a copy on hand to legally use the product in these crops. Alion can be used in blueberry plantings established one year or longer while caneberry plantings have to be established three years or more. The label restricts its use to allow a dormant application from late fall thru winter prior to bud swell. If more than one application is applied there must be at least 90 days between applications.

The use rate ranges from 3.5 or 5 fl. oz. per acre per application (with a maximum of 7 or 10 fl. oz per acre on an annual basis). Alion rates are variable due to differences in soil organic matter. The higher rate is to be used on soils having more than 1% organic matter while the lower rate is allowable on soils containing less than 1% organic matter. Alion cannot be used in sand soils or soils with a greater than 20% gravel content.

Long term residual control of numerous annual broadleaf and grass weeds is the norm for Alion. If the dormant period is long enough to allow two applications to be made 90 days apart you can expect residual control of susceptible weeds to persist for 12 weeks or longer after the last application. Unlike some other preemergence herbicides, Alion provides no postemergence activity and therefore will not aid non-selective postemergence herbicides in the management of difficult to control species.

Grape Chores

Cain Hickey
University of Georgia

Bud break is upon us in many, but not all, bunch wine grape vineyards here in northern Georgia; we are seeing 1.0-1.5” shoot growth in warmer regions. Earlier cultivars are likely also swollen or breaking in NC and TN, particularly in warmer regions. However, I have recently heard reports of bud break occurring in Chardonnay even in western NC. Virginia is likely at least three to four weeks out from seeing any bud break in bunch wine grape vineyards. Southern Georgia muscadine vineyards started bud break about two weeks ago (see picture from Still Pond Vineyard and Winery); bud break is fast approaching here in muscadine vineyards in the Georgia piedmont. Given the recent cold weather, many frost/freeze events have recently occurred here in the northern third of Georgia; two more are forecasted to occur over the weekend and into early/mid next week. While things might slow down a bit given our current weather patterns, the next consistent stretch of warm temperatures will likely get things moving in earnest in vineyards all over the southeastern US. The following grape chores will last through late June/early July, when the next Small Fruits newsletter will be released through the Southern Region Small Fruit Consortium website (www.smallfruits.org).

Photo: *Muscadine bud break in Calhoun County, Georgia; photo courtesy of Charlie Cowart*

1. **Service and check active frost protection machines/equipment and be prepared to avoid spring frost.** This is timely, as it may come in handy throughout April and early May. The most ubiquitous active frost protection method in eastern US vineyards is using a wind machine (photo, below) to mix air. Wind machines can protect 10-12 vineyard acres. Fiscal estimations suggest that wind machines can "pay for themselves" if they save the crop on only one acre if that crop is turned into wine and sold. If your site is frequently threatened by spring frost, such an investment may prove to be economically beneficial. Combining air movement with heaters or burning brush piles may offer additional protection when the 1-3 °F of protection offered by air mixing alone is anticipated to ineffective at preventing frost damage. Other methods, such as delayed pruning, spray materials, and irrigation may help in some instances, but each of these methods have drawbacks. For example, highly variable results have been reported regarding the effectiveness of spray materials advertised to lower frost risk through bud break delay, cryoprotection, or preventing ice nucleating bacteria. Delayed pruning requires a final pass through the vineyard to prune to the desired final bud density; such a task may be too much for some enterprises to accomplish in a timely fashion given all that needs done in the vineyard during the bud break and early shoot growth stages.

2. **Weed management.** Depending on your own adapted program, you may be needing to apply herbicides before bud break. Wayne Mitchem, NC State/UGA/Clemson orchard and Vineyard Weed Management Specialist and UGA Viticulture Team member, recently spoke to grape growers at NC and GA meetings about best herbicide practices in vineyards. Wayne will also be speaking about herbicide calibration and application at our Effective Vineyard Spraying Conference on April 26th in Dahlonega, GA (announcement at end of this chores list). Wayne is also a great resource for all herbicide-related questions in the vineyard; his email is mitchem@ncsu.edu. Please also consult your local county agent and/or the Southern Region IPM guides for bunch grapes and muscadines at the Southern Region Small Fruits Consortium's website: http://www.smallfruits.org/ipm-guides.html.

3. **Disease management. This is perhaps the most important "chore" in this list across all southeastern US vineyards given our disease-intensive climate. It is not a question of *if* you should manage for fungal diseases, it is a question of *when and how* you should do it using *what* strategies.** Much of the *when and what* was covered by Phil Brannen, UGA Fruit Pathology Extension Specialist and UGA Viticulture Team member, at a recent workshop in Tiger, GA. Phil will also be speaking at a near-future workshop up in Surry County (contact Joanna Radford for more information; radfordj@co.surry.nc.us) as well as at

the upcoming Effective Vineyard Spraying Conference on April 26th in Dahlonega. All major fungal diseases will need to be managed between now and the next edition of the Small Fruits newsletter, which will be near July. Before and during bud break, phomopsis is of primary concern, but powdery mildew needs to be managed at very early shoot growth (3"), and downy mildew and black rot need managed very shortly thereafter. The critical period for managing several diseases on clusters begins at bloom and lasts through bunch closure. There are several guides and templates out there for disease management in vineyards. Use these to guide and develop your own program and adjust your program based on weather patterns and growth stage at your own vineyard location. If weather is highly conducive to fungal disease development, then tighten intervals; do the opposite if weather is dry and little precipitation I am not the expert in pathology. Phil Brannen (pbrannen@uga.edu) and Mizuho Nita (Grape Pathology Specialist at Virginia Tech; nita24@vt.edu) are both great resources for grape disease-related questions. Mizuho's web page is a great resource for regional grape growers (http://grapepathology.blogspot.com/). Please also consult your local county agent and/or the Southern Region IPM guides for bunch grapes and muscadines at the Southern Region Small Fruits Consortium's website: http://www.smallfruits.org/ipm-guides.html.

4. **Insect management.** Some insects will require management at an earlier calendar date / growth stage relative to others. Few insects are of concern right now (bud break) but climbing cutworms can cause severe shoot damage very early in the season if they are a prebolem in your vineyard and they are left untreated. My general recommendation is to know the history of troublesome insects at your specific site and to scout before you implement control measures. Regional insect pests include, but are not limited to, *Drosophila* spp., Japanese beetles, mealy bugs, mites, and leafhoppers. Our regional entomology experts include Brett Blaauw (UGA Orchard and Vineyard Entomology Specialist; bblaauw@uga.edu) and Doug Pfeiffer (Virginia Tech Orchard and Vineyard Entomology Specialist; dgpfeiif@vt.edu). Please also consult your local county agent and/or the Southern Region IPM guides for bunch grapes and muscadines at the Southern Region Small Fruits Consortium's website: http://www.smallfruits.org/ipm-guides.html.

5. **Shoot thinning**. Shoot thinning is the first "canopy management" practice of the growing season. To optimize efficiency, shoots should be thinned by manually by hand removal. This is best accomplished when shoots are roughly 5" long. Inflorescences are clearly visible at this stage, making it easy to retain fruitful, and thin unfruitful, shoots. It is NOT advised to wait on this practice, as it becomes much more difficult to efficiently thin shoots when shoots are approaching a foot in length, and the junction between the spur and shoot becomes lignified. If you need to use pruners to thin shoots you have waited too long. Optimal shoot density is around three to five shoots per linear foot of row for single-fruiting zone systems, such as VSP systems. It is impossible to count to this number throughout commercial vineyards. Thus, it is advised to thin a panel to roughly four shoots per linear foot of row and get crew members to get a

mental image of what this looks like (below); they can then implement in the rest of the vineyard with good precision.

6. **General canopy management.** After shoot thinning, shoots need positioned to accommodate the intended training system. This will require tucking and positioning shoots, which facilitates air movement and sunlight interception by the leaves and ultimately promotes healthier, less disease-prone vines. Fruit zone leaf removal has been shown to optimize wine quality potential and reduce rot incidence and severity. My recommendation is to conduct the "initial leaf pulling" by removing leaves opposite clusters immediately after fruit set and no later than peppercorn berry size. This promotes canopy spray penetration and fungicide coverage on fruit and also acclimates fruit to the ambient temperatures and radiation outside of the canopy, thereby reducing sunburn risk. In fact, over the last five years, I have rarely seen sunburn evidence on highly exposed grapes when I have removed fruit zone leaves immediately at, or before, fruit set; these observations come from all over the southeastern US - from northern Virginia, to North Carolina, and all the way down to northern Georgia. Hedging of primary and lateral shoots should occur as needed through several weeks post-veraison. Primary and lateral shoot hedging are necessary for the same reasons that shoot positioning and fruit zone leaf removal. Fruit zone leaves could be removed to optimal specifications, but if primary shoots and laterals shade the fruit zone then there really is no net benefit gained toward promoting a healthy fruit zone microclimate within the canopy. Once pea-berry size and/or bunch closure arrives, then leaf removal maintenance is good practice to maintain open fruit zones that are quick-drying and therefore less hospitable to late season bunch rots such as *Botrytis*. Please see the photo, below, taken from a highly-shaded fruit zone. Nobody wants to make or drink wine from fruit like that – both because of the rot, but also due to the vegetal characteristics imparted to the finished wine product from such unripe fruit.

7. **Fertilization.** Use your soil reports, petiole sample results from current and previous seasons, and your own visual observations to determine where you need to fertilize and what you need to fertilize with. Fertilization should occur in split applications – one at/around bloom and one later in the season, perhaps at veraison. New root growth

has been observed to occur primarily at bloom and immediately after harvest. It thus stands to reason that these periods are associated with optimal nutrient uptake efficiency from the soil. I am a bit reluctant, however, to recommend late season fertilization given all that is happening with harvest logistics as well as the potential for causing a flourish of growth when vines should be acclimating to cooler temperatures and approaching winter dormancy.

8. **Soil and plant tissue sampling for nutrition management.** Soil samples tell us what could be available for vine uptake. Sampling of vine tissues tells us the nutrient status of the grapevine itself. These are not necessarily related as nutrient uptake depends on physical, chemical, and biological properties. At bloom, petioles and/or blades should be sampled from the *primary* shoot at the position that is opposite a flowering cluster. At veraison, petioles and/or blades should be taken from one of the most recently and fully developed leaves on the *primary* shoot (be careful, as hedging will result in lateral shoots coming off at the apex of primary shoots, potentially resulting in difficulty in identifying primary and lateral shoot). There are sufficiency ranges for macro- and micro-nutrients in grapevines, which are dependent on the tissue sampled (leaf or petiole). A very well-written and thorough article on grapevine nutrition and nutrient sufficiency ranges, written by Paul Schreiner and Patty Skinkis, can be found here: http://articles.extension.org/pages/31517/monitoring-grapevine-nutrition . Please work with your local county extension agent to help you collect, submit, and interpret soil and plant tissue nutrient samples in order to optimize your vineyard nutrition program.

Events:

The Effective Vineyard Spraying Conference will take place from 9 AM to 5 PM on April 26th at Frogtown Cellars in Dahlonega, Georgia. This will feature Dr. Andrew Landers, who is greatly known for his workshops on sprayer calibration and spray coverage efficacy in vineyards. Dr. Phil Brannen, Mr. Wayne Mitchem, several sponsors/vendors, and myself (Cain) will also be participating in this one-day conference that is anticipated to be a great event to help owners and managers dial in their sprayers. While the "what and when" are important to know regarding pesticide application, this workshop will cover the "how to", which is arguably of equal importance relative to the latter to considerations.

For more information, and to register for this conference, please visit this link:

https://site.extension.uga.edu/viticulture/2018/03/mark-your-calendars-effective-vineyard-spraying-conference-april-26th-2018/

That's about it. We will likely be seeing some berry softening and coloration in more southerly-positioned vineyards across the southeastern US by the time the next "grape chores" list is published in the July edition of *Small Fruits*.

If you have not already done so, please subscribe to our extension viticulture blog update for updates on timely management, events, regional weather, etc. https://site.extension.uga.edu/viticulture/

Spring Caneberry (Raspberry and Blackberry) Chores 2018

Dr. Gina Fernandez
Small Fruit Specialist at NC State University

Spring 2018 has been cool, we had snow in Raleigh on April 7. But blackberry plants have broken bud are ready to start the season. Chores and timing may be somewhat different in your area or for your cropping system. For IPM recommendations and general production practices, see the 2018 Southeast Regional Caneberry Integrated Management Guide.

http://www.smallfruits.org/assets/documents/ipm-guides/Caneberry-Spray-Guide.pdf

The IPM guide above lists these stages of growth or planting age. This is the time of year we are now leaving (or have left a while ago!) the dormant period and by the time the next newsletter comes out, we will likely be harvesting in some locations.

Dormant (prior to budbreak)
Delayed dormant (swollen buds) to green tip
Shoots 6 inches long and before blooms open
Pre-bloom (when flower buds show white)
Early bloom (5-10%)
Full Petal
Cover sprays
Pre-harvest (14 days before anticipated harvest)
Harvest

The SRSFC production practices are in the Regional Caneberry Production guide (includes link to PDF format):

- https://content.ces.ncsu.edu/southeast-regional-caneberry-production-guide

Plant growth and development

- Plants deacclimate quickly
- Bud differentiation (additional flowers can be formed)
- Bud break
- Flowering
- Primocane emergence

Pruning and trellising

- Finish pruning and make sure all floricanes are tied to the trellis before budbreak
- Remove canes from field to minimize spread of diseases
- Rotate shift trellises to horizontal position before budbreak; rotate to upright position immediately after flowering.
- Prepare for flower to fruit monitoring (see http://teamrubus.blogspot.com/2015/03/monitoring-flower-to-fruit-development.html)

Weeds

- Weed growth can be very vigorous at the same time as the bramble crop peaks
- Weed control is best done earlier in the season, with pre-emergent herbicides before harvest commences
- Hand-weed perennial weeds in and around plots

Insect and disease scouting

- Growers with a history of cane diseases and/or mites often find that certain fungicides and oils are most effective just prior to bud break. The period of time in the spring when the plant is flowering is the most important season for control of insects and diseases. Know what your pests are and how to control them. See the

Water management

- Test irrigation system and look for leaks
- Canberry plants need about 1”-2” water/week. This amount will be especially critical during harvest

Fertlity management See Caneberry Production Guide
https://content.ces.ncsu.edu/southeast-regional-caneberry-production-guide/fertility-management

Marketing and miscellaneous

- Service and clean coolers

- Make sure you have enough containers for fruit in the coming season
- Prepare advertising and signage for your stand
- Contact buyers to finalize orders
- Hire pickers
- Prepare signage for field orientation; it is easier to tell pickers where to go if rows are numbered
- Check buds and canes for cold damage (27°F is temperature that kills all stages of flower buds see http://teamrubus.blogspot.com/2016/04/damgage-to-blackberry-flowers-at-27f.html

Monitor and record peak flowering date for each variety every year. Then later during harvest, check your records for peak harvest of each variety. Over time, it will help you to determine when your peak harvest will occur.

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