Small Fruit News

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Auburn University • Clemson University • LSU AgCenter • NC State University
The University of Arkansas • The University of Georgia • The University of Tennessee
Virginia Polytechnic Institute and State University

In This Issue

North American Raspberry & Blackberry Association Awards Dr. Gina Fernandez

At its annual meeting on January 10 at the 2019 North American Raspberry & Blackberry Conference, held in Savannah, Georgia, the North American Raspberry Association (NARBA) gave its 2019 Distinguished Service Award to Dr. Gina Fernandez, Small Fruits Extension Specialist at NC State University.

Dr. Fernandez was the Coordinator of NARBA's North America Bramble Growers Research Foundation from 1999 to 2016, sending out the Request for Proposals, gathering proposals, and leading the review process. In 2016, she turned her responsibilities over to co-coordinators Patrick Byers, University of Missouri, and Jeff Chandler, NC State University.

She has helped plan the program for multiple NARBA annual conferences, including this one, as well as the blackberry/raspberry programs that NARBA has coordinated at the Southeast Regional Fruit & Vegetable Conference Savannah since 2006. She has been a speaker at most, if not all, of these Southeastern meetings, as well as many of NARBA conferences in other regions. This year, she is giving several presentations and helped lead a Fundamentals of Caneberry Production workshop.

Dr. Fernandez was convener for the International Society of Horticultural Science's Eleventh International Rubus and Ribes Symposium, held in western North Carolina in 2015. This was an enormous effort over two years that brought in scientists from around the world and particularly showed them the rapidly expanding Southeastern blackberry industry which she has helped to build.

A professor at NC State University since 1996, Dr. Fernandez is currently the NC State breeder and extension specialist for both caneberries and strawberries. Building off the caneberry work at NCSU by now-retired Dr. Jim Ballington, she has released two caneberry varieties: the blackberry 'Von' and red raspberry 'Nantahala'. Her "TeamRubus" blog is widely read, and growers in Virginia, Georgia and other states besides North Carolina also turn to her for extension advice.

In his presentation of the award, NARBA president Pierson Geyer of Agriberry Farm in Virginia commented "Dr. Fernandez is a true friend and supporter of NARBA and our industry and has been instrumental in helping us grow here on the East Coast to where we are today."

The North American Raspberry & Blackberry Association is a non-profit membership organization of growers, researchers, and others in the caneberry industry from 37 U.S. states, Canada, Mexico, and 7 other countries. Its mission includes providing education and support to growers, promoting caneberries to the public, and supporting research (through its allied North American Bramble Growers Research Foundation). Its next North American Raspberry & Blackberry Conference will be in St. Louis, Missouri March 3-6, 2020. For more information, visit http://www.raspberryblackberry.com or email info@raspberryblackberry.com.

Take Advantage of the Clemson Fungicide Resistance Profiling Service

Guido Schnabel, Clemson University

Make sure you know what fungicides work best for you to control gray mold this coming season. The Schnabel lab at Clemson University in conjunction with the Southern Region Small Fruit Consortium (www.smallfruits.org) again offers a service that provides growers with optimized spray recommendations. The test covers multiple chemical classes and growers from Consortium member states (GA, NC, SC, TN, VA, AR, AL, and LA) may send samples for testing free of charge to the Clemson lab. Instructions on how to collect and where to send samples can be found at www.peachdoc.com (go to 'EXTENSION' and 'Fungicide Resistance Profiling' on bottom of page).

The assay typically takes a week to conduct (depending on the quality of the samples submitted) and we try our best to get a report to you without delay. What you are getting:
-confirmation that we received your samples on day one
-assay results with fungicide resistance management and disease management recommendations
-color coded sheet listing active ingredients, trade names, FRAC codes and more

-most recent gray mold and anthracnose disease management guidelines authored by Chuck Johnson, Frank Louws, and yours truly

Gray mold samples from all small fruits are welcome. For more information contact Dr. Guido Schnabel; schnabe@clemson.edu; cell 864-643-7131.

'Rocco' and 'Liz', new strawberry cultivars for the southern United States

Gina Fernandez, Professor
Department Horticulture Science
NC State University

Previously published in NC Strawberry Grower Newsletter, Nov-December 2018 issue

'Rocco' and 'Liz' are new short day (June Bearer) strawberry cultivars developed by the North Carolina State University (NCSU) Strawberry Breeding Program. 'Rocco' was tested as NCS 10-156 and 'Liz' was tested as NCS 10-038. Yield trials were conducted at research sites in NC for 3-7 seven years. In addition, both 'Rocco' and 'Liz' plants were sent to cooperators at research stations and at farm locations throughout the US in VA, SC, AR, AL, GA, and MD.

'Rocco' and 'Liz' originated in a strawberry breeding plot in Salisbury, NC. In 2009 seed from two selections, NCH 05-73P and NCH 08-07 was collected. The seeds were germinated and the resulting seedlings were planted in the fall of 2009. From the batch seeds collected from NCH 05-73P, one plant, was selected and given the number NCS 10-156. And from the batch of seedlings from NCH 08-07 one plant was selected and given the number NCS 10-038. Both selections were made in the spring of 2010 by Jeremy Pattison and Liz Clevinger. Yield data for 'Rocco' and 'Liz' are in Tables 1 and 2. Pictures of plants and fruit are in Figures 1 - 2.

Table 1: Total yield, marketable yield, percent marketable yield, percent marketable of Chandler, and average berry weight, 2015-18 Central Crops Research Station, Clayton NC.

	2014-15	2015-16	2016-17	2017-2018	Average
Genotype	Total Yield (lbs/A)				
Liz (NCS 10-038)	25171	30131	36563	38906	32693
Camarosa	8134	25619	26892	21474	20530
Chandler	28134	25690	18092	25689	24401
Rocco (NCS 10-156)	20992	21400	20850	17269	20128
Sweet Charlie	9370	12941	17756		13356
Genotype	Marketable Yield (lbs/A)				
Liz (NCS 10-038)	23674	27309	23122	26013	25030
Camarosa	5066	23290	18710	10156	14306
Chandler	24250	20698	10557	15354	17715
Rocco (NCS 10-156)	19002	18603	16828	10533	16242
Sweet Charlie	8416	11725	14764		11635
Genotype	Percentage Marketable Yield (% of total)				
Liz (NCS 10-038)	94	91	65	67	79
Camarosa	61	91	72	47	68
Chandler	85	81	59	60	71
Rocco (NCS 10-156)	90	87	81	61	80
Sweet Charlie	90	91	83		88
Genotype	Marketable Percent of Chandler (%)				
Liz (NCS 10-038)	98	132	219	169	**155**
Camarosa	21	113	177	66	94
Chandler	100	100	100	100	100
Rocco (NCS 10-156)	78	90	160	69	99
Sweet Charlie	35	57	140		77
Genotype	Average berry weight (g)				
Liz (NCS 10-038)	24	18	24	19	21
Camarosa	20	18	23	15	19
Chandler	21	20	21	17	20
Rocco (NCS 10-156)	21	15	20	16	18
Sweet Charlie	17	14	20		17

The key attributes of 'Rocco' are its early season of ripening and its outstanding flavor. It ripens at approximately the same season as and can be considered as a replacement for 'Sweet Charlie' (Figure 3). However, the yield of 'Rocco' is higher than 'Sweet Charlie' because it remains productive almost as long as 'Chandler'. The soluble sugar content of 'Rocco' was higher than other cultivars that we tested (data not shown) and in taste tests conducted at research stations and at on farm sites, 'Rocco' was always ranked very high and it is the one that everyone wanted to take home at the end of the day. 'Rocco' is named after Rocco Schiavone. Rocco has been a dedicated Research Specialist and has worked

with a number of strawberry and other research programs at NCSU for over 30 years.

Table 2: Total yield, marketable yield, percent marketable yield and average berry weight, Piedmont Research Station, 2014-2018, no data for 2016-17 due to crop loss.

	2014-15	2015-16	2017-2018	Average
Genotype	Total Yield (lbs/A)			
Liz (NCS 10-038)	28823	35749	30750	31774
Camarosa	10285	24431	23717	19478
Chandler	28134	25505	22149	25263
Rocco (NCS 10-156)	16055	26575	21160	21263
Sweet Charlie	11083	18712		14898
Marketable Yield				
Liz (NCS 10-038)	24798	29605	20253	24885
Camarosa	7960	21107	15383	14817
Chandler	20843	19389	10638	16957
Rocco (NCS 10-156)	13274	22484	14945	16901
Sweet Charlie	8585	15592		12089
Genotype	Percentage Marketable Yield (% of total)			
Liz (NCS 10-038)	86	83	66	78
Camarosa	78	86	65	76
Chandler	74	76	48	66
Rocco (NCS 10-156)	83	84	71	79
Sweet Charlie	76	83		80
Genotype	Marketable Percent of Chandler (%)			
Liz (NCS 10-038)	119	153	144	**139**
Camarosa	38	109	109	85
Chandler	100	100	100	100
Rocco (NCS 10-156)	64	116	106	95
Sweet Charlie	41	80		61
	2014-15	2015-16	2017-18	Average
Genotype	Average berry weight (g)			
Liz (NCS 10-038)	22	16	19	19
Camarosa	20	22	17	20
Chandler	18	17	12	16
Rocco (NCS 10-156)	19	19	14	17
Sweet Charlie	15	17		16

The key attribute of ‘Liz’ is that it consistently had very high yields. ‘Liz’ yielded as good or better than both ‘Chandler’ and ‘Camarosa’ in trials conducted in NC (Tables 1and 2). In yield trials at the Piedmont Research Station in Salisbury, NC and at the Central Crops Research Station in Clayton NC, ‘Liz’ averaged 139-155% more fruit than ‘Chandler’ when yields were averaged over the years. ‘Liz’ can be considered as a replacement for ‘Camarosa’ however, ‘Liz’ had more consistent yields on a year-to-year basis than ‘Camarosa’. ‘Liz’ is named after ‘Liz’ Clevinger a former NC State University Research Specialist who worked in the strawberry breeding program for many years.

Both ‘Rocco’ and ‘Liz’ are moderately firm and are therefore best suited for pick-your-own and local markets.

‘Rocco’ and ‘Liz’ will be available for purchase from Norton Creek Farms, Cashiers, NC in 2019. Additional nurseries will have plants available in 2020.

Figure 1: Shows whole plants of ‘Rocco’ (NCS 10-156) including leaves, inflorescences and fruit at varying stages of ripeness and whole and sliced fruit

Figure 2: Shows whole plants of ‘Liz’ (NCS 10-038) including leaves, inflorescences and fruit at varying stages of ripeness and whole and sliced fruit.

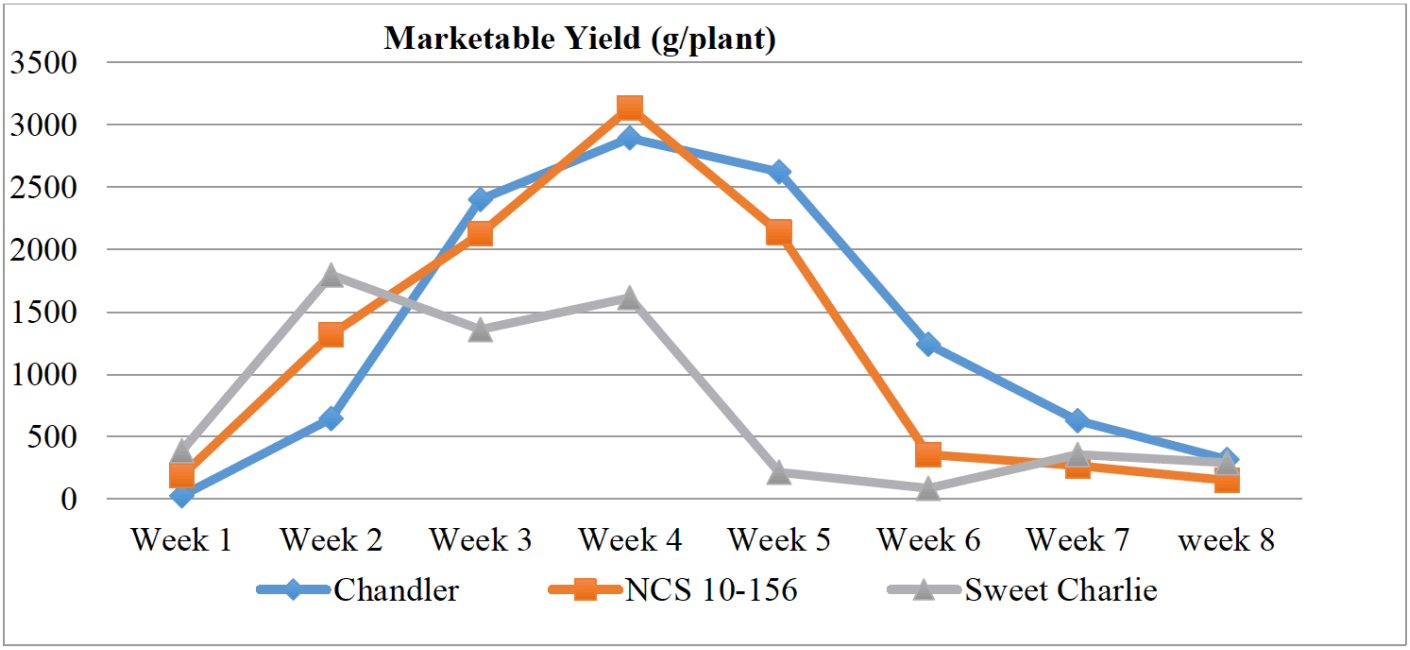

Figure 3: Harvest season of Rocco (NCS 10-156), Chandler and Sweet Charlie.

Caddo, A New Blackberry Variety from the University of Arkansas

John R. Clark

Photo: *Caddo Blackberry Fruit*

Caddo is a new thornless, floricane-fruiting blackberry released by the University of Arkansas. The outstanding characteristics of Caddo include large berries, very good fruit flavor, overall high fruit quality, excellent postharvest fruit-handling potential, consistent high yields, and excellent plant health. Also, diversification of an early mid-season cultivar choice beyond Osage and Ouachita is considered a positive attribute. Caddo should be a commercial cultivar with good potential for shipping, as well as an option for local-market production and home gardens. Caddo is expected to perform well in areas where Osage, Apache, Arapaho, Ouachita, Natchez, and Navaho are adapted. This includes areas of the upper South, Southeast, Midwest, Mid-Atlantic as well as the West and Pacific Northwest regions of the United States.
Type: Floricane-fruiting, thornless, erect canes.

Ripening date: First harvest between Natchez (two days later) and Osage (two days before), and five days before Ouachita.

Berry weight: 8 g on average, overall averages about 2 g larger than Osage, 2 g smaller than Natchez and 1.5 g larger than Ouachita.

Yield: Comparable in multiple trials to Osage and Ouachita, averaging 19,000 lbs./acre in research plantings.

Flavor: Flavor has always been consistent from harvest to harvest and year to year with Caddo. t is similar to its half-sister Osage in exhibiting reliable flavor. Berries are sweet with average soluble solids of 10.5% and titratable acidity 1%. Caddo has very attractive aromatic components which round out its nice flavor.

Postharvest: Storage has been comparable to Ouachita and Osage for variables such as red

drupelet development (reversion), berry leakage and firmness in storage. Flavor has been noted to be consistently retained after 7 days of storage.

Plants: Caddo plants have always exhibited very good health with consistently healthy floricane leaves contributing to its noteworthy flavor. Caddo has proven to be disease-free, having shown no orange rust, anthracnose or cane/leaf rust in all research trials. Winter hardiness has been comparable to Ouachita, and shown little to no winter injury to a low of 1˚F. Chilling requirement is not known, but is anticipated to be approximately 300 hours.

First budbreak date is with Osage, and usually 5 days later than Natchez. First bloom date is with Osage and Ouachita and 8 days later than Natchez.

Availability: Caddo entered the commercial market in early 2019 and availability will expand later in 2019 and 2020. Tissue culture nurseries Agristarts, North American Plants and Nourse Farms and Nursery will have the initial plant offerings and licensed propagators will expand in 2019.

Grape Chores

Cain Hickey
University of Georgia

Vines are likely at peak dormancy given the time of year and the recent cold weather patterns throughout the southeastern US. Let's hope we don't get into a roller coaster pattern of extreme cold-warm-extreme cold; such patterns can cause the vines to prematurely de-acclimate during late winter and early spring, which increases the chance of cold injury to vine tissues. The following grape chores will last through January/February, when the next installment will be released through the Southern Region Small Fruit Consortium website (www.smallfruits.org).

1. **Put final vine orders into nurseries.** Chances are you will not get the exact cultivar/rootstock/quantity combination you desire, but you may find some of what you are looking for. A local grower just scored some Petit Manseng for an acre planting in 2019 – which is a rare find this late in the winter prior to a planting season. Don't wait any longer to order vines; in fact, now is a good time to put your vine order into nurseries for your 2020 plantings.

2. **Evaluate trellis integrity and repair.** Check for broken posts and trellis wires and repair or replace them before bud break. The weight of the forthcoming season's crop will can result in trellis failure if it is in poor integrity.

3. **Reflect on the previous season and talk to your regional colleagues – both industry members and extension personnel.** What went right? What went wrong? Be prepared for next season by developing a plan to fix the "wrongs" and re-implementing the management strategies that worked well. It helps to talk to neighbors and ask them their take on their season – they may offer advice and answer questions that will put you in a better position for success next year, and vice-versa.

4. **Attend meetings, conferences, and workshops.** The "big" statewide viticulture and enology conferences throughout the southeastern US (Georgia, North Carolina, Virginia) are coming up in the very near future. The larger, regional conferences are also coming up. Attend these to learn and network and be a supportive industry member. Here are the events that are happening in the near future:

CONFERENCES/TRADE SHOWS/SYMPOSIUMS

a. North Carolina Winegrower's Association Conference (January 31-February 2, 2019) http://www.ncwinegrowers.com/
b. Georgia Wine Producers Conference (February 4-5, 2019) www.georgiawineproducers.org/2019-annual-meeting/
c. Virginia Vineyards Association Winter Meeting (February 20-23, 2019) https://virginiavineyardsassociation.org/2019-winter-technical-meeting/#id=121&cid=1041&wid=3101
d. Eastern Winery Exposition (March 19-21, 2019) https://easternwineryexposition.com/

WORKSHOPS

e. Keep your eyes peeled on the UGA Extension Viticulture Blog (http://site.extension.uga.edu/viticulture/) for information on future workshops. Here is a link to the most recent viticulture blog post concerning upcoming workshops:
    i. https://site.extension.uga.edu/viticulture/2019/01/learning-opportunities-for-dormant-grapevine-pruning/

5. **Evaluate cold injury in vine tissues.** The closer to final pruning that tissue cold damage can be evaluated, the better, as bud and wood retention amount can be adjusted accordingly. In practicality, this may mean that cold damage is evaluated before starting to prune each block or cultivar. It is impractical to wait until March to begin pruning in attempt to make it past the periods of greatest cold temperature threat. Double, or "rough", pruning (discussed below) is a good strategy to retain several buds before needing to make final pruning decisions. Using a razor blade to cut a transect across buds will allow visual inspection of primary, secondary, and tertiary bud damage. For more on evaluation of grapevine tissue cold injury, please see the following resources:
https://extension.umd.edu/learn/understanding-grapevine-bud-damage
http://articles.extension.org/pages/63372/cold-injury-in-grapevines
www.hort.cornell.edu/goffinet/Anatomy_of_Winter_Injury_hi_res.pdf

6. **Dormant pruning.** For those who practice spur pruning, "rough pruning" is a way to get a head start on final pruning. Many have already started this, perhaps in December 2018. If rough pruning is practiced and brush is pulled from the trellis wires, the final prune will be efficient as the short spurs will simply fall out of the trellis onto the vineyard floor. Rough pruning to 4-5 node-spurs allows the grower to delay the final prune to late winter / early spring to assess bud damage and the risk of spring frost. Some "delay prune" by waiting until late winter / early spring before even starting to prune. This is an attempt to force bud break on the apical bud positions of the dormant cane before those on the basal positions, hence potentially reducing the risk of spring frost damage to the basal buds (i.e. those that will be retained). We have seen mixed reviews with delayed pruning as it puts growers "behind the eight ball" to finish pruning while several other seasonal tasks are getting underway – it always comes on too fast! Further, it has been reported that delaying pruning well into the spring can result in the failure of some basal buds to break at all, which negates the reason for practicing delayed pruning in the first place. Please see a recent blog post

about our initial observations from a delayed pruning field trial in Chardonnay from the 2018 field season: https://site.extension.uga.edu/viticulture/2019/01/brief-comments-on-delayed-pruning/

If cane pruning, there is not much logic in delayed pruning, and *certainly* not much logic in "rough pruning" (i.e. don't prune the canes you intend to lay out!). Cane pruning is becoming more popular throughout the region. These trends are perhaps due to the reduced need to shoot thin when cane pruning relative to spur pruning (the latter of which can result in numerous unfruitful shoots from the cordon-spur junction). Cane pruning also removes grapevine wood which has potentially been infected with wood diseases. This brings up a note on when to replace cordons. The easy answer is "whenever you are unhappy with the performance and health of your current cordon," mainly as related to disease incidence and the height and spacing of your current spur positions. In general, it is time to lay down a new cordon (a "cane" in the first year) if there are several instances where adjacent spur positions are greater than a hand width apart and/or one-year old spurs originate from greater than 5-6" above the cordon. Further, it is important to assess for common wood diseases that are often observed in cordons, such as Eutypa dieback, etc. More on disease considerations at pruning time can be found in this document, written by Virginia Tech grape pathologist Mizuho Nita: https://farmcreditknowledgecenter.com/Farm_Credit_Knowledge_Center/media/Images/Disease-Consideration-at-Pruning-Time-2017.pdf

A final note on pruning - tools. Using sharp, well designed tools helps reduce operator fatigue. Sharpen your hand pruners as necessary, and use loppers (large pruners/shears for making larger cuts) that require relatively little exertion. These tactics will enable you and your crews to prune at optimal efficiency (hot coffee and pizza at lunch will help, too). Poorly designed, unsharpened tools require much more operator exertion and require the tools to be held closer to the body to gain leverage.

7. **Service and check active frost protection machines/equipment and be prepared to avoid spring frost.** The most ubiquitous *active* frost protection method in eastern US vineyards is using a wind machine (photo, below) to mix air in attempt to mitigate spring frost injury. 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.

8. I'm going briefly comment on **shoot thinning** in case the spring of 2018 ends up being like 2017, and bud break occurs earlier than normal (this was experienced here in Georgia at least). However, I'll also comment on shoot thinning again in the March/April edition of *Small Fruits*). Shoot thinning is the first "canopy management" practice of the growing season. Like most management practices, all vines need attention at the same time. To optimize efficiency, shoots should be thinned by manually by hand removal. This is best accomplished when shoots are roughly 5-7" 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 four 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. Our recently developed and published Viticulture Management Poster (https://site.extension.uga.edu/viticulture/2019/01/viticulture-management-poster-available-at-a-conference-or-workshop-near-you/) can help you plan and implement sound seasonal viticulture practices, including shoot thinning.

9. **Plan for pesticides needs.** Order chemicals to manage weeds, insects, and diseases. Make a management plan before the season starts. Again, consider using the new Viticulture Management Poster (https://site.extension.uga.edu/viticulture/2019/01/viticulture-management-poster-available-at-a-conference-or-workshop-near-you/) to help you target important seasonal management periods for specific insect and disease pests.

That's about it. We will likely be seeing some bud break in more southerly-positioned vineyards in the southeastern US by the time the next "grape chores" list is published in the March/April edition of *Small Fruits*. This will be here soon – SO GET OUT AND GET PRUNING!

If you have not already done so, please subscribe to our extension viticulture blog for

updates on management, events, regional weather, etc.
http://site.extension.uga.edu/viticulture/

Winter Caneberry Checklist 2018-19

Gina Fernandez
Small Fruit Specialist
North Carolina State University

This checklist was originally developed for blackberry growers in North Carolina. Many of the items apply to raspberry production as well. You may have to adjust your work activities either earlier or later depending on your location.

This checklist is very general, but should help get you to think about what types of activities occur at various times of the year.
Check the items listed below off as they get done.

WINTER

Plant growth and development

- Plant is not visibly growing during the winter months although many blackberries will retain their leaves through the winter
- Some differentiation occurs in the flower buds (flowers continue to develop)
- Low chilling cultivars can break bud in January after adequate winter chilling. You can monitor chilling hours accumulated in eight states in the eastern US by accessing this site: **cronos/blackberry/chill_model**
- Developmental stages at this time of year as mentioned in the IPM guide http://www.smallfruits.org/assets/documents/ipm-guides/Caneberry-Spray-Guide.pdf

are : 1. Dormant 2.Delayed dormant (swollen bud) to green tip

Pruning and trellising

- Pruning should occur in late winter. However, in some areas winter ice storms can do tremendous damage to plants and trellis systems. If you produce blackberries in one of these areas, pruning can take place early winter to help avoid severe damage
- Make trellis repairs after plants have defoliated but before pruning and training.
- Erect types
  - Prune out the spent floricanes
  - Tie canes to wires in a fan shape
  - Cut lateral branches back to 8-12”
  - Thin canes to 6-8 canes/ hill (4 ft spacing)
- Trailing types
  - Prune out spent floricanes
  - Tie or weave canes to wire so that they do not overlap
  - Prune side laterals to 12-18”
  - Thin canes to 6-8 hill (6-8 ft spacing)
- Primocane fruiting raspberries and blackberries
  - Prune (mow) primocane fruiting types to ground level

Weed control

Check the Southern Regional Bramble Integrated Management Guide for recommendations. www.smallfruits.org

- Many summer weed problems can be best managed in the fall and winter using preemergent herbicides. Determine what weeds have been or could be a problem in your area. Check with local extension agent for cultural or chemical means to control these weeds.
- Some growers are having success with biodegradable mulch to suppress the weeds the year of the planting

Insect and disease scouting

Check the Southern Regional Bramble Integrated Management Guide for recommendations. www.smallfruits.org

- Scout fields for insect and disease damage and remove those canes

- Remove wild blackberries and raspberries by the roots if they are within 600 ft of your planting during the winter

Planting

- Take soil tests to determine fertility needs for spring plantings.
- There are some new raspberry and blackberry cultivars available each year. If you have not tried them or it is not know how they will do in your region, it is best to order a small quantity to see how well they will perform in your area
- For larger growers, prepare list of cultivars for 2020 plantings and order now. Smaller quantities of plants can be order in early 2019 for spring 2020 planting
- A commercial small fruit nursery lists at
    - www.raspberryblackberry.com/ fo r-growers/
    - https:// blogs.cornell.edu/berrynur series/

Water management

- Make repairs to irrigation system (check pumps, lines, etc.)
- Plants generally do not need supplemental water in winter

Marketing and miscellaneous

- Order containers for next season
- Make contacts for selling fruit next season

For more detailed information, check the Southern Region Integrated Bramble Management Guide and the Southeast Regional Bramble Production Guide online version: https://content.ces.ncsu.edu/southeast-regional-caneberry-production-guide
Or PDF version: http://www.smallfruits.org/assets/documents/ipm-guides/2016/AG-697_2016SoutheasternCaneberryProduction_Press.pdf

Attend grower meetings
North Carolina Commercial Blackberry and Raspberry Association. Feb 15, 2019. Meeting will be held at the Cleveland County Extension Auditorium, 130 S. Post Rd; Shelby, NC 28152. Please arrive in time to set up prior to the start of the meeting. Contact Daniel Shires for more information. (704) 482-4365

Social Media links:
Twitter: @NCTeamRubus
Facebook: Team Rubus
Blogs: http://teamrubus.blogspot.com/

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Editor and Contributor Wayne Mitchem

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