

Mississippi *Vaccinium* Journal

Volume 7, Issue 4

October-December 2018

Editor:

Eric T. Stafne

Contributors:

- Juliet Carroll
- Barbara Smith
- Eric Stafne

Inside this issue:

The Thin Veil	1
Annual Blueberry Education WS	1
Hummingbirds to control SWD	2
Hummingbirds	3
Hummingbirds	4
NABREW	5-7
Phosphorous acid test	8
Blueberry Mechanization Survey	9
Chill Hours App Reminder	10

The Thin Veil

As I write this it is Halloween Day 2018. Most of us know that Halloween started as a pagan celebration of the end of summer and the beginning of fall (and coming winter); the line that demarcates the living from the dead. Lately, I've been thinking about death a lot, having lost some friends very close to me. It's a tough thing to go through, but life and time marches on. The same is true of blueberry farming, some years are really tough, but "the play must go on" (so to speak). In some cases we lose crop to pests (SWD) or weather (lack of chilling). In this issue, we cover a strange, but intriguing idea of using hummingbirds to stop SWD. Also, the chill app gets revamped. I show some photos of the North American Blueberry Research and Extension Workers conference, and discuss some of the work I shared there. Remember, we are crossing that thin veil into winter, but life will spring eternal soon.

Annual Blueberry Education Workshop

The Mississippi State University Extension Service will be hosting a full-day conference for all blueberry growers in Mississippi and the surrounding area. The date will be in late January 2019 (TBD) at the Lake Terrace Convention Center in Hattiesburg and will run from approximately 9-4pm (subject to change).

Right now things are in the planning stages with more information to follow in the coming months, but topics will include information on mechanical harvesting, new cultivars, and more.

If you have received this newsletter via email, you will get notification of the conference details. The conference will also be advertised via other outlets as well. Stay tuned for more information .

Hummingbirds may reduce SWD

Juliet E. Carroll, Fruit IPM Coordinator, New York State IPM Program, Cornell University

Research in raspberries at Cornell AgriTech over the last four years has shown promise as an alternative tactic to reduce the impact of SWD on berries. As described in a previous blog posted in 2014, Hummingbirds, these birds may indeed enjoy eating SWD.



Fig. 1. A trend of fewer SWD caught in traps in positions 1-4, where hummingbird feeders are located, compared to more being caught in positions 5-9, where there are no hummingbird feeders, in a transect along a raspberry planting.

Preliminary data analysis for 2018 shows that when SWD numbers are very low or very high, there is little to no difference in the number of SWD caught in Scentry traps placed in the area of the field with hummingbird feeders compared to those in the area of the field without feeders. However, when numbers are moderate, there was a difference. Along a transect down the length of the field, the trend was for there to be fewer SWD in the hummingbird feeder area compared to the no-feeder area, as shown in the chart.

The diet of an average hummingbird consists mostly of flower nectar and insects. Flower nectar provides sugar to support their high metabolic rate... even higher during flight due to their rapid wing flapping rates. The insects hummingbirds eat provide them with protein, amino acids, and necessary vitamins and minerals. The insects must be small enough to swallow whole during flight — watch out, SWD!

-Continued-

Hummingbirds, cont.

Two grower demonstrations were undertaken this year, as well. One in blueberry and one in raspberry. Both growers undertook cleaning the feeders and changing the sugar solution twice per week to keep the hummingbirds well fed and active within their plantings. At the workshop held in Salem, NY last month, several of the tiny birds were seen dashing about.



Fig. 2. A grower at the SWD workshop watches as a hummingbird visits a feeder in the raspberry planting.

Placing and maintaining 25 hummingbird feeders per acre, may be a bit too arduous for some growers. This is the number of feeders we've been using in our research and grower demonstration plots and the number used by the blackberry grower in Mississippi.

Other ways to attract hummingbirds to your berry planting that don't rely on the use of feeders, would involve allocating space for flowering plants that they prefer. Interplanting with rows of Monarda (bee balm), for instance, would be one approach.

Of course, SWD is around a lot longer than hummingbirds, which have, at this point in time, likely flown off to the South on their journey to the Yucatan peninsula in Central America. Flying across the Gulf of Mexico or along Mexico's coast, they make their way to their overwintering grounds. And, as SWD populations explode in late summer, it is difficult to control SWD, let alone rely on a flying predator.

-Continued-

Hummingbirds, cont.



Fig. 3. Female or young ruby-throated hummingbird on a feeder set above a blueberry planting. Photo: R. Parker

If you think hummingbirds don't eat small insects, then guess again! I've seen these contraptions showing up in stores this year — to feed hummingbirds. They are rearing capsules for fruit flies (vinegar flies, as entomologists call them). Perhaps someone should tell them we don't need more SWD? ...just more hummingbirds!



Fig. 4. A humming"baby" feeder?

I met Dr. Carroll at the NABREW conference this year. To see the original blog post (with better photo quality) go here: <http://blogs.cornell.edu/swd/2018/09/18/hummingbirds-may-reduce-sw/>

North American Blueberry Research and Extension Workers Conference

Eric Stafne—MSU

The 2018 North American Blueberry Research and Extension Workers Conference (NABREW) was held in Orono, Maine. It was a great opportunity to see a blueberry production system I had never seen before — lowbush blueberries. The conference was held on the campus of the University of Maine.



The facilities were great and the presentations were as well. The website for more information is here: <https://digitalcommons.library.umaine.edu/nabrew2018/>. A proceedings will be published in the near future. I was there to present on a study Dr. Barbara Smith and I did on the use of phosphorous acid as a biostimulant for blueberry growth and yield. See page 8 for the abstract of the work.

The conference started off with a reception (see photo below). Although this is a North American meeting, blueberry scientists from all over the world come to present their work.



NABREW, cont.

As part of the conference we took a field trip out to see the blueberry fields during harvest season. It was eye-opening to say the least. Although some fruit is machine harvested, some is still hand harvested.



NABREW, cont.

We went to some fields that were 1,000 acres. That is a lot of blueberries! The bushes are quite low to the ground and often there are multiple species present. Management is a challenge because there are no rows.



One common pest is the black bear. An operation we went to trapped several bears during the season and had them relocated. A very different pest to say the least. If you ever get the chance to see these fields in Maine (or Canada) I highly recommend it.

On the next page is an abstract of the work Dr. Smith and I shared with colleagues at the conference. Does phosphorous acid show promise as a blueberry biostimulant? Read on and judge for yourself.

Effect of phosphorous acid and pruning height on renovated ‘Woodard’ rabbiteye blueberry

Eric Stafne and Barbara Smith , MSU and USDA-ARS Poplarville

Abstract: Phosphorous acid is a fungicide that may have other plant health-inducing properties. A previous study showed greater vigor in blueberry plants treated with phosphorous acid. In the current study, old, unproductive ‘Woodard’ rabbiteye blueberries were selected for renovation in 2017. The bushes had not been pruned or otherwise managed in several years. To test the hypothesis that adding phosphorous acid treatments (Agri-Fos) would be beneficial to the renovation process, three treatments were used; no addition of phosphorous acid, phosphorous acid applied as a drench at renovation pruning, and monthly foliar applications of phosphorous acid after renovation pruning and the following year. Two pruning height treatments were also done on July 14; bushes were pruned at ground level and bushes pruned at 50 cm. End of season shoot number was significantly different between the 50 cm cut and the ground level cut (35.6 50 cm vs. 21.1 ground). However, shoot length was greater for the ground cut (74.6 cm) vs. 50 cm cut (65.8 cm). Shoot diameters were not significantly different. Other factors such as first bud push after pruning and crop load rating were not significant. Interesting, phenological development recordings of flower stage did not differ at stages 2 to 4, but were different from stages 5 to 7. The 50 cm cut flower development was earlier by 9 days at stage 5, 10 days at stage 6, and 5 days at stage 7. There were no differences due to phosphorous acid treatments in data evaluated. More time may be needed to ascertain any differences among those treatments as it is not a direct, but rather induced, effect.

The full paper will be published in the near future on this page: <https://digitalcommons.library.umaine.edu/nabrew2018/>

Blueberry Producers' Attitudes toward Harvest Mechanization for Fresh Market

R. Karina Gallardo , Eric T. Stafne, Lisa Wasko DeVetter, Qi Zhang, Charlie Li , Fumiomi Takeda, Jeffrey Williamson, Wei Qiang Yang, William O. Cline, Randy Beaudry, and Renee Allen

Authors affiliations: Washington State University, Mississippi State University, University of Georgia, USDA-ARS, University of Florida, Oregon State University, North Carolina State University, and Michigan State University

The availability and cost of agricultural labor is constraining the specialty crop industry throughout the United States. Most soft fruits destined for the fresh market are fragile and are usually hand harvested to maintain optimal quality and postharvest longevity. However, because of labor shortages, machine harvest options are being explored out of necessity. A survey on machine harvest of blueberries (*Vaccinium* sp.) for fresh market was conducted in 2015 and 2016 in seven U.S. states and one Canadian province. Survey respondents totaled 223 blueberry producers of various production sizes and scope. A majority (61%) indicated that their berries were destined for fresh markets with 33% machine harvested for this purpose. Eighty percent said that they thought fruit quality was the limiting factor for machine-harvested blueberries destined for fresh markets. Many producers had used mechanized harvesters, but their experience varied greatly. Just less than half (47%) used mechanical harvesters for fewer than 5 years. Most respondents indicated that labor was a primary concern, as well as competing markets and weather. New technologies that reduce harvesting constraints, such as improvements to harvest machinery and packing lines, were of interest to most respondents. Forty-five percent stated they would be interested in using a modified harvest-aid platform with handheld shaking devices if it is viable (i.e., fruit quality and picking efficiency is maintained and the practice is cost effective). Overall, the survey showed that blueberry producers have great concerns with labor costs and availability and are open to exploring mechanization as a way to mitigate the need for hand-harvest labor.

This is an abstract from a paper originally published in HortTechnology: <http://horttech.ashspublications.org/content/28/1/10.abstract> It is the culmination of a survey done in several different states (including Mississippi). If you are interested in reading the entire article contact me (Eric Stafne) for a copy and I will email it to you.

The Mississippi Vaccinium Journal is a quarterly, digital publication of Mississippi State University Extension Service. Subscriptions may be obtained by sending an email address to eric.stafne@msstate.edu. All articles and images are copyright of Mississippi State University Extension Service. Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status.

Chill Hours App Gets Updates

Eric Stafne, MSU-ES

Just a reminder that you can track chill hours without buying and maintaining any specialized equipment. Just go to <https://webapps.msucares.com/> and look for the Chill Hours web application. Once it opens, plug in the start and end dates (usually we start with October 1 and it will go only up to the current date). Hit “Get Chill Hours” and let the fun begin. It may take a minute or two to load, but once it does the calculations will be at your fingertips. Chill hours for two different models are presented. This is also available as an app for your smartphone so you can check it anywhere, anytime. We are making changes to the app, adding new options to be more useful. We are also looking as adding Growing Degree Days so those can be tracked to help predict budbreak, insect development, etc. Right now there is no timetable for release but keep on the lookout for it.

