

Mississippi *Vaccinium* Journal

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I Will Play for 'Gumbo'

Native Mississippian Jimmy Buffett has a song called "I Will Play for Gumbo". It's a quirky, fun song about his love for the Creole (or Cajun, depending on how you make it) dish. Gumbo is a combination of many ingredients that make something great. In this fashion, the new southern highbush blueberry cultivar released from USDA-ARS is called 'Gumbo'. Read all about it on page 2. It marks a new era in collaboration between USDA-ARS and Mississippi State University. Some new cultivars will be patented, a first for blueberries from Mississippi, other will be public domain cultivars as was done in the past. Mississippi State University will help with marketing and distribution of these new cultivars both nationally and internationally. There are several other items of interest in this newsletter, so please take a look — maybe over a cup of gumbo.

Annual Blueberry Education Workshop

The Mississippi State University Extension Service will be hosting a half-day conference for all blueberry growers in Mississippi and the surrounding area. The date will be January 23rd at the MSU Forrest County Extension office in Hattiesburg and will run from 1-5pm.

Right now things are in the planning stages with more information to follow in the coming months, but topics will include information on disease sampling, pH and drought tolerance, food safety, and drones.

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 .

New Partnership Starting with 'Gumbo'

Stephen Stringer

USDA-ARS, TCHSL, Poplarville, MS 39470

The USDA/ARS and the Mississippi State University Agricultural and Forestry Experiment Station (MAFES) are collaborating to expedite the availability of new blueberry cultivars developed in the blueberry breeding and genetics research program at the Thad Cochran Southern Horticultural Laboratory in Poplarville. Several new rabbiteye and southern highbush blueberry cultivars adapted to Mississippi and the mid-south are being developed for joint release by the University and USDA/ARS and for potential plant patenting.

Among the first of these new cultivars is 'Gumbo' (see photo on next page), an early season southern highbush type blueberry, developed through interspecific hybridizations among several *Vaccinium* species. The new cultivar has several advantages for blueberry growers in the Southeastern U.S. Among the most important of these are earlier ripening period (2-3 wks.) than the earliest rabbiteye blueberry cultivars, the predominant type of blueberry grown in Mississippi and surrounding states. 'Gumbo' has consistently excellent plant vigor when compared to several other southern highbush blueberry cultivars being grown in the region.

Additional attributes of 'Gumbo' including early ripening period, good yield potential, and high fruit quality traits, 'Gumbo' is expected to provide growers along the U.S. Gulf Coast, and other subtropical regions where blueberries are grown, enhanced opportunities to compete in the lucrative early fresh berry market. In addition to providing blueberry nurseries access to licensing, MAFES will also establish a repository of new Mississippi blueberry cultivars and elite blueberry selections at the Mississippi State University Beaumont Experiment Station that will serve as a source for plant materials for research and commercial purposes.

‘Gumbo’, cont.



‘Gumbo’ at 3 years old with 4 foot spacing between plants.

Is Higher Soil pH What We Need?

Eric T. Stafne, MSU-ES

Recently, I have been asked several times about growing blueberries, primarily southern highbush, at higher soil pHs. Curious, I asked where this idea came from. Some individuals did not know, that the information was second-hand. But, other said it was from an article they read in American Fruit Grower magazine. In case you are interested the link to the article is below:

<http://www.growingproduce.com/fruits/berries/looking-beyond-soil-ph-in-berries/>

In the article, the author states, “A number of top performing blocks had soil pH ranges from 5.7 to 6.2 — still acidic, but not as acidic as might have been anticipated.”

As I read this some caution flags went up:

- What blocks?
- Where are these blocks?
- Are they adequately replicated to ensure a reduction in variability?
- What are the cultivars used?
- Is this from an actual study that uses multiple locations over multiple years or just one location measured once?

Now, don't get me wrong, the author brings up cogent points about macro and micronutrients in the soil and how they interact with soil pH. Yet, on the other hand, we do not have enough information to accept his recommendations out of hand.

For us in south Mississippi we have different conditions than the author (who is writing from Ohio). I don't know for sure his consulting is only in Ohio, but the upper Midwest sure grows different types of blueberries than we do here. Anyone in Mississippi growing 'Duke'?

The scientists at USDA-ARS are doing research on pH tolerance of blueberries that we do grow here in south Mississippi. Early indications are the cultivars that best tolerate elevated pHs are 'Onslow', 'O'Neal', and 'Tifblue'. Tolerant cultivars will be used in breeding to generate even better soil pH tolerance. More work is to come on this project which Dr. Shaw will present at our annual meeting.

My writing this is just to bring your attention to information that may warrant further thought. The information may be correct, but it needs to be taken in context, otherwise we may go down the wrong path.

I recommend remaining within the prescribed 4.5 to 5.5 range (with 4.8 to 5.2 being the target). Of course there are cultivars that can handle soil pH outside of this range, but why take that chance?

Foliar Applications of Calcium and Boron Do Not Increase Fruit Set or Yield in Northern Highbush Blueberry (*Vaccinium corymbosum*)

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Abstract

Fruit set in northern highbush blueberry (*Vaccinium corymbosum* L.) can be low under certain climatic conditions, contributing to reduced yields in northwestern Washington. The mechanisms influencing fruit set are complex, but reduced fruit set may be associated with inadequate nutrient availability during critical stages of flowering, ovule fertilization, and initial fruit development. Calcium (Ca) and boron (B) are of particular interest for reproductive developmental processes and are frequently applied annually by growers in the Pacific Northwest region because of the perception that these nutrients enhance fruit set and corresponding yields. Evaluation of commonly applied products containing these nutrients and their effects on fruit set and yield are of specific importance to justify the application of these nutrients. To address this, commercially available fertilizers containing Ca and B were applied to 'Draper' and 'Bluecrop' blueberry as foliar sprays, either alone or in combination, during the 2015 and 2016 growing seasons in northwestern Washington. Treatments included calcium chloride (750 and 1500 ppm Ca), calcium sulfate (150 ppm Ca), and tetra borate (125 and 250 ppm B) foliar sprays, repeated six times per season every 7–10 days from early pink bud through petal fall. No significant increases were observed for fruit set, estimated yield, and fruit quality (firmness and berry weight) across the treatments. Increased concentrations of B were observed in leaf tissues in 2015 and 2016, and to a lesser extent fruit tissues. Calcium remained unchanged regardless of treatment and tissue type. Under the conditions of this study, foliar applications of Ca and B did not lead to increased fruit set or yield. This research suggests that other approaches should be explored to increase fruit set and corresponding yields of highbush blueberry grown in northwest Washington.

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<http://hortsci.ashspublications.org/content/52/9/1259.abstract>

Dr. Ebrahiem Babiker, New USDA-ARS Research Geneticist in Poplarville

Dr. Babiker received his B.Sc in horticulture from the University of Khartoum, Sudan, and his M.Sc. in plant breeding from the South Dakota State University (2006), and Ph.D. in plant pathology from Washington State University (2012). Prior to arriving at TCSHL, Ebrahiem was a postdoctoral research plant pathologist with the USDA-ARS in Aberdeen, Idaho.

His research has focused on identifying and characterizing new sources of resistance to *Puccinia graminis* f. sp. *tritici* race TTKSK from wheat landraces, developing SNP markers associated with TTKSK resistance, and pyramiding TTKSK resistance genes with known Sr genes.

During his Ph.D. program, he evaluated the performance of different synthetic wheat genotypes and Brassica species under soil infested with *Rhizoctonia solani*, identified QTL associated with tolerance to *Rhizoctonia* root rot disease, and developed a management strategy to reduce the severity of the disease. In addition, he developed a PCR-based assay to detect the presence of *Hyaloperonospora camelinae* in camelina seed, and developed seed treatments to control downy mildew of camelina.

He was also involved in research focused on molecular characterization of an EMS mutant with increased resistance to acetolactate synthase inhibitors herbicides.

He is presently working on enhancing fall-fruited in blueberries among other important genetic traits.

Please help me welcome Dr. Babiker to the Thad Cochran Southern Horticultural Laboratory!



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Reminder on Chill Hours App

Eric Stafne, MSU-ES

Just a reminder that you, yes 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.

