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# Mississippi *Vaccinium* Journal

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## Nothing Trumps a Good Education

That's what I believe anyway. If we continue to educate ourselves with good, factual information we will be ahead in any endeavor we wish to follow. That is why Mississippi State University Extension Service, Mississippi Agriculture and Forestry Experiment Station, and the USDA-ARS continue to offer the annual Mississippi Blueberry Education Workshop. This year with the assistance of grant funding via Dr. Alba Collart at MSU, we are able to offer attendees a lunch and we are able to bring in some great speakers from around the southern region of the U.S. Speakers will be from North Carolina State University, University of Georgia, Louisiana State University, Mississippi State University, and the USDA-ARS. Topics will range from pest management, to cultivars, to cultural management. So, come on out and hear all the good information and gain some important knowledge. See pages 2 and 3 in this newsletter for more specific information and how to register. I hope to see you there!

## New Chill Hour Calculator Coming Soon

### **Eric T. Stafne, Fruit Extension Specialist, MSU-ES**

Very soon a new tool will be available to blueberry growers who wish to track chill hours. It is an online tool as well as a smartphone application that calculation chill hours at established weather data locations. Of course the most accurate method of obtaining chill hours is by having your own instruments and measure on your farm; however, this is the next best thing. Tracking chill hours can be important to anticipation of bloom as well as other issues related to the plant development. I will be giving a presentation on this tool at the upcoming Mississippi Blueberry Education Workshop to be held in Hattiesburg. For more information on this exciting event see pages 2 and 3.

## Agenda for the 2017 Blueberry Education Workshop

Eric T. Stafne—Fruit Extension Specialist, MSU-ES

The 2017 Mississippi Blueberry Education Workshop will be held on January 31 in Hattiesburg (see Page 3 for more details).

### TENTATIVE AGENDA

#### 2017 MISSISSIPPI BLUEBERRY EDUCATION WORKSHOP

<u>Time</u>	<u>Author, Title</u>
9:00-9:30am	<b>Registration</b>
9:30-9:45am	<b>Consumer Demand for Selected Food Products Made with Mississippi-Grown Blueberries</b> Dr. Alba Collart, Dr. Matthew Interis, and Dr. Juan Silva Mississippi State University
9:45-10:15am	<b>Fruit Quality Evaluations in Southern Highbush and Rabbiteye Blueberries</b> Dr. Rachel Itle University of Georgia
10:15-10:35am	<b><i>Xylella fastidiosa</i> in Rabbiteye Blueberry: What to Know</b> Dr. Mary Helen Ferguson Louisiana State University
10:35-10:50am	<b>Blueberry Stem Blight – Symptoms and Control</b> Dr. Melinda Butler USDA-ARS Thad Cochran Southern Horticultural Laboratory, Poplarville, MS
10:50-11:30am	<b>SWD Management in Blueberry: Optimizing Available Tools and Ongoing Research</b> Dr. Lauren Diepenbrock and Dr. Hannah Burrack North Carolina State University
11:30-12:30pm	<b>Lunch</b>
12:30-1:00pm	<b>Identifying Germplasm and Traits Resistant to Spotted Wing Drosophila</b> Dr. Blair Sampson USDA-ARS Thad Cochran Southern Horticultural Laboratory, Poplarville, MS
1:00-1:20pm	<b>Update on Southern Highbush Blueberry Production in High Tunnels</b> Dr. Guihong Bi, Dr. Tongyin Li, and Judson LeCompte Mississippi State University
1:20-1:35pm	<b>New Activities from the Blueberry Breeding and Genetics Program at the USDA-ARS in Poplarville</b> Dr. Stephen Stringer USDA-ARS Thad Cochran Southern Horticultural Laboratory, Poplarville, MS
1:35-2:00pm	<b>Update on Regulations That Can Impact You – FSMA and Produce Safety</b> Dr. Juan Silva Mississippi State University
2:00-2:15pm	<b>A New Chill Hours Website and Smartphone App</b> Dr. Eric Stafne and Kelli Alexander Mississippi State University
2:15-2:30pm	<b>Program Evaluation</b>
2:30-3:00pm	<b>Q &amp; A, Wrap-up</b>

## 2017 Mississippi Blueberry Education Workshop



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DEPARTMENT OF PLANT AND SOIL SCIENCES  
pss.msstate.edu



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DEPARTMENT OF AGRICULTURAL ECONOMICS  
agecon.msstate.edu

### 2017 BLUEBERRY EDUCATION WORKSHOP JANUARY 31, 2017

LAKE TERRACE CONVENTION CENTER  
EXHIBIT HALL B/C

1 CONVENTION CENTER PLAZA  
HATTIESBURG, MS 39401



#### Program

9:00-9:30 am	Registration and Welcome
9:30-11:30 am	Morning sessions
11:30 am-12:30 pm	Lunch (provided to registered attendees)
12:30-2:30 pm	Afternoon sessions
2:30-3:00 pm	Wrap up, Q&A

#### Near By Hotels:

- ★★★ Holiday Inn Hotel & Suites Hattiesburg-University, 601.296.0302
- ★★ Sleep Inn & Suites, 601.268.1722

Hattiesburg visitor's guide for hotel and local eatery information:  
Click [here](#)

#### To Register:

- **By email or phone:**

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*Funds for this workshop were provided through the Mississippi Department of Agriculture and Commerce, USDA Specialty Crop Block Grant Program.*

## Coastal area producers to meet Feb. 28 in Biloxi

BILOXI, Miss. -- The annual meeting of the Mississippi State University Coastal Research and Extension Center's Commodity Advisory Meeting is set for Feb. 28.

Agricultural producers can meet with representatives of the MSU Extension Service and Mississippi Agricultural and Forestry Experiment Station to share feedback and offer direction for educational programs and research projects in 2017.

Eleven individual commodity sessions begin at 9:30 a.m., including forestry, fruits, vegetables, livestock, bees, home horticulture, commercial ornamental horticulture, seafood and aquaculture, corn and cotton, soybeans and peanuts, and horse and small ruminants.

The program begins at 9:20 a.m. and ends at 3 p.m. A tentative agenda is available at <http://coastal.msstate.edu/advisory>.

All commodity groups will share their priorities during a general session after lunch.

Deadline for preregistration is Feb. 21. On-site registration begins at 9 a.m. on Feb. 28. Lunch will be provided.

The Coastal Research and Extension Center is located at 1815 Popp's Ferry Road in Biloxi.

For more information or to register, call the Coastal Research and Extension Center at 228-388-4710.

## Blueberry Stem Blight

Melinda Butler, Ph.D. USDA-ARS Thad Cochran Southern Horticultural Lab, Poplarville, MS

Stem blight is a destructive disease of blueberry plants caused by several fungi found within the Botryosphaeroaceae family. The infection of blueberry stems occurs through wounds such as those caused by herbicide injury, winter injury, pruning, and mechanical harvesters. After infection by the fungus, the stem usually begins to die, and sometimes the plant may exhibit flagging where one cane dies (Figure 1). Blueberry stem blight causes a discoloration of the tissues just under the bark (Figure 2). The disease may move through the vascular system down to the crown, killing the plant. Stem blight has been reported to be more severe on vigorously growing plants than on slower growing plants. The disease is not well managed with fungicides. Pruning well below the diseased area is recommended, but if the disease reaches the crown, the plant should be removed from the field. Infected plant material should be destroyed by burning or burying, not placed on a compost.

Research plant pathologist, Dr. Barbara Smith, has been conducting research on blueberry stem blight disease at the USDA-ARS in Poplarville, MS, and has observed the effects of fungicides and fertilizer type and rate on lesion length. Following fungicide applications to blueberry stems, stem blight lesions were shorter compared to the untreated controls, which suggests that the fungicides may have slowed the infection process, but did not prevent lesion development. The effect of fertilizer type and rate on stem blight lesion development indicated an increase in lesion length on stems of plants receiving fertilizers (regardless of type and rate) compared to stems from plants that were not fertilized, which supports the reports of stem blight being more severe on vigorously growing plants. The efficacy of several fungicides to control stem blight was tested in in vitro assays by growing several stem blight fungal isolates on an agar media containing different rates of each fungicides. The in vitro assays showed that cyprodinil + fludioxonil (Switch®), pyraclostrobin + boscalid (Pristine®), and propiconazole (Orbit, Tilt, Bumper, PropiMax) inhibited the growth of two stem blight pathogens, *Botryosphaeria dothidea* and/or *Neofusicoccum parvum*. These fungicides are registered for control of one or more post-harvest foliar blueberry diseases and might also offer some reduction in stem blight especially if applied immediately following operations that might wound plants, such as mechanical harvesting or pruning. Unfortunately, fungicide control of blueberry stem blight in the field has been unsuccessful.

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## Blueberry Stem Blight, cont.

Melinda Butler, Ph.D. USDA-ARS Poplarville

Future research will rely on obtaining fresh samples of the stem blight pathogens each growing season. Blueberry growers are most likely to spot stem blight in their fields when the plants are actively growing in the spring or early summer. We would like to collect new stem blight sample isolates for 2017 from the tristate area of Alabama, Mississippi, and Louisiana. If you think your blueberry plants may have this disease, please contact me by e-mail at [Melinda.Butler@ars.usda.gov](mailto:Melinda.Butler@ars.usda.gov).



Figure 1. Stem blight on two year old Southern Highbush blueberry plant.



Figure 2. Internal discoloration of stem (<http://www.ces.ncsu.edu/>).

## Bacterial wilt of southern highbush blueberry caused by *Ralstonia solanacearum*

Phil Harmon, UF IFAS Extension Blueberry Plant Pathologist

Bacterial wilt is a newly discovered disease of blueberry in Florida. Symptoms of the disease are similar to those caused by *Xylella* and bacterial scorch. Plants with bacterial wilt will show signs of water stress such as wilting and marginal leaf burn. Symptoms can quickly become severe and can kill plants in as little as three weeks in inoculation trials. Plants may also be prone to develop severe symptoms of other stress diseases such as stem blight in the affected patches and may show symptoms of both diseases. Crowns of blueberry plants with bacterial wilt have a mottled discoloration or light brown to silvery purple blotches with ill-defined borders (Fig. 1). This discoloration is distinct from that which occurs with stem blight disease, because stem blight discoloration is typically pie-piece-shaped and pecan brown in color. Additionally, wood chips floated in water from crowns of plants with bacterial wilt will stream bacterial ooze, Fig. 2. Stem blight infected wood chips do not.

Unlike *Xylella* which causes bacterial leaf scorch, this bacterial pathogen can be spread easily in water, soil, or through infected plant material. Plants can be infected without showing symptoms. *Ralstonia* can survive for years in soil, slowly spreading down and across rows of blueberry leaving large circular patches of dead and dying plants (Fig.3 + 4) similar in appearance to *Phytophthora* root rot affected areas, but not necessarily only in low-lying and poorly-drained soils. The pathogen is efficiently spread in recycled irrigation water and in ponds used for irrigation once introduced to a farm or nursery facility. *Ralstonia* can also be moved on pruning and other equipment from plant to plant once established.

The disease has initially been confirmed on three farms, two in Desoto County and one in Orange County in Florida. On all three farms, the variety Arcadia was the most severely affected. Other varieties may also be susceptible, but additional research is needed before we will know for sure. Although this is the first time the disease has been confirmed on blueberry in Florida, populations of the pathogen are common in Florida on other hosts. *Ralstonia solanacearum* causes diseases on a wide range of other plants including geranium, tomato, potato, peppers, and several other weedy, ornamental, and crop plants. We don't know why it has only now been found causing disease on blueberry. There has only been one other case of bacterial wilt on highbush blueberry known, and that was confirmed on a single farm in New Jersey in 2012 by scientists at Rutgers.

To manage the disease, first make every effort to keep from introducing the bacterium onto your farm. The risk of introduction can be reduced by limiting movement between farms of soil or infected plant materials on equipment and workers tools such as tractors, pickups, pruning shears, etc.. Mud transferred on vehicles during freeze protection from farm to farm is another possible mechanism. Purchase and use only healthy plants free of disease.

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## Bacterial Wilt, cont.

Phil Harmon, UF

Second, remove and burn or bury infected plants where the bacterium is detected. Then, use soil drenches of products with phosphorous acids or salts to help protect surrounding plants from infection, and prior to replant. K-Phite is an example that is labeled for blueberry and for soil drench or chemigation application for *Ralstonia* control. For chemigation application through drip, use 2 to 4 quarts in at least 200 gallons of water per acre. For an application to soil, use 2 to 4 quarts in a minimum of 20 gallons per acre then lightly apply overhead irrigation after application. Potted plants can be drenched with a solution of 2 to 4 quarts of K-Phite in 100 gallons of water prior to planting into fields where the disease has occurred. On other crops, this method has successfully protected plants from infection. Follow-up applications made according to the label are also recommended and can be made on a 7 to 28 day interval. Similar alternative products are available from other manufacturers.

Injection or soil applications are recommended at this point for the variety Arcadia wherever planted and for all varieties on farms where the disease has been confirmed. Send samples of Arcadia showing wilt, scorch, or plant death that moves down rows through your county extension agent, or directly to the UF IFAS Plant Diagnostic Center in Gainesville for a diagnosis. Plants that are sampled from the affected areas should be sick but not dead, and we need a fresh crown to test, so use an overnight or two day shipping option. The lab is covering the diagnostic fees for culturing and PCR to support the delimitation and management strategy. The address is below, and include a sample submission form that indicates the plant location and variety, and the need for bacterial wilt testing. Call the lab with any sample or shipping questions; test results will be emailed to the sample submitter and the blueberry pathology extension specialist.

Direct questions concerning bacterial wilt to the state blueberry pathology extension specialist Dr. Phil Harmon: office phone 352 273 4622, and email [pfharmon@ufl.edu](mailto:pfharmon@ufl.edu).

Diagnostic Center website:

<http://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center/>

The form:

([http://plantpath.ifas.ufl.edu/media/plantpathifasufledu/plant-diseaseclinic/PDC\\_Submission\\_form\\_CC-1.19.16.pdf](http://plantpath.ifas.ufl.edu/media/plantpathifasufledu/plant-diseaseclinic/PDC_Submission_form_CC-1.19.16.pdf))

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[fdc@ifas.ufl.edu](mailto:fdc@ifas.ufl.edu)



## Bacterial Wilt, cont.

Phil Harmon, UF



Figure 1

Figure 2



**Bacterial Wilt, cont.**

Phil Harmon, UF

Figure 3



Figure 4





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## Mississippi Vaccinium Journal

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## Webinar on SWD

Topic:

### **Making the Most of Your Insecticide Toolbox to Manage SWD**

Description:

Members of the Sustainable SWD Project will present a webinar online on January 25th at 12-1pm eastern time, highlighting information about control of the invasive insect pest, spotted wing Drosophila. The webinar titled "Making the Most of Your Insecticide Toolbox to Manage SWD" will cover research conducted during the first year of this project, and will provide recommendations for growers to prepare for the 2017 growing season. For this webinar, presenters from North Carolina State University, Michigan State University, and the University of Georgia will report on their research on insecticidal control of spotted wing Drosophila, with future webinars planned to report on monitoring, biological control, and other aspects of this multistate project. Funded by the USDA-Specialty Crops Research Initiative, this multiyear project aims to improve grower's options for the control of this invasive pest.

Time:

**Jan 25, 2017 11:30 AM in (GMT-5:00) Eastern Time (US and Canada)**

Register here:

<https://msu.zoom.us/webinar/register/5c0227f576a61869d746f627e8486654>