

## **2019 SRSFC Outreach Report**

**Title: Virtual Blueberry School 2019**

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### **Public Abstract:**

A Virtual Blueberry School was conducted in 2019 covering the major aspects of blueberry production in the Southeastern US. The school consisted of (i) a series of live grower workshops in May, June and September in Arkansas and (ii) a four-part weekly webinar series offered exclusively to county extension agents in November. Talks and recorded content from the live meetings formed the basis for the webinars. Topics included site selection and soils; establishment, cultivars, plant development and physiology; disease, insect and weed control; drip and overhead irrigation; freeze protection, pruning, harvest, food safety, and budgets for large and small farms. Presentations are available for viewing on YouTube, at the SRSFC website, and at University of Arkansas Cooperative Extension ([www.uaex.edu/blueberryschool](http://www.uaex.edu/blueberryschool)) and North Carolina State University (NCSU) blueberry portals.

### **Introduction:**

The goal of our project was to provide basic and up-to-date education on commercial blueberry production to both live and virtual audiences in the Southeast. In order to accomplish this we planned an in-person workshop series and online webinar series that covered the basic information and skills needed to start or maintain a commercial blueberry planting in the Southeast. The in-person series was comprised of classroom and

hands-on field activities. The content developed for the in-person course was then adapted to a format suitable for webinar trainings. The four-part webinar series was comprised of two short talks followed by a question and answer session in each 1-hour webinar. The presentations given during the webinar were recorded and are now available on YouTube. During both the in-person course and the webinar series participants were given tests of knowledge prior to the class and the same test again at the end of the class. These pre- and post- tests of knowledge were compared to assess how well participants learned about the topics over which they were given instruction. Participants were also asked about their satisfaction with the course and their plans to use the knowledge or skills gained.

### **Description of Outreach activity:**

#### **In-person Grower Workshops:**

A series of three in-person workshops were conducted in Arkansas. Mr. Bill Cline travelled from NC to help lead the classes in conjunction with Dr. Amanda McWhirt and UACES county agent Ryan Neal. Lizzy Herrera provided technical support to each meeting. Recordings were also made at the Missouri Blueberry School in February 2019 in conjunction with Patrick Byers of University of Missouri Cooperative Extension. Dr. McWhirt and Ryan Neal both presented at the Missouri workshop. The following is a description of the 3-part in person workshop series conducted in Arkansas:

**May 9** – Clarksville AR – Classroom: Basics of crop physiology (McWhirt), Insects (Zoom presentation Dr. Hannah Burrack), Diseases (Cline), Experience with direct market vs. wholesale (Cline), Farmer perspective on varieties, farm overview (Ryan Neal, county agent and farmer in AR). Field: Tour of experimental blueberry plantings and cultivar trials at the University of Arkansas Fruit and Research Extension Center (FRS) in Clarksville, Arkansas. The field portion of the workshop included a discussion of bird control strategies (netting, BirdGuard distress call) and a food safety.

- 28 participants
- 94% said they plan to use the information learned on their farm
- 35% increase in knowledge as assessed by pre- and post- tests

**June 4** – Northwestern AR – Classroom: Site selection, soils and fertility (Cline), Weed control in blueberries (Zoom presentation by Dr. Mark Czarnota, UGA). Field: Farm tours in the Rogers, AR area included (i) The Blueberry Barn (Dozier farm) and (ii) Neal Family Farm.

- 25 participants
- 100% said they plan to use the information learned on their farm
- 18% increase in knowledge as assessed by pre- and post- tests
- 100% rated the farm tours as 5/5 for quality

**September 12** – Clarksville, AR – Classroom: Cultivars (Cline), Pruning (Cline), Plans for computer-based interactive fruit budgets (Jennie Popp, UArk), Food safety (Amanda Perez, UArk). Field: Activities at University of Arkansas Fruit and Research Extension Center; demonstration of large and small sprayers and sprayer calibration (Station staff).

- 17 participants
- 92% said they plan to use the information learned on their farm
- 39.5% increase in knowledge as assessed by pre- and post- tests

#### Online Webinar Series:

The webinar series was hosted by the University of Arkansas Cooperative Extension Service (UACES) in Little Rock, Arkansas on ZOOM. Bill Cline and UACES county agent Ryan Neal joined as presenters from their locations in NC and Northwestern AR. Mary Poling and Samantha Barker UACES communication staff led the ZOOM technical support. Amanda McWhirt acted as moderator. Lizzy Herrera led video editing and acted as behind the scenes technical support. Live participation in the online weekly one-hour webinar series was only open to county agents, but sessions have since been published on YouTube and posted on the Southern Region Small Fruit Consortium website:

<https://smallfruits.org/2019/11/2019-blueberry-school/> . Agents were given access to the recordings and the PowerPoint slides so that they can use them in their programming.

**November 5** – Cultivars; Soils and fertility,

- 76 agents and extension personnel attended.
- Average 25% increase in questions answered correctly following the webinar.
- 100% of agents said they planned to use the information they learned
- 66% of agents rated the material as 5/5 for quality, and the remainder rated it 4/5
- 64% of agents rated the material as 5/5 usefulness, and the remainder rated it 4/5

**November 12** – Insects; Diseases

- 83 agents and extension personnel attended.
- Average 38% increase in questions answered correctly following the webinar.
- 100% of agents said they planned to use the information they learned
- 59% of agents rated the material as 5/5 for usefulness, and 41% rated it 4/5
- 63% of agents rated the material as 5/5 for quality, 35% rated it 4/5

**November 19** – Weed control; Drip irrigation; Overhead irrigation for freeze protection

- 61 agents and extension personnel attended.
- Average 31.5% increase in questions answered correctly following the webinar.
- 100% of agents said they planned to use the information they learned

- 48% of agents rated the material as 5/5 for usefulness, and 52% rated it 4/5
- 53% of agents rated the material as 5/5 for quality, 47% rated it 4/5

#### **November 26** – Pruning; Large- and small-scale budgets

- 55 agents and extension personnel attended.
- Average 19.5% increase in questions answered correctly following the webinar.
- 100% of agents said they planned to use the information they learned

#### **Results or Outcome:**

##### In-person Workshops:

- **100% of participants said the course was “worth their time and money”**
- On average over the course of the three workshops 95.3% said they plan to use the information they learned on their farm
- There was an average 30.8% increase in participant knowledge based on comparisons of pre- and post-test scores.

##### Online Webinar:

- ***99 county extension agent personnel were trained in at least one webinar***
- Increased awareness of the SRSFC
  - In week 2 of the webinar 55% of agents said they used smallfruits.org for resources, by week 4 of the webinar 91% said they plan to use it in the future.
- Do participants plan to use the developed materials to hold their own training?
  - 63% of participants who answered the final poll said they planned to use the PowerPoints to hold their own training, 33% said they will “maybe” use the materials to hold their own training and 4% said they do not plan to hold their own training.
  - 49% plan to use the recorded YouTube talks to give their own training.
- Impact on County Agents Knowledge and Confidence
  - Agents tested knowledge increased an average of 28.5% during the course of the webinar.
  - 31% of participants said the training had an “excellent impact” on their ability to answer questions about blueberry production, 63% said the training had a “good impact” and 6% said it had an “average impact”.
- Agent Satisfaction with the Webinar Training Format
  - 100% said they feel they learn efficiently using the webinar format
  - 100% said they would like more webinars trainings to be held on small fruits
  - 95% of participants polled said the format ( 4 webinars over 4 weeks) was either “satisfactory” or “very satisfactory”
  - 98% thought the 1-hour webinar was the right length

- 100% thought they were adequately able to interact with the speaker, and 62% thought they were adequately able to interact with the other participants. Most people rated interaction with other participants as a low priority. Interaction with the speakers was rated as a high priority.

### **You-Tube Videos:**

As of this writing of this report (12/9/2019) the YouTube videos produced had over 700 views.

#### *Spring*

**Blueberry Cultivars:** <https://youtu.be/owNT9gL1W5s>

**Blueberry Site Preparation and Establishment:** <https://youtu.be/tDk6Ex95Cbc>

#### *Summer*

**Insect ID, Biology, and Management in**

**Southeastern Blueberries:** <https://youtu.be/tBLoUkFzUEQ>

**Blueberry Disease Management:** [https://youtu.be/\\_qkxgHgOvzs](https://youtu.be/_qkxgHgOvzs)

#### *Fall*

**Blueberry Weed Control:** <https://youtu.be/GP8-MNrR19U>

**Blueberry Drip Irrigation:** <https://youtu.be/MnrBwJM-rZk>

**Blueberry Freeze Protection:** <https://youtu.be/lKfhw5k2ihM>

#### *Winter*

**Blueberry Pruning:** [https://youtu.be/E\\_fglEl9mVo](https://youtu.be/E_fglEl9mVo)

**Blueberry Economics:** <https://youtu.be/M53ZQ6-lmps>

### **General Comments from Webinar Participants:**

- “Great presentation, flowed well and agents should be able to repeat a class in their own region once we are done with training”
- “Thanks for putting on a terrific class!”
- “I enjoyed the entire webinar. I was very impressed by the flow of the whole module. Very good moderator.”
- “I like that it was an hour long, not too long to be away from my "normal" work and still learn. I love that we have access to the PPTs and the recorded webinars for our use to teach farmers and for me especially beginning farmers.”
- “Great format and very professionally put together! While I have no commercial blueberry producers, I do have some home owners with bushes in pots and raised beds. This is the most training I have ever received on the subject of blueberries so the information was extremely helpful!”

- *“The information was very easily digestible. I learned a good bit but was not overwhelmed with information. The information was the right mix of science and experiential knowledge. The balance of Bill and Ryan was just right.”*
- *“Bill's pruning talk. I have heard his pruning talk numerous times, but every time I gain a little bit more information.”*
- *“Dr. Amanda McWhirt really brings everything together in this entire production. She keeps good time from start to finish and does an excellent job moderating. Each episode was exactly an hour, making it easy to work into my schedule and not worrying about being late for the next appointment because the first ran too long. Would definitely sign up for another one of her webinar programs.”*
- *“I have a blueberry planting at a research station. I will use the information (already have) to train small farmers, Master Gardeners on how to plant, prune, irrigate, and select cultivars in a field demo type setting.”*
- *“I appreciate this type of training and opening it up to those of us in Missouri. Thank you. I have found that farmers/participants don't really like sitting through recorded webinars. They prefer to be taught from a live person. Hence I will use the PPTs and I will adapt them to Missouri conditions. However, I will use the recorded webinars to refresh my memory and skills before I teach any blueberry information. Thank you again”*

*Poll Question from week 1: “What state are you from?” (59 responses)*

