2025 Progress Report R-23

Title: Weed Control Strategies for Container-Grown Blueberries.

Name, Mailing and Email Address of Principal Investigator(s):

Principal Investigator:
Dr. Patricia R. Knight
711 W North Street
Poplarville, MS 39470
prk3@msstate.edu

Co-Principal Investigators:
Dr. Eric T. Stafne, 711 W. North St, Poplarville, MS 39470; eric.stafne@msstate.edu
Dr. Kathryn K. Fontenot, 163 J.C. Miller, Baton Rouge, LA 70803; KKFontenot@agcenter.lsu.edu
Ms. Jenny B. Ryals, 711 W. North St, Poplarville, MS 39470; j.ryals@msstate.edu
Ms. Haley N. Williams, 711 W. North St, Poplarville, MS 39470; hnw111@msstate.edu

Introduction:

Southern highbush blueberry, *Vaccinium* spp., is a popular blueberry grown in the southeast. In Louisiana and Mississippi, commercial container nurseries are increasing production and sales of blueberries. After consumer purchase, blueberries can be left in the sales container (for varying periods), transplanted into larger containers, or planted in the ground. Growing blueberries in containers is important for consumers for several reasons. First, containers offer flexibility, allowing individuals with limited garden space or poor soil conditions to cultivate these nutritious and delicious berries. This accessibility empowers urban dwellers or those in apartments to experience the joy of homegrown blueberries. Additionally, locating or modifying land to meet the specific nutrient requirements for successful southern highbush blueberry cultivation can be challenging. Using containers with soilless substrates, on the other hand, enables precise management of nutrient levels, ensuring the plants receive the necessary nutrients for

optimal productivity. Lastly, container gardening provides the convenience of easily moving the plant to maximize sunlight or protection during extreme weather, ensuring a more bountiful harvest.

Effective weed control in the wholesale or consumer production cycle of this crop is essential. Inadequate weed control during any growth phase of a crop limits plant growth. For the consumer, it can impact both growth and fruit yield. Controlling weeds with herbicides is not always the easiest/best solution. In states like Florida, fruit growers are having to limit herbicidal sprays in order to bring their plants to market with fruit on them. There is also a lack of herbicides labeled for use on fruiting blueberries in containers, making weed control challenging. Weed resistance to herbicides is also a growing concern, posing significant challenges to effective weed management. Additionally, herbicides available to consumers differ from commercial products, and some consumers may be adverse to using chemicals, regardless of label. Utilizing alternative weed control methods rather than relying on herbicides is a sustainable approach that benefits both the environment and human health. These alternatives not only promote soil health and biodiversity, but also minimize the risk of herbicide residues entering our food chain.

With the current labor shortages and increasing wage rates, it is becoming more and more difficult for fruit growers to secure labor for performance of tedious tasks, like hand weeding, along with other daily tasks. Mulches are widely used in the landscape industry to reduce weed growth and have been used in large container production and propagation greenhouses to reduce weeds. The mulch provides a physical barrier that can limit light from reaching the substrate, preventing weed seed germination.

Materials and Methods:

The study will take place at the Mississippi State University, MAFES South Branch Experiment Station in Poplarville, MS. 37.8-liter (10-gal) containers will be filled with 100% pine bark substrate and 1-2 year old southern highbush blueberry plant (*Vaccinium* spp.) will be transplanted into the containers. Containers will then be placed under drip irrigation that will be adjusted as needed throughout the study. Six treatments: three mulches (rice hulls, chopped pine straw, or vermiculite), two pre-emergence herbicides (sulfentrazone or indaziflam), and an un-mulched control will be evaluated for weed control effectiveness. We propose to evaluate control of two weed species, depending on seed availability, with each species treated as a separate experiment. Each container will be overseeded with 20 seeds of an individual weed species, either under or on top of the mulch. The experiment will be conducted in a randomized complete block design with 4 blocks and 4 replications of each treatment combination per block. Weed number will be recorded at 15, 30, and 60 days after seeding (DAS) and weed fresh weight will be collected 60 DAS.

Results and Discussion:

Obtaining materials took longer than expected, data has yet to be collected. Project will begin Spring of 2026. Official extension of project to February 28, 2027 was granted on September 23, 2025.