

**Title:**

Evaluating Cultivar Selection and Trellis Types to Support Blackberry Growers in the Mid-South

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**Public Abstract:**

Small to mid-scale small fruit production is a growing area of interest in many parts of Tennessee and the mid-south. High crop quality, rapid time to harvest, and increasing options in terms of cultivars and training systems all make blackberries of interest and value to growers in the mid-south. With the rapid development and release of new cultivars representing both traditional floricanes as well as newer primocane cropping habit, there is a crucial need for high quality and regionally specific information on blackberry selection and management. Along with blackberry type and cultivar decisions, new options in training and trellis systems, such as rotating cross arm, are available for growers. However, these new cultivars and trellis systems create a need for demonstrations and educational resources to support Extension personnel in engaging with small fruit growers

and helping them make the best decisions in terms of production management and economics on their farm operation. To address these questions and provide demonstration areas to both conduct applied research as well as teach and provide demonstrations, this project will establish both cultivar and trellis system demonstration plots at a UT research and education center in middle Tennessee.

### **Introduction:**

This outreach project is designed to provide Extension personnel with cultivar and trellis systems as well as economic information to support small and mid-scale blackberry growers in the mid-south. We will develop various training resources, including enterprise budgets and other educational materials (e.g., videos, fact sheets) that will equip Extension personnel with the necessary tools to better assist small and medium-scale growers make more informed decisions related to installing, producing, and marketing blackberries.

The average blackberry operation in Tennessee is currently under 1 acre (USDA-NASS), therefore, information provided needs to be targeted to these small to medium-scale and often diversified operations. Common hurdles for growers establishing a new blackberry operation or diversifying an existing farm business by adding blackberries to the crop mix include making decisions about the initial size of the growing area, cultivars to grow, and crop management methods, such as trellis systems. Understanding the economics of blackberry production and marketing is a crucial element in all of these decisions. Therefore, this outreach project will address common horticultural questions, including: “What type (primocane, floricanne) of blackberry should I grow?”; “What cultivar should I grow?; “What trellis/training system best fits my management and labor resources?”; and “Where should I sell my product?”. These questions will be answered for growers in the mid-south by combining horticultural information generated from demonstration sites and enterprise budgets.

This project will benefit producers starting new blackberry operations as well as those diversifying or rejuvenating an existing operation. Both of these groups of stakeholders are important because Tennessee has experienced an increase in the number of blackberry farms (up 58%) and the acres of blackberries in production (up 16%) between the 2007 to the 2017 USDA-NASS agriculture census reports. Increases in both the number of blackberry farms and acreage have also been seen in surrounding states (NC, GA, KY, VA, MS) over that time period. Interestingly, though, several states (TN, AR, KY, VA, MS) have seen a greater increase in farm number than acreage in that 10-year period (USDA-NASS). This suggests that information targeting small to mid-scale growers is increasingly needed because the average acreage in blackberry production per farm has decreased in the recent decade in many mid-south states. This project aims to serve these growers and the Extension personnel who engage with them by linking management and marketing techniques with farm business planning and budgeting.

### **Outreach Activity to Date:**

Objective 1. Establish demonstrations that will support new or existing blackberry producers in selecting cultivars that will best support their farm business characteristics and their operational goals.

Demonstration plots of blackberry cultivars were established on April 15<sup>th</sup>, 2021. Raised beds (3 ft wide) were installed and covered with woven weed mat. The entire planting area contained six ~200 ft long rows. The front section of the planting contained 40 plots consisting of 4 blocked replications of the 10 cultivar plots. The ten cultivars in the trial consist of seven floricanne bearing cultivars (Kiowa, Ouachita, Natchez, Ponca, Caddo, Von, and Osage) as well as three primocane bearing cultivars (Prime Ark Freedom, 45, and Traveler). The back section consisted of 15 plots. Each of the five trellis system demonstration systems were planted with three

representative cultivars (Ouachita, Ponca and Prime Ark Traveler). Each plot in both the cultivar and trellis trials consisted of 5 plants. All plantings except the RCA trellis system single replication demonstration planting were planted at 3 ft in row spacing while the RCA demonstration plots were planted at 5 ft in row spacing.



Figure 1. Blackberry demonstration site in Spring Hill, TN (MTREC) one day after planting in April 2021.

Objective 2. Evaluate numerous trellis systems for small and medium-scale blackberry producers in terms of establishment costs, managerial and labor requirements, plant productivity, fruit quality and crop marketability.



Figure 2. T-trellis installation in the blackberry cultivar trial in Spring Hill, TN (MTREC) in early summer 2021 during the first growing season.



Figure 3. Demonstration rotating cross arm trellis system and young Ponca blackberries in early summer 2021 in the first growing season.

Objective 3. Generate enterprise budgets to help small and medium-scale producers: 1) estimate costs of production for the various cultivars and training systems evaluated in the established demonstration sites; and 2) identify and evaluate marketing options that have the potential to minimize costs and maximize farm revenue (e.g., farmers market, pick-your-own).

Development of the enterprise budget is underway. This budget will be based on actual costs and expenses that were a part of the project establishment as well as management requirements such as labor and pest management. Once completed, the enterprise budget will be reviewed and then released as an Extension publication to support objective 4 below.

Objective 4. Develop Extension education and program materials to help agents assist small and medium-scale growers in making informed decisions about cultivar selection and trellis systems within the context of selecting, installing, managing, and marketing blackberries.

Educational and training materials are currently under development to support Extension personnel in assisting early-stage small fruit producers select blackberry cultivars and training systems. These training materials will focus on videos and resources that can be used by agents to address questions and assist current prospective growers. Additionally, tours and in-services will be conducted by the PI team to deliver these resources and support agents in best addressing small fruit questions in their counties or regions.

Extension publication on blackberry cultivar selection:

<https://extension.tennessee.edu/publications/Documents/W895B.pdf>

Additionally, an in-person Extension agent in-service was held on June 15<sup>th</sup>, 2021 at the MTREC site where trellis systems and cultivars as well as other aspects of blackberry management were discussed and tours of the planting were conducted.