UF IFAS Extension UNIVERSITY of FLORIDA

HS742

https://doi.org/10.32473/edis-ac031-2012

Florida's Commercial Blueberry Industry[1]

J. G. Williamson and D. A. Phillips[2]

Blueberry (*Vaccinium* spp.) is one of the few cultivated fruit crops that is native to North America. Canada and Maine have large expanses of native lowbush blueberries (*Vaccinium angustifolium* and *V. myrtilloides*) in naturally occurring barrens that are managed and harvested for the processing market. Cultivated blueberries in the United States consist of

- northern highbush blueberry (*V. corymbosum*), grown primarily in Michigan, New Jersey, Oregon, Washington, and North Carolina;
- rabbiteye blueberry (*V. virgatum*), grown throughout the southeastern United States; and
- southern highbush blueberry (interspecific hybrids of *V. virgatum*, *V. corymbosum*, and *V. darrowii*), grown primarily in Florida, Georgia, and southern California.

Florida Production Statistics

Florida has approximately 5,700 acres in planted blueberry acreage (USDA-NASS 2022). Total production for the 2022 season was 21.5 million pounds. Production for 2023 was significantly reduced, around 15.7 million pounds, primarily due to damage from Hurricane Ian in south Florida. The annual economic impact of Florida blueberry production in 2020 was approximately $295 million, and the industry created around 2,500 jobs per year (USHBC 2020).

Major Production Areas in Florida

Blueberries for commercial fresh fruit shipping are grown in three major areas of Florida. The central Florida production region includes Polk, Lake, Orange, Pasco, Hernando, and Hillsborough counties and accounts for approximately 50% of the total commercial blueberry acreage. The north central region includes Alachua, Levy, Marion, Putnam, and Sumter counties and accounts for about 25% of the blueberry acreage. The south central region includes Highlands, Hardee, Desoto, Manatee, and Sarasota counties and makes up approximately 25% of the total acreage. U-pick blueberry farms are scattered throughout the state, primarily near population centers.

Types and Cultivars of Blueberries Grown in Florida

Both rabbiteye and southern highbush blueberries (SHB) are cultivated in Florida, although SHB makes up most of the commercial plantings. During the early 1980s, many acres of early-season rabbiteye blueberries were planted in north central Florida for what was then considered the early-season market (May 20–June 20). During the last 30 years, SHB have replaced early-season rabbiteye cultivars for the commercial market for two reasons: 1) early-season rabbiteye cultivars did not yield well in peninsular Florida and 2) SHB ripen earlier than rabbiteye cultivars, during the period when market prices are highest (late February through mid-May). Currently, the vast majority of Florida's blueberries are shipped for the fresh market.

1. This document is HS742, one of a series of the Department of Horticultural Sciences, UF/IFAS Extension. Original publication date March 1997. Revised June 2015, August 2018, and August 2024. Visit the EDIS website at https://edis.ifas.ufl.edu for the currently supported version of this publication.

2. J. G. Williamson, professor; and D. A. Phillips, blueberry Extension coordinator, Department of Horticultural Sciences; UF/IFAS Extension, Gainesville, FL 32611.

Almost all of the blueberry cultivars in commercial production in Florida come from the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) blueberry breeding program. In the early years of the Florida blueberry industry, 'Sharpblue', 'Misty', and 'Gulf Coast' were the major SHB cultivars grown in Florida. During the early 2000s, the major SHB cultivars were 'Emerald', 'Star', and 'Jewel'. Other SHB cultivars, such as 'Windsor', 'Springhigh', 'Primadonna', and 'Snowchaser', were planted to a lesser extent. Then came cultivars including 'Farthing', 'Meadowlark', 'Kestrel', 'Arcadia', 'Avanti', and 'Chickadee' that would offer earlier harvests and, for some cultivars, the potential for machine harvesting for fresh markets. The newest SHB cultivars from the UF/IFAS breeding program are 'Falcon', '19-006', 'Albus', 'Sentinel', 'Optimus', 'Magnus', 'Patrecia', and 'Colossus'. For information on UF SHB cultivars, including the best regions for growing each, see EDIS publication #HS1245, "Southern Highbush Blueberry Cultivars from the University of Florida" (https://edis.ifas.ufl.edu/publication/HS1245), https://www.blueberrybreeding.com/varieties, and the UF/IFAS Blueberry Growers Guide app.

Identify Your Market

Florida blueberries can be grown for fresh fruit shipment, local or roadside markets, and U-pick. Decisions about marketing affect almost every aspect of a blueberry farm, including its size, location, and the cultivars grown. For example, most blueberries grown for fresh fruit shipment are early-season SHB cultivars that ripen before prices drop in mid-May. They are best adapted to the regions of peninsular Florida between Gainesville and LaBelle. Many U-pick farms also grow SHB cultivars.

Alternatively, many midseason rabbiteye cultivars are grown in northern Florida for the less volatile U-pick, roadside, or local markets; they can be somewhat easier to grow than SHB but ripen after wholesale market prices decline. Rabbiteye cultivars are generally well adapted from Ocala, north to the Georgia border, and west throughout the Florida Panhandle.

Site Selection

Site selection is one of the most important decisions determining the success or failure of a blueberry enterprise. A comprehensive treatment of this topic is beyond the scope of this publication. Factors to consider in selecting a location include marketing plans, zoning, water quality and availability, labor availability, climate, and soil characteristics. Sites suitable for blueberry culture can be found over a wide geographical area in Florida. The SHB cultivars that are grown in Florida can perform well throughout the state, with different cultivars best adapted to different regions.

North-central Florida farms use the traditional deciduous or dormant production system, while central Florida utilizes both the deciduous and evergreen (non-dormant) systems, often on the same farm. Production in south-central Florida requires use of the evergreen production system, in which the plants do not go dormant and instead retain their leaves through the fall, winter, and harvest months. For more information on the evergreen system see EDIS publication #HS1362, "Evergreen Production System for Southern Highbush Blueberries in Florida" (https://edis.ifas.ufl.edu/publication/HS1362).

Regardless of the region, it is important that the particular parcel of land, including soil and microclimate characteristics, be suitable for blueberries. Blueberries require acidic soils (pH 4.0–5.5) and higher soil organic matter content (2%–3%) than is common in Florida. Most Florida growers incorporate milled pine bark into their beds to achieve the required root zone conditions.

A system currently adopted by many growers on high, well-drained ground is to plant in pine bark beds on top of the well-drained soil. When properly done, plants have grown well. However, the cost of pine bark is high, and irrigation and fertilization must be modified to suit the bark medium. A modification of this system consists of incorporating pine bark into the top layer of soil and creating raised beds from the soil bark mixture. The bed is sometimes covered with nursery ground cloth or weed mat with drip lines (one or two per row) located beneath it.

Late winter and early spring freezes can be a major production problem with early-ripening blueberries if adequate freeze protection systems are not in place. Different parcels of land, even within the same area, vary greatly in temperature during radiation freezes. Sites that are higher than the surrounding land are usually warmer than lower sites during these freezes. Unfortunately, soils naturally higher in organic matter are usually located in low areas that are prone to late spring freezes and are appropriately termed frost pockets. These areas should not be used for blueberry production unless provisions are made for freeze protection. More information on blueberry freeze protection is available in EDIS publication #HS968, "Protecting Blueberries from Freezes in Florida" (https://edis.ifas.ufl.edu/hs216).

Is commercial blueberry production profitable in Florida?

The profitability of blueberry production in Florida for the fresh fruit shipping market is difficult to predict because of

- significantly increasing production costs across the industry, including harvest labor costs;
- uncertain availability of sufficient hand labor to harvest the crop;
- uncertainty about future market prices, due in large part to imported fruit; and
- uncertain risks from weather, pests, diseases, and other forces of nature inherent to any agricultural enterprise.

Establishment of a SHB blueberry planting in Florida can be expensive, depending on plant density, amount of site preparation required, and the irrigation system. Drip irrigation is primarily used, although overhead sprinklers will be needed for freeze protection. In addition, annual production costs have risen significantly, including harvest labor and inputs such as fertilizer, pesticides, and diesel fuel. Harvesting and packing costs are currently estimated at $2.10–$2.30 per pound.

Despite the high cost of production, growing early-ripening blueberries for the fresh fruit market has historically been profitable in Florida. The major incentive for growing blueberries in Florida is the strong market for fresh blueberries that ripen no later than late April to early May. Historically, SHB from peninsular Florida are the first blueberries to ripen in North America. However, in recent years significant blueberry production has occurred in Mexico during March, April, and May, and imports into the United States during this period have increased, posing a significant threat to the Florida blueberry industry. Beginning in May, Georgia and North Carolina blueberry harvests begin, and prices typically decline to the point where commercial production under Florida conditions is not profitable. Berries shipped from Florida once averaged close to $5 per pound for the season. However, more recently the seasonal averages for berry prices from Florida have declined significantly, to around $3.40 per pound.

Trends for the Future

Mechanical Harvesting

In order to remain profitable and competitive with imported blueberries, many growers have begun (or are considering) to adopt mechanical harvesting, which has the potential to significantly reduce harvest costs. It is best suited for larger farms, where the high cost of the equipment can be spread over higher fruit volumes. One possible disadvantage is the potential for fruit bruising on some cultivars that are not firm enough to withstand the drop from the bush to the harvester's catch plates. Additional information is available in EDIS publication #HS1481, "Preparing a Southern Highbush Blueberry Field for Machine Harvesting" (https://edis.ifas.ufl.edu/publication/HS1481).

Cultivar Selection

The UF/IFAS blueberry breeding program is continuing to focus on developing new cultivars with high yields, excellent fruit flavor and firmness, earlier fruit maturity, and favorable characteristics for mechanical harvesting, to assist Florida growers in operating profitably and in competing with imported fruit.

Container and Soilless Substrate Production

The need to create optimum conditions for the roots of blueberry bushes has recently led to blueberry cultivation in containers filled with soilless substrates (Figure 1). Soilless substrates are composed of fibrous and coarse components that create a balance between water retention and drainage. Blueberry plants have vigorous and precocious growth in soilless substrates, and commercial level yields have been observed in the first year after planting. For more information see EDIS publication #HS1476, "Introduction to Southern Highbush Blueberry Cultivation in Containers" (https://edis.ifas.ufl.edu/publication/HS1476).

Figure 1. Blueberry production in containers.
Credits: D. A. Phillips, UF/IFAS

High Tunnels

Some growers (primarily in north Florida) are planting blueberries under polyethylene tunnels. The potential advantages include reduced water use during freeze protection, greater total yields, and earlier fruit ripening in the spring, compared to field production for certain early cultivars in north Florida. Disadvantages of this system include the additional cost of tunnels, inexperience with the performance of individual cultivars under tunnels, and protracted harvest seasons that begin before and extend after the prime market window for Florida.

Conclusion

The Florida blueberry industry has grown rapidly because Florida growers can produce high-quality fruit when fewer fresh berries are available and berry prices are higher. However, high prices encourage competition, and SHB acreage has expanded significantly in Mexico and Georgia during the last several years. The best long-term strategies for Florida growers are to pursue higher yields per acre using newer cultivars and best management practices, to lower production costs (especially for harvest labor), and to develop currently underexploited markets for blueberries. Since the late 1990s, improved SHB cultivars have been released by the UF/IFAS blueberry breeding program. These cultivars represent significant improvements in terms of earliness, berry size and quality, flavor, and yield. Better cultivars and improved cultural practices have increased grower production efficiency during the last several years.

References

U.S. Highbush Blueberry Council (USHBC). 2020. *The Economic Impact of Blueberry Growers in the State of Florida*.https://blueberry.org/ushbc/wp-content/uploads/sites/5/2020/12/FINAL-Florida-USHBC-EIR-Full-Study-7-30-20.pdf

USDA-NASS. 2022. *Noncitrus Fruit and Nuts, 2021 Summary*. https://www.nass.usda.gov/Publications/Todays_Reports/reports/ncit0522.pdf