

## Alternative Opportunities for Small Farms: Blueberry Production Review <sup>1</sup>

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J. G. Williamson, P. M. Lyrene, T. D. Hewitt and K. C. Ruppert<sup>2</sup>

Commercial blueberry production has nearly tripled in Florida since 2000. As a result, Florida has become a major producer of early-season blueberries. In recent years, Florida typically ranks third or fourth nationally in value for commercial blueberry production -- behind Michigan and New Jersey and sometimes behind Georgia.

In Florida blueberries can be grown commercially as far south as Highlands and De Soto counties and north to the Georgia border. U-pick blueberry farms are scattered throughout north, north-central and northwest Florida, primarily near population centers, such as Ocala, Gainesville, Tallahassee and Pensacola.

Blueberries for fresh-fruit shipping are grown in three major areas in Florida. The north-central area includes Alachua, Marion, and Putnam counties and accounts for approximately 40 percent of Florida's commercial shipping blueberry acreage. The south-central production area includes Highlands, Hardee and Desoto counties and consists of approximately 20 percent of the total acreage. The newest production area is in central Florida, which

includes Polk, Orange, Lake and Hillsborough counties. This region accounts for about 35 percent of the total blueberry acreage in Florida.

Advantages of blueberries include their high market value for early-season fruit, wide consumer acceptance and health benefits, and the availability of commercial and/or pick-your-own (u-pick) marketing channels. The primary disadvantages include freeze hazard to early-flowering cultivars, exacting cultural requirements to maintain good plant health, insects, pests, diseases, and birds and the fact that blueberries are a perishable commodity.

### Marketing Situation

The profitability of blueberry plantations in Florida depends on site selection, cultivar selection, cultural procedures and method of marketing. Well planned and well managed blueberry farms can be quite profitable in Florida. Organized marketing channels are available, and quality control exists through blueberry cooperatives. Most Florida blueberries are packed and shipped commercially, but there are also many local-sale and u-pick operations.

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  2. J.G. Williamson, professor, Horticultural Sciences Department; P.M. Lyrene, professor, Horticultural Sciences Department; T.D. Hewitt, professor, North Florida Research and Education Center--Marianna, Fla; and K.C. Ruppert, assistant extension scientist, Agricultural and Biological Engineering Department; Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

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Florida's early-season southern highbush cultivars are the first blueberries to ripen in North America. Most Florida blueberries grown for commercial shipping are harvested between early April and late May. During the last decade, fresh berries shipped from Florida before May 20 averaged close to \$5 per pound. After May 20, when large volumes of fresh berries enter the market from eastern North Carolina and from California, the average price drops dramatically. After June 1, fresh blueberries packed in 1-pint containers and shipped to national markets only return to the grower about \$1.50 - \$2.00 per pound or less.

The amount of additional blueberries that can be sold on the national market without forcing the price down is unknown, but Florida has the potential to produce larger quantities of blueberries early in the year, when prices are highest. Shipment of southern highbush blueberries from Florida begins during early April. Producers in southeast Georgia can harvest southern highbush blueberries in mid-to-late April. Shipment of large quantities of blueberries from California begins in mid May and from other eastern states in late May. At present, the market window from April 1 to May 10 is available almost exclusively to Florida and south Georgia growers who grow southern highbush blueberries. A major incentive for developing blueberry plantings in central and south-central Florida has been the ability to put blueberries on the market during late March and early April.

### **Labor and Capital**

Rabbiteye blueberry cultivars can be harvested by hand or mechanical methods, but all Southern highbush cultivars are still hand harvested. Modern blueberry packinghouses are highly automated and may contain color sorters, soft-berry sorters, an inspection belt along which workers remove defective berries that have not been removed mechanically, and automatic clamshell fillers.

The cost of planting an acre of blueberries in Florida varies widely, ranging from a little more than \$4,400 per acre (for late-ripening rabbiteye plantings when minimal land preparation is needed) to as high as \$15,000 - \$22,000 per acre for early-ripening

southern highbush plantings with pinebark mulch, overhead irrigation for freeze protection and bird netting.

### **Planting and Establishment**

Blueberry site selection criteria have changed in Florida during the last decade. With the advent of earlier-ripening, but also earlier-flowering cultivars, damage from late-winter and-early spring freezes has been severe. Many new plantings have been established on high (warm) sites along the central Florida ridge, as opposed to the more traditional, low-lying sites that are often high in soil organic matter, but are also subject to spring frosts and poor drainage. These upland soils are predominately sand and usually require the addition of large quantities of organic matter and sometimes adjustment of soil pH. Many such sites were previously planted with citrus and are located in Lake, Polk, and Highlands counties along Florida's central ridge.

Growers who plant on well drained, sandy soils of the ridge and irrigate from the Florida aquifer must cope with problems associated with high bicarbonates in the irrigation water. On well drained sandy soil, blueberries require frequent irrigation. Most water pumped from deep wells in Florida contains high levels of dissolved calcium and magnesium carbonates. Typical values are five to seven milliequivalents/liter bicarbonates. Applying 20 acre-inches of water with seven milli-equivalents/liter bicarbonates is similar to adding 1600 pounds of pure calcium carbonate per acre. On sands, such an addition is almost sure to cause a rapid rise in soil pH. The use of double-line drip irrigation with acid injection to lower the pH of the water is a solution to this problem.

### **Future Trends**

A popular system on high, well drained, sandy ground is the pine-bark bed production system, which involves planting in pine-bark beds that are created by spreading a layer of ground pine bark five to six inches deep. When the roots are planted into the bark, the plants grow rapidly. However, the cost of bark is high, and irrigation and fertilization practices must be adjusted to suit the pinebark medium. A newer alternative is to incorporate several inches of

pinebark into the topsoil with additional pine bark or nursery ground cloth applied over the top as mulch. If drainage is marginal, raised beds are used.

The high per-acre costs of establishment due to preplant soil preparation, overhead irrigation, and sometimes bird netting has stimulated interest in high-density plantings. Optimum plant designs are still being investigated, and the feasibility of high-density blueberry production is being evaluated by Florida growers and University of Florida researchers. Currently, planting densities of southern highbush blueberries range from 1,500 - 2,000 plants per acre.