

# The basics of commercial

# BLUEBERRY production in Florida



*Star (above), Emerald (right) and Jewel represent the majority of new blueberry cultivar acreage in the state of Florida.*

**By Jeff Williamson**  
Florida's commercial blueberry industry is based on early-ripening southern highbush cultivars specifi-

cally bred by the University of Florida for Florida's mild winter climate. The early-season market window targeted by Florida growers corresponds with

the period from late March or early April through mid-May. During this period, supply is low and berry prices have historically been high.

This early market window has attracted a lot of attention, and acreage has expanded rapidly during the past few years. The latest information from the United



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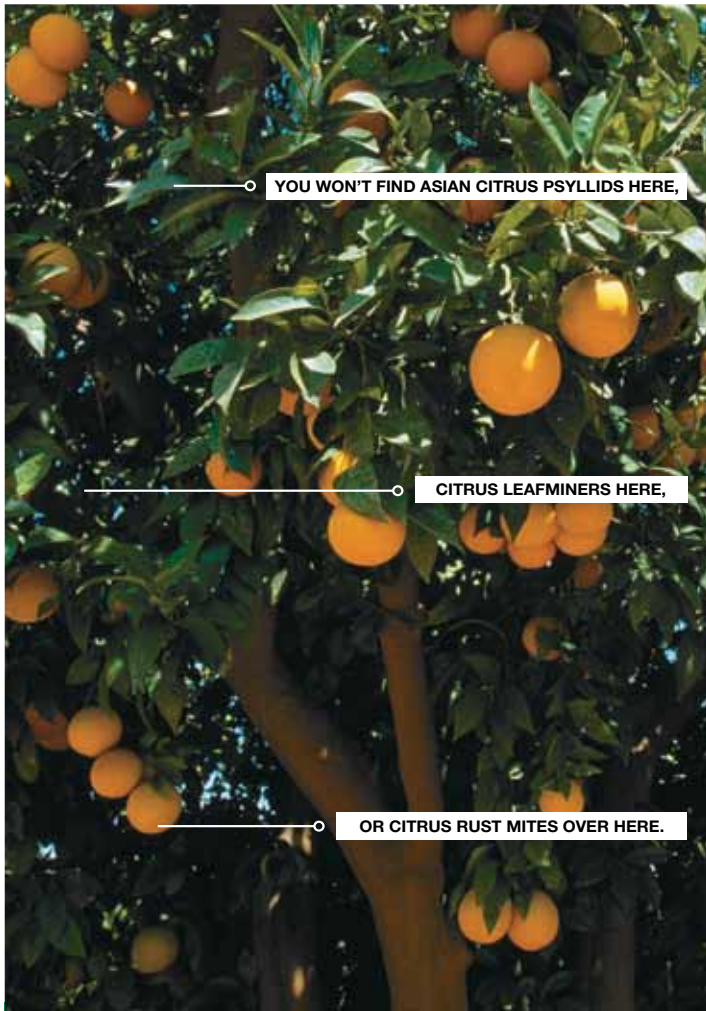
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States Department of Agriculture's National Agricultural Statistics Service (USDA-NASS) indicates that harvested acreage in Florida increased by about 14 percent between 2008 and 2010. This increase in acreage, combined with higher per acre yields (due to maturation of young plantings and improved culture and management), has resulted in a 67 percent increase in production during this same two-year period.

It's worth noting that between 2000 and 2008, prices for Florida blueberries were very high, averaging approximately \$5/lb. However, USDA-NASS estimates of Florida blueberry prices in 2009 and 2010 were \$3.80/lb. and \$2.90/lb., respectively. This is significantly lower than historical averages. What the berry price will be for the near future remains an elusive question, but many experienced growers believe that the days of \$5/lb. blueberries are a thing of the past.

Although potentially profitable, growing blueberries in Florida is not for the faint of heart. Establishment costs are high and can range from \$20,000 to \$25,000 per acre, not including land costs. Apart from land costs, major start-up costs include pine bark, wells, pumps and solid set overhead irrigation systems capable of providing freeze protection, and the plants themselves. In some situations, land clearing and leveling, bedding and dealing with soil drainage can be significant costs. That being said, growing blueberries in Florida has been a profitable enterprise for many growers.

**FREEZE IS A MAJOR ISSUE**

Historically, one of the greatest challenges to growing early-season blueberries in Florida is escaping late winter and early spring freezes unscathed. Depending on year, location and cultivar, southern highbush blueberries typically bloom in early- to mid-February, or earlier in the southern regions. There will usually be several killing freezes during, or after, bloom each year. Although newer water-saving methods such as high tunnels and wind machines are being evaluated, overhead irrigation has been, and continues to be, the major freeze-protection method employed by growers. Without some type of reliable freeze protection, consistent production from year to year would not be possible in Florida's climate.

## CULTIVARS

One of the most significant advances in Florida blueberry production has been the introduction and use of improved cultivars. The first southern highbush plantings during the 1980s and early 1990s consisted primarily of three cultivars – Sharpblue, Misty and GulfCoast. Each had major deficiencies and limitations for commercial production.

During the mid- to late-1990s and early 2000s, UF blueberry breeder Paul Lyrene released a number of cultivars with major improvements over what was being grown at the time. While many of these newer cultivars are grown to varying degrees in Florida, Star, Emerald and Jewel represent the majority of acreage in the state.

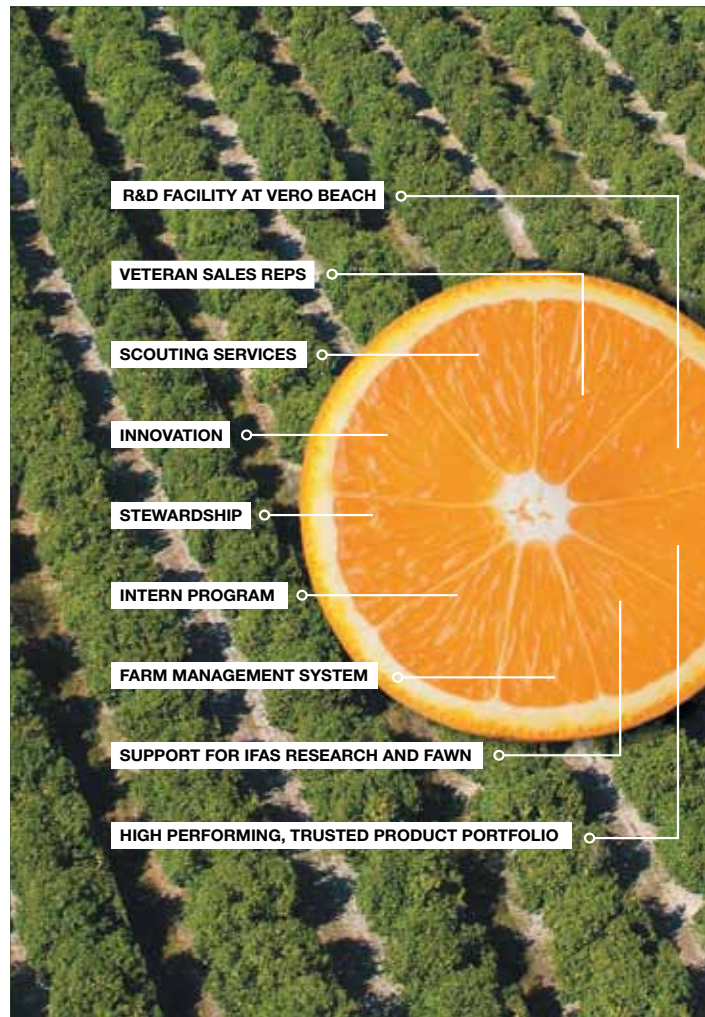
Certain cultivars are best adapted to specific regions of the state based on their chill requirements and other characteristics. Cultivar selection is a critically important decision that should be thoroughly researched. Virtually all of the southern highbush cultivars grown commercially in Florida are patented, and licenses are required by the Florida Foundation Seed Producers for their legal propagation. The cultivar mix in Florida will continue to evolve as new and improved cultivars continue to be released from the UF breeding program.

## SOILS

Most Florida soils are not ideally suited for blueberry production. Blueberry plants thrive in acidic, well-drained soils with high organic matter content. Raised beds and ditches between rows are often used to improve drainage where needed, and pine bark is the industry standard for increasing the soil organic matter content of Florida's sandy soils.

A system that became popular in the 1990s and is still in use today is the pine bark culture system. Pine bark is applied to the top of the native soil to create beds about 6 inches deep and about 3 feet wide in the row. The plants are planted in the pine bark layer rather than in the soil. Blueberry plants grow well in this system provided they have sufficient water and fertilizer. However, the roots are restricted to the pine bark layer, and efficient irrigation and fertilization management, particularly with low-volume irrigation and fertigation, is difficult to achieve.

A modification of this system



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known as pine bark incorporation consists of mixing pine bark with the native soil in strips or raised beds down the row. Some newer plantings use nursery fabric to cover the beds with single- or double-line drip irrigation underneath. In this case, less pine bark seems necessary and more precise fertilization and soil pH control are possible. Early indications are that these systems produce strong, vigorous plants and are more compatible with drip irrigation than pine bark beds, but the long-term performance of these newer systems is not known.

### PESTS AND DISEASES

There are a number of potentially serious pests and diseases, most of which can be managed with varying levels of success. Blueberry stem blight (*Botryosphaeria* spp.) probably kills more blueberry plants in Florida than any other pest or disease. Clean nursery plants, good field sanitation and good horticultural practices to minimize plant stress are the best control methods. Stem blight is often associated with plant stresses such as drought, flooding and over fruiting or poor leafing. Proper site selection and preparation, and attention to cultural practices such as irrigation, fertilization and pruning, can help minimize the severity of this disease.

*Phytophthora* root rot can also weaken or kill plants in fields with marginal drainage. *Phytophthora* may work in combination with stem blight by weakening root systems and predisposing plants to periods of drought stress. A relatively new disease for blueberry in Florida is bacterial leaf scorch caused by *Xylella fastidiosa*. While serious outbreaks have occurred in localized areas, its widespread economic significance in Florida is not yet known.

Several fungal leaf spot diseases can result in premature fall defoliation, which reduces the number of flower buds formed in the fall and weakens plants. These diseases can usually be controlled with a combination of summer pruning, fungicide sprays and adequate summer fertilization and irrigation.

As with diseases, numerous insect pests can cause economic damage to blueberries in Florida. Two of the more prevalent pests are thrips and blueberry gall midge. Thrips can cause serious damage to blueberry flowers and young fruit if not controlled. Blueberry

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## BLUEBERRIES, from 10

gall midge is a serious pest of flower buds in rabbiteye blueberries, but more often attacks and damages vegetative growing points in southern highbush blueberry. Control of both thrips and blueberry gall midge requires careful scouting and monitoring. A relatively new pest in Florida whose economic importance in blueberry is yet to be determined is the spotted wing drosophila. See <http://edis.ifas.ufl.edu> for more information on blueberry pests and diseases.

### SUMMARY

In summary, the past decade has been a period of rapid expansion of blueberry production in Florida. The attraction to growers has been the high fruit prices achieved during the early market window. Improved cultivars and cultural practices have facilitated industry growth to the present level. During 2009 and 2010, berry prices in Florida were significantly lower than the last 10-year average, but were still higher than other production areas in the United States.

It appears that for efficient growers with sufficient volume, blueberry production in Florida will remain profitable, but as production continues to increase in Florida, profit margins may be less than what growers have seen in the past. Those interested in commercial blueberry production in Florida should seek as much information as possible. Two useful sites are the University of Florida IFAS site (<http://edis.ifas.ufl.edu>) and the Florida Blueberry Growers' Association site ([www.floridablueberrygrowers.com](http://www.floridablueberrygrowers.com)).

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