

Hydroponics and Controlled Systems for Small Farms

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Florida is well-known as a leading state for field production of vegetables, but you may be surprised to learn it's also a leading producer of greenhouse-grown fruits, vegetables, herbs and specialty crops.

Florida greenhouse crop production has grown from about 30 acres in the 1970s to almost 100 acres today, valued at about \$15 million in annual sales.

There are several reasons for the success of this industry:

- Our subtropical climate allows production in the winter, with low heat inputs. Much of the year here consists of sunny days, with longer periods of daylight than in northern states.
- Florida producers have ready access to markets in many major metropolitan areas in the Southeast and in Florida itself.
- Our state has readily available high-quality water and a good equipment and supply industry.

Operations range from small single greenhouse units to multi-bay operations 5 acres or more in size. Primary crops include colored bell peppers, herbs, tomatoes, European cucumbers and lettuce. Other specialty crops produced include strawberries, baby squash, eggplants, specialty greens, edible flowers and cut flowers.

The primary production systems used commercially include layflat bag culture or upright containers filled with soilless media such as perlite, composted pine bark, rock wool, peat mixes or coconut coir. Nutrient film technique, which uses nutrient solution flowing down small channels, is also popular for lettuce and certain herbs including basil. An especially popular option for small farmers is the floating system which uses a sheet of Styrofoam to float the plants on a pool of nutrient solution. This simple system requires no pumps or electricity. Many producers with limited greenhouse space or who want to grow outdoors can take advantage of vertical stacking systems utilizing a variety of soilless media.

The University of Florida's Institute of Food and Agricultural Sciences has provided continuous support for this industry through its research and extension greenhouse facilities in Live Oak and Citra.

Besides the nearly 100 acres of greenhouse crops, Florida has a large amount of hydroponic production outdoors, under open shade structures or in walk-in plastic tunnels using the same systems. Florida's mild climate makes outdoor production an excellent way to get started without the major investment of a greenhouse. Continuing demand for locally grown crops for direct-to-consumer sales has dramatically increased the number of small farmers getting into production outdoors, using vertical, floating or soilless container systems. Learn more about hydroponics through a new Web-based series of videos and learning modules at <http://virtualfieldday.ifas.ufl.edu>.

An intensive two-day workshop and one-day tour for new hydroponic farmers will be offered at the North Florida Research and Education – Suwannee Valley in Live Oak on March 16-18, 2009. You can learn more about it at the Florida Small Farms and Alternative Enterprises Web site at <http://smallfarms.ifas.ufl.edu>.

On Aug. 1-2, 2009, the first Florida Small Farms and Alternative Enterprises Conference will be held at Osceola Heritage Park in Kissimmee. The event will feature exhibitors, educational sessions and more. All Florida farmers are invited to attend. Visit the conference Web site at <http://smallfarms.ifas.ufl.edu>. For information on conference sponsorship or being an exhibitor, contact Bob Hochmuth, 386-362-1725 or bobhoch@ufl.edu.



Photo 1: Florida is a leading producer of greenhouse-grown crops, including fruits, vegetables, herbs and specialty crops. A variety of crops and growing systems are shown in this greenhouse, used for studies at the University of Florida's North Florida Research and Education Center – Suwannee Valley in Live Oak. Photo by Wanda Laughlin



Photo 2: Vertical production systems, such as the ones seen here, can be a boon to greenhouse growers because they use little floor space. This photo shows edible flowers, a specialty crop studied at the University of Florida's North Florida Research and Education Center – Suwannee Valley in Live Oak. Photo by Bob Hochmuth