

Dooryard Citrus Production: the Value of the Florida Citrus Industry to Florida Residents ¹

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Florida is one of the leading states in the country for agricultural production. In 2005, there were 42,500 commercial farms in Florida, supplying over 280 different commodities. These commodities are exported to every state in the country and to over 140 foreign countries. Collectively, Florida's agriculture, food and natural resource industries have an overall economic impact of \$87.6 billion annually, and create 769,224 jobs. But the value of these industries is more than economic. Florida agriculture adds to the quality of life for all Floridians. These industries help to preserve Florida's ever shrinking green spaces, and ensure a safe, nutritious, and abundant food supply.

Citrus fruit, such as oranges, grapefruits and tangerines, are one of Florida's largest agricultural commodities. In 2005-06, Florida accounted for 68% of the total U.S. citrus production, California produced 28%, and Texas and Arizona accounted for the remaining 4%. There are currently over 621,000 acres of citrus groves (bearing and non-bearing) in Florida, making it the second largest citrus producer in the world after Brazil. Florida citrus is consumed fresh or is used in processing of juice products, and is shipped both domestically and internationally.

Production

In 2005-06, Florida produced 174.8 million boxes of citrus fruit, or almost 8 million tons. Of this, 147.9 million boxes (6.6 million tons) were oranges of all varieties. The majority of Florida's orange production is for the juice processing industry (96% in 2005-06), but 3.8 million boxes (171,000 tons) of navel oranges were produced for the fresh market. Florida also produced 5.5 million boxes (261,250 tons) of tangerines in 2005-06, more than 50% of the U.S. tangerine production. Florida also leads the nation in grapefruit production, producing 19.3 million boxes (820,250 tons); two-thirds of the U.S. production.

Total citrus fruit production came from approximately 621,373 acres of citrus groves in 2005-06. This acreage is divided among 30 counties of the Florida peninsula (Fig. 1). Of these counties, Polk had the highest total citrus production with 32.5 million boxes, and was the leading producer of oranges (27.7 million boxes). St. Lucie and Indian River Counties produced 57% of the state's grapefruit crop, with 5.7 and 5.3 million boxes, respectively. The majority of the specialty fruit (tangerines,

1. This document is HS1129, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date February, 2008. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

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tangelos and temples) were produced in the central Florida ridge counties of Polk, Lake and Highlands.

Economic Value

The 2005-06 Florida citrus crop had an on-tree value of \$1.04 billion. The largest component of this was oranges with a value of over \$800 million. Grapefruit accounted for about \$174 million, of which about two-thirds was for colored grapefruit and one-third for white grapefruit. The remainder was the combined value of specialty fruits such as tangerines and temple oranges.

While these values are large, they are only part of the story. The economic impact of the citrus industry to Florida's economy goes far beyond the value of the fruit. For the crop year 2003-04 (the most recent year for which data have been extensively analyzed) the total production value of the citrus crop was \$1.78 billion, but once that fruit was processed into juice its value increased to more than \$3 billion. By-products produced from the juice industry produced an additional value of \$136 million. These by-products include such things as citrus pulp and meal, molasses and D-Limonene, an important oil extracted from citrus peel and seeds used in cleaners, flavorings and fragrances.

When all of the economic impacts of the Florida citrus industry are calculated, the 2003-04 crop had a total economic impact of \$9.29 billion for the state of Florida. This figure includes the value of the impact that the Florida citrus industry has on all of the other industries in the state, such as utilities, finance and insurance, and transportation and warehousing, as well as tax revenues (primarily sales taxes and property taxes). In some rural counties, property taxes on grove land can account for over 20% of the tax base. Another important factor that is included in the total economic impact for the citrus industry is the jobs it creates. The Florida citrus industry has an employment impact of over 76,000 jobs, fully 10% of all the agriculture related jobs in the state.

The Health of the Citrus Industry

Clearly, the citrus industry is an extremely important part of the Florida economy, and thus is important to all Floridians beyond just providing tasty

fruit and juices. Unfortunately, many factors, some controllable and some not, affect the health of the Florida citrus industry.

Over the last decade the number of acres of citrus in Florida has declined each and every year. In 1997, there were 815,000 acres of bearing citrus trees in Florida, producing over 13 million tons of fruit. In January 2006, the number of bearing acres had dropped to 576,000 with a total production of just 7.8 million tons. This is a decline of 239,000 acres, almost 30% of the commercial grove acreage. Some of this decline was due to factors beyond our control, for example hurricanes. However, a significant portion was within our control, for example converting groves into housing developments. Whatever the source of the loss of acreage, the economic impacts are in the billions of dollars.

Florida's rapidly increasing population needs more land to live on. Between 1970 and 1990 Florida's urban areas grew by 1 million acres, consuming formerly rural land of natural habitats, farmland and scenic open spaces. As urban areas expand it becomes more difficult to grow citrus where it has been historically. When residential areas encroach on agricultural land it becomes difficult for farmers to control pests and diseases to prevent crop loss and provide high quality products to the consumer. Residential areas also consume a vital resource to all farming – water. In 2000, Florida's agriculture consumed 3.9 billion gallons of water per day for 4,618,351 acres of farm land, or 849 gals/acre. In the same year, Florida's 15,982,378 residents consumed 2.8 billion gallons of water per day for domestic and recreational use (golf courses, parks, etc.), or 178 gals/person. Fewer than five people consume as much water as an acre of farm land each day, but one acre of Florida's farm land can feed far more than five people – urban land use consumes more water than agriculture in terms of the people it supports.

Some of the other losses attributable to people and under our control relate to pests and diseases. Citrus canker is a severe disease of citrus that was likely introduced into Florida by human movement of infected plant material (see publication, Dooryard Citrus Production: Citrus Canker Disease). In an

effort to eradicate this disease from Florida, 87,000 acres of commercial citrus groves were removed. This accounts for 36% of the acreage that was lost over the last decade. Much of the remaining losses were due in large part to residential and commercial real estate development. Today a new disease, citrus greening (see publication, Dooryard Citrus Production: Citrus Greening Disease) threatens to cause acreage losses far greater than those from citrus canker. And like canker, this disease was introduced to Florida by human movement of infected plant material.

While the acreage losses have been significant over the last decade, the citrus industry has worked hard to keep yields high, but Mother Nature has had other plans. The majority of the decrease in fruit production between 1997 and 2006 has actually occurred since 2004. These losses in production were due to Hurricanes Charlie, Francis and Jeanne in 2004, and Wilma in 2005. In August 2004, Hurricane Charlie crossed three of the top five citrus-producing counties in the state, causing fruit drop and limb breakage. A month later, in September 2004, Hurricanes Francis and Jeanne followed virtually identical paths across Florida only 20 days apart, causing very heavy fruit drop and limb breakage. Hurricane Jeanne was so large that it affected all but three (Hendry, Collier and Lee) of Florida's 30 citrus-producing counties. In October 2005, as the harvesting season was getting underway, Hurricane Wilma crossed the southern portion of the citrus-producing area of the state, hitting those counties that had been spared by Jeanne and affecting many others for the second season in a row. Florida's citrus crop yields have still not fully recovered from the affects of these three powerful storms.

Value Beyond Economics

There is no doubt that the Florida citrus industry and agriculture in general are vital to the economic and environmental health of the state. It is fairly easy to place a dollar value on the direct economic impacts of agricultural production to the state. However, Florida citrus and agriculture provide far more than economic value to Florida's citizens. Florida citrus growers are good land stewards. They understand the need to carefully balance the requirements of citrus

growing with the needs of the environment. This understanding begins with grove design, utilizing new technologies for irrigation and fertilization, and adopting University of Florida developed Best Management Practices to minimize environmental impacts.

Citrus groves provide land area for rainwater to seep into the ground to replenish the aquifer. Modern grove designs protect natural wetlands and create large on-site water retention areas to capture excess storm-water runoff. These areas provide excellent wildlife habitat and help to preserve Florida's green spaces.

Florida's citrus groves also help to keep Florida's air clean. Through the process of photosynthesis, all plants take in carbon dioxide and release oxygen back to the air. Every acre of mature citrus trees takes in about 23 tons of carbon dioxide and releases nearly 17 tons of oxygen. Multiply those figures by the 621,000 acres of citrus in the state and you can see that Florida's citrus groves have a tremendous impact on the air quality in Florida. It is more difficult to place a dollar value on things such as wildlife habitat, attenuation of storm-water runoff, protection of domestic water supplies, clean air, and a safe, reliable domestic food supply. Florida citrus, as a major component of Florida's agriculture industry, provides all of these benefits to Florida's citizens.

As Florida's population increases so does the amount of traffic across its borders, both domestically and internationally. Florida's climate which is so ideal for many people and many different agricultural crops is also ideal for many different plant pests and diseases. As mentioned above, two very destructive and costly diseases of citrus have been introduced to Florida through human activity. While it is unlikely that these introductions were intentional, they do indicate the importance of making sure that everyone is aware of the risks posed by moving plant material into our state.

Florida citrus, the hallmark of Florida agriculture, adds more than \$9 billion to Florida's economy each year. Every person living in Florida, regardless of their occupation, is a stakeholder in Florida citrus and Florida agriculture. The true value of Florida citrus can't be measured in dollars. The

value of the Florida citrus industry lies in the value that Florida's citizens place on wildlife habitat, green space, clean air, clean water and a safe domestic food supply.

Additional Information

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