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## **Economic Impact of Florida's Field Crop Industries<sup>1</sup>**

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### **Introduction**

Field crops produced in Florida include sugarcane, corn, cotton and cottonseed, hay, peanuts, potatoes, soybeans, tobacco, and wheat. In addition to their raw consumption, field crops are processed into a variety of products including flour, cereals, oil, confectionary, and canned products. The field crop sector is part of a complex and integrated network of natural resource enterprises associated with the production, transportation, and processing of field crop products. As these products progress through different market channels, value is added from labor, capital, and management which significantly impacts the economy. Rapid urbanization in Florida has left consumers and political leaders with a limited understanding of Florida's field crop industries and the issues surrounding their management. This document is intended to facilitate a better understanding of Florida's field crop sector by reviewing its historical economic trends and evaluating the economic impacts associated with this industry. Since Florida represents a major national producer of sugarcane and raw sugar, sugar statistics are treated separately from other field crop categories.

Industries impact an economy in three primary ways. First, as direct effects, industries generate output and value-added products and provide employment and wages to employees. Second, as indirect effects, the purchase of goods and services as inputs from other industries supports additional economic activity in these industries. Third, as induced effects, earnings by direct and indirect industry employees boost the local economy through their personal consumption expenditures. The total economic impact is the sum of the direct, indirect, and induced effects. Since exported goods introduce new money to the region (defined in this report as the State of Florida), commodity sales outside the region are associated with greater economic impacts than sales to regional customers. Also, inputs obtained from regional firms rather than imported from outside the region are associated with greater economic impacts because money is retained and circulated within the region.

### **Methodology**

Economic impacts of the field crop industries in Florida were estimated with economic multipliers developed using the *IMPLAN PRO*<sup>TM</sup> (*IMPLAN*)

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software and associated databases for Florida (MIG, Inc., Stillwater, MN). The *IMPLAN* system enables construction of regional input-output models for any county, group of counties, or state(s) in the United States based on a combination of county level and national economic data. Industries are classified as 528 sectors corresponding to the United States Department of Commerce's Standard Industrial Classification (SIC) System. Multipliers are available from *IMPLAN* for the economic indicators of output, value added, employment, employee compensation, labor income, other proprietary income, and indirect business taxes. Furthermore multipliers are provided for direct, indirect, and induced effects. Multipliers for employment, output, value added, and labor income are computed in this document to estimate the economic impacts of Florida's field crop industries. Multipliers for output, value-added, and labor income represent dollars-per-dollar of sales to final demand, and the employment multiplier represents jobs-per-million-dollars of sales to final demand.

Total economic impacts were computed by applying the economic multipliers as follows:

Total impact =

$$Y * M_{D(\text{Output, VA, Emp, Labor Income})} \\ + E * M_{I(\text{Output, VA, Emp, Labor Income})} \\ + E * M_{IN(\text{Output, VA, Emp, Labor Income})}$$

where

E is export demand sales (all sales outside Florida)

Y is value of output

$M_{D(\text{Output, VA, Emp, Labor Income})}$

is the direct effects multiplier for employment, output, value added, and labor income

$M_{I(\text{Output, VA, Emp, Labor Income})}$

is the indirect effects multiplier for employment, output, value added, and labor income

$M_{IN(\text{Output, VA, Emp, Labor Income})}$

is the induced effects multiplier for employment, output, value added, and labor income.

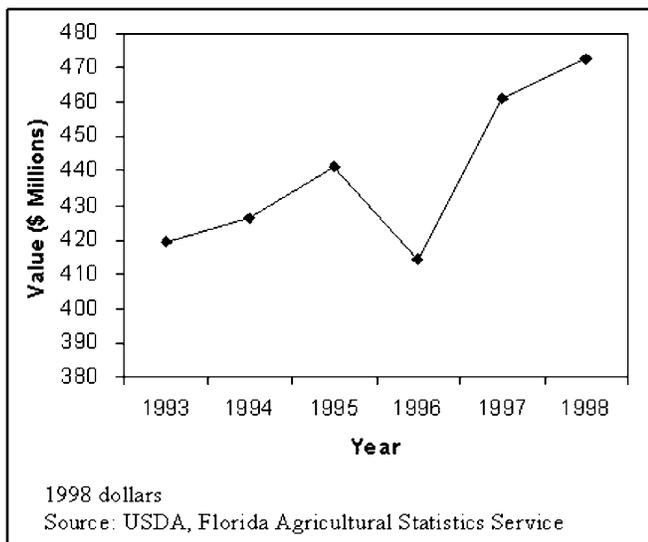
The base information on output and exports for each industry and the multipliers were provided by the *IMPLAN* system for 1998 (most recent available).

In addition to supplying information on the economic impacts on Florida, this document also reviews historical economic information on production acreage, number of farms, employment, production value, and processing value of these industries. Statistics were obtained from the US Department of Agriculture, Census of Agriculture, and Florida Agricultural Statistics Service. [Any data discrepancies between the *IMPLAN* database and other secondary data sources featured in this document are primarily due to differences in industry classifications and accounting measures.]

### **Sugarcane**

Florida is a major producer of sugarcane and raw sugar. Production is located in South Florida and centered in Palm Beach County where sugarcane crops thrive in the semi-tropical climate of this region. Cash receipts of raw sugarcane production increased during the 1993-98 period to \$472 million in 1998 (Figure 1). The area of harvested Florida sugarcane was 437,000 acres in 1997. The number of Florida sugarcane farms increased slightly to 206 in 1997 (Census of Agriculture).

Sugarcane is processed into raw sugar and then into refined sugar. Value of shipments of Florida raw sugar and refined products increased by 14 percent between 1990-96, reaching over \$1 billion in 1996. Meanwhile, direct employment in raw and refined sugar manufacturing declined by 44 percent between 1990-96, to 2,900 persons. An additional 4,758 persons were directly employed in sugarcane production. Florida ports internationally export sugar to the Caribbean region, South America, and Europe. The value of these raw and refined exports grew by an average annual rate of seven percent between 1994 and 1998 to \$34 million.



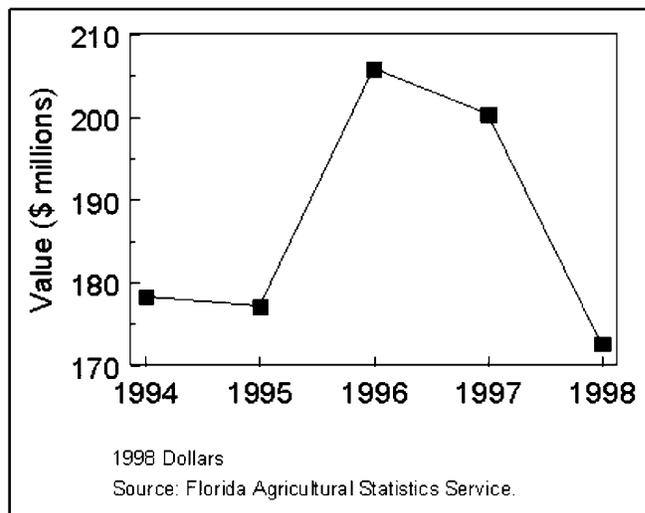
**Figure 1.** Cash receipts for Florida sugarcane, 1993-97.

The total economic impacts of sugarcane production, processing, and refining included 26,282 jobs, \$2.9 billion in output, \$1.3 billion in value added, and \$798 million in labor income in 1998 (Table 1).

**Field Crops Excluding Sugarcane**

Other field crops produced in Florida include corn, cotton and cottonseed, hay, peanuts, soybeans, tobacco, and wheat. Together, these crops were valued at \$172.7 million in 1998 (Table 2). Peanuts were the highest valued field crop at \$57.3 million, followed by cotton (\$34.4 million) and tobacco (\$29.9 million). Between 1994 and 1998, the value of these crops fluctuated markedly and decreased by three percent overall (Figure 2). The field crop commodities that declined during this period were soybeans (-29 percent), corn (-22 percent), wheat (-6 percent), and cotton (-3 percent). Crops that increased in value during this same period were peanuts (five percent), hay (six percent), and tobacco (18 percent). The number of field crop farms declined to 3,533 farms in 1997. Harvested areas of Florida field crops declined from 408,000 acres in 1987 to 370,000 acres in 1997.

The value of field crops exported to international markets through Florida ports more than doubled from \$15.6 million in 1994 to \$37.3 million in 1998. During 1998, the Caribbean was the top export destination (55 percent), followed by South America (29 percent) and Central America (7 percent). Export



**Figure 2.** Cash receipts for Florida field crops, excluding sugarcane, 1994-98.

values to the Caribbean nearly doubled between 1994 and 1998, while exports to South America and Central America increased by three and four times, respectively.

The total economic impacts of field crops (excluding sugar products) included 10,938 jobs, \$504 million in output, \$303 million in value added, and \$175 million in labor income (Table 1).

**Table 1.** Economic impacts of Florida's field crop industry, 1998.

	Direct Impacts*				Total Impacts*			
	Employment (jobs)	Industry Output (m\$)	Value Added (m\$)	Labor Income (m\$)	Employment (jobs)	Industry Output (m\$)	Value Added (m\$)	Labor Income (m\$)
Sugarcane	4,758	474.5	277.5	133.1	8,509	657.9	402.3	210.9
Raw Sugar	2,704	1,200.9	208.9	154.2	17,038	2,118.7	870.1	565.6
Refined Sugar	716	153.5	40.5	18.8	736	157.5	51.8	21.6
Cotton	377	34.4	21.3	15.4	1,027	79.9	48.2	30.9
Food Grains	34	1.5	0.8	0.5	52	3.0	1.7	0.9
Feed Grains	449	21.8	12.6	6.7	725	43.3	25.7	14.1
Hay and Pasture	3,187	57.9	39.8	24.6	3,622	115.0	72.9	40.8
Grass Seeds	981	11.8	7.1	3.7	1,062	21.3	13.7	6.9
Tobacco	745	29.7	12.4	6.5	1,138	63.2	32.8	18.6
Miscellaneous Crops	776	29.7	12.9	8.7	929	41.4	21.8	13.8
Oil Bearing Crops	1,575	62.3	42.1	25.0	2,382	137.2	86.0	48.5
<b>Total</b>	<b>16,302</b>	<b>2,078.0</b>	<b>676.0</b>	<b>397.0</b>	<b>37,220</b>	<b>3,438.0</b>	<b>1,627.0</b>	<b>973.0</b>

\* Impacts estimated using economic multipliers for direct, indirect, and induced effects.  
Source: Minnesota IMPLAN Group, 2001.

**Table 2.** Cash receipts for Florida field crops, 1998.

Crop	Value (million \$)
Peanuts	57.3
Cotton	34.4
Tobacco	29.9
Hay	13.9
Corn	8.0
Soybeans	5.0
Wheat	1.5
Other	22.6
<b>Total</b>	<b>172.7</b>

Source: USDA, Florida Agricultural Statistics Service.