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## Cuban Citrus Industry's Transition Into the International Free Market Arena<sup>1</sup>

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Following the developments in the former socialist countries of the Soviet Union and Eastern Europe since 1989, dramatic changes have occurred within the Cuban citrus industry. The market-driven restructuring of Cuba's industry, such as foreign joint ventures and establishment of grower cooperatives, were reported to the 1996 Florida State Horticultural Society (FSHS). This paper reviews the programs implemented and evaluates how these programs have changed Cuba's citrus production and marketing strategies. Revised acreage and production data, along with changes in fresh and processed market utilization and exports, are discussed. An overview is also presented on the possible market implications to Florida and U.S. citrus industries if and when the U.S. economic sanctions are lifted.

Developments in the former socialist countries of the Soviet Union and Eastern Europe since 1989 had a dramatic impact on the economic situation in Cuba. This impact placed a great deal of pressure upon the Cuban government. In response, the Cuban government entered into a process of economic reforms, which included the Cuban citrus industry. An historical perspective of Cuba's citrus industry from 1959 through 1990—during which time Cuba's

economy was directly aligned with the former Soviet Union Socialist Bloc's subsidized barter market arrangement—and the economic impact to the Cuban citrus industry that occurred after 1990 with the disintegration of the Soviet Socialist Bloc were discussed in a 1996 FSHS paper. The economic reforms that were implemented—which included foreign joint ventures, establishment of grower cooperatives, and exporting fresh and processed citrus products in the international free market arena—are discussed in this paper. A review of the programs implemented and how these programs have changed Cuba's citrus production and marketing strategies will be discussed. Revised acreage and production data, along with changes in fresh and processed market utilization and exports, are discussed.

### Historic Perspective

Citrus production was introduced to Cuba by the Spaniards at the end of the fifteenth century. During the period which Cuba was under Spanish rule, citriculture had little economic importance. Sugarcane, tobacco, and coffee were the major agricultural crops grown for export by the Spaniards. After Cuba's independence from Spain in 1902, foreign capital

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investment in citrus, particularly from the United States, resulted in increased citrus production. In 1959, less than 30,000 acres of citrus were grown in Cuba.

After the revolution that brought the Castro regime into power, the large agriculture land base was expropriated and brought under government control. Citrus was identified as a crop to be emphasized and used for export. Consequently, acreage designated for citrus expanded rapidly, and as shown in Figure 1, major citrus production areas were developed throughout the island. By 1990, approximately 350,000 acres were devoted to citrus. Cuba's citrus production ranks fifth among the citrus-producing countries in the Western Hemisphere.

### **The Dissolution of the Soviet Bloc**

During the period of expansion of citrus production, Cuba exported citrus to the former socialist countries of Europe in a barter arrangement. Cuba would generate credits with its exports and realize debits with its imports, which included fertilizer, chemicals, machinery and oil. The relative valuation of citrus compared to the cost of imported products was such that its "price" was significantly higher than world citrus prices.

With the disintegration of the Socialist Bloc and the resulting financial hardship on the Soviet Union, the barter arrangement with Cuba ended in 1990. The result was a major contraction in the Cuban economy. Between 1990 and 1994, Cuba's gross national product (GNP) declined by an estimated 50 percent. Likewise, citrus production was also adversely affected.

While citrus enjoyed a boom in the 1970-90 period, it thrived in isolation from competition from other citrus-producing regions. As such, when this isolation ended in 1990, the Cuban citrus industry was not able to deal with the realities of competition in free markets. The industry had minimal marketing expertise and had paid scant attention to post-harvest issues. Production and marketing were not well-coordinated. Soon it was recognized that Cuba's citrus sector lacked the expertise to compete in the world citrus market arena. The result was a reorganization of Cuba's citrus industry.

## **Changes in the Organization of Cuba's Citrus Industry**

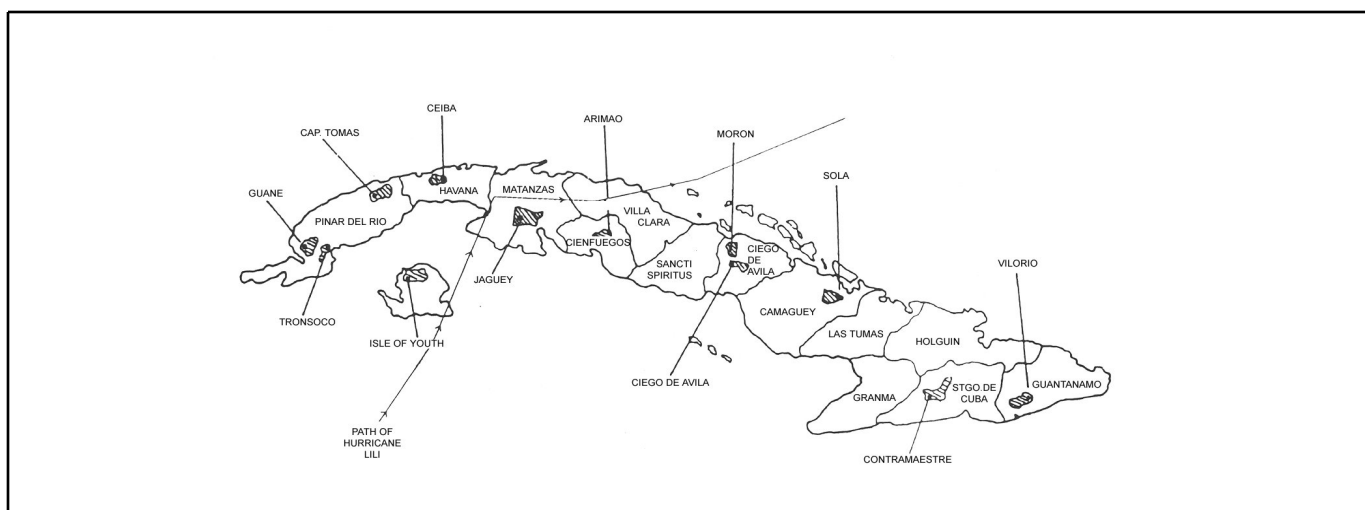
Following the economic collapse of the Cuban economy and the disintegration of the Soviet Bloc, several important changes were implemented in the Cuban citrus industry. These include joint ventures, reorganization of the state farms, and evaluation of existing production areas.

### **Joint Ventures With Foreign Companies**

The 1990s brought a modification to the barter arrangement with the former Soviet Bloc countries that resulted in a major decline in the effective price received for Cuban citrus exports. The Cuban government realized that Cuba would have to compete in the international free market arena, specifically, the Western European market. Also, there was a realization that the Cuban citrus industry lacked the marketing expertise necessary to effectively compete with Florida, Israel, Spain, and other major suppliers to the European market. Thus, Cuban law was changed to allow the formation of joint ventures with foreign countries.

As shown in Table 1, four foreign ventures were formed in the Cuban citrus industry in conjunction with Cuba's Corporacion Nacional de Citricos (CNC). Of the four joint ventures, two have been dissolved, and two remain. In 1991, the Pole Association, based in Chile, began a venture with the state citrus farm located on the Isle of Youth (formerly known as the Isle of Pines). This island is located off the southwest coast of the main island of Cuba (Figure 1). The involvement of the Pole Association was to provide technical assistance in production, packing, and marketing. Both fresh packing and juice processing facilities are located on the Isle of Youth. However, in 1995, the Pole Association's involvement in Cuba ended.

A second foreign venture was with the Greek company Lola Fruit at Ciego de Avila in 1993. Ciego de Avila is located near the center of Cuba, east-southeast of Havana (Figure 1). Lola Fruit was involved in production, fresh packing and juice processing, and marketed fruit primarily in Europe.



**Figure 1.** Production Area for Citrus in Cuba, by Province, and the Path of Hurricane Lily through Cuba, October 18-19, 1996.

This joint venture with the Cuban government ended in 1995.

In 1992, the Cuban citrus industry entered into a venture with the Chilean group, the I.N.G. Company, to operate a juice-packing facility near the processing plant at Jagüey Grande. This aseptic packaging facility packs a wide range of juice products, including orange, grapefruit, banana, papaya, and mango. These products are marketed to the tourist sector in Cuba and in the Caribbean region. The I.N.G. Company is still operating in Cuba.

The foreign presence that has been involved longest in the Cuban citrus industry is the BM Group, an Israeli company. The BM Group initially began its association with the Cuban government in 1960 and then renewed its involvement in 1990. This Israeli company is involved with production, fresh packing, and juice processing at Jagüey Grande, where Cuba's largest citrus planting operation is located. Fresh fruit and bulk concentrate is marketed primarily in Western Europe. Jagüey Grande is in central Cuba, southeast of Havana (Figure 1). This foreign venture with the BM Group continues to operate in Cuba.

Since 1996, a major change in Cuba's citrus industry has been the de-emphasis of the fresh fruit market and focus on the bulk concentrate juice market. Before the dissolution of the Soviet Bloc, fresh citrus was the market outlet through the barter agreement with the Eastern European socialist countries. Fruit quality was not a major concern when supplying this market. However, when Cuba entered

the international fresh fruit market, fruit quality became a major factor for consumer acceptance. With limited chemical production inputs, it became apparent that less fruit could be produced than could compete in this new market arena. As can be seen from Table 2, fresh citrus exports declined from a high of 480,000 metric tons in 1989 to the current level of 46,000 metric tons in 1997.

Thus, CNC and the Cuban government realized that processed citrus juice is an area in which Cuba can compete in the world market. The indications are that Cuba has perhaps established a market for "high ratio/poor color" orange juice for blending with better quality orange juice. And since most grapefruit for juice processing is "field run" and "not packinghouse eliminations," there appears to be less concern with SOPP (sodium o-phenylphenate) or TBZ (thiabendazole) on the fruit that is being processed. With recent inquiries by Cuban citrus industry officials about organic citrus farming requirements, both in the United States and Europe, the speculation is that perhaps Cuba has found a "niche" in the European market to sell "pesticide-free" juice. As can be seen from Table 3, total annual processed utilization increased from about 20 percent in the early 1990s to more than 70 percent in 1997.

A review of the processing facilities in Cuba should support the market redirection of Cuba's citrus industry (Table 4). First, the CNC has constructed a new processing facility at Santiago de Cuba in the eastern part of the island. This new facility will

process 2 million boxes of oranges annually. In the center of the island at Ciego de Avila, the processing facility has been refurbished to handle 3.75 million boxes of oranges and grapefruit. The largest processing facility is located at Jagüey Grande, which is located southeast of Havana. This facility, which was refurbished in 1994 and 1996, is operated by the Israeli BM Group. The total annual processing capacity is estimated to be 8.75 million boxes of oranges and grapefruit.

More recently, two additional processing facilities are being planned for citrus. The first is a processing facility that is being planned by a British investment group in central Cuba at Arimao/Cienfuegos. The second processing facility would be located near Guane in the western province of Pinar del Rio. This facility would be built by an Italian company and would process citrus and other fruits and perhaps vegetables.

### **Converting State Farms into Cooperatives**

The second major change made by the Cuban government was the reorganization of the state farms into cooperatives. Between the mid-1960s and 1990, large state farms dominated all sectors of agriculture in Cuba. In 1993, the Cuban government began to break up the state farms, turning partial control of these smaller units over to the farm managers and workers. The new production units were called UBPCs, or basic units of productive cooperation. Initially, the UBPCs operated autonomously, but they were given more decision-making power than they were under the state farm system. The state sells inputs—such as fertilizer, chemicals, fuel and machinery—to the UBPCs at state-controlled prices, and the UBPCs must produce and harvest the crops and then sell the fruit to a state-operated fresh packing or juice-processing facility. Production in excess of the quota is allowed to be sold through a local "free" agricultural market, where prices are not directly controlled by the government.

A further major change has occurred with respect to the operations of the cooperative farms or UBPCs. To create more incentive for increasing production, the UBPC cooperatives were allowed to operate "more

like" a private enterprise. Thus, the cooperative members were required: to estimate the annual yield per hectare; to estimate the amount of fertilizer, chemicals, and fuel required to produce the estimated yield; and then to estimate a unit production cost per hectare.

Production inputs are still purchased from Cuba's CNC at a predetermined price, perhaps at a subsidized price. The CNC guarantees a base price per metric ton for the fruit produced. However, the government policy changed so that the cooperative members can keep the difference (profits) between the guaranteed price and the cost of production.

### **Evaluation of Existing Citrus Acreage**

The third major step that was taken by the Cuban government was to evaluate existing citrus production areas to determine which were the most productive citrus plantings. With the special marketing arrangement with the Soviet Bloc ending in 1990, Cuba's citrus industry no longer had access to low-cost fuel, fertilizer, and chemical inputs. Therefore, since most of these inputs had to be imported with a limited foreign exchange, there was a realization that sufficient inputs would not be available to adequately care for the 350,000 acres of citrus.

Thus, the decision by the Cuban government was to retrench the industry. The approach was to classify existing citrus plantings into three priority categories:

**Priority I:** Citrus acreage that had the most potential for high yields and producing quality fruit for export. These plantings would receive the full grove care program.

**Priority II:** Citrus acreage producing fruit destined for processed juice. These plantings received less care compared to Priority I but focused on production of adequate juice yields.

**Priority III:** Marginal citrus acreage producing fruit destined for the domestic market or fruit that will be abandoned.

During 1995-96, the decision was made to downsize the total citrus acreage and to focus on increasing production efficiency due to limited availability of production inputs. This occurred in all production regions throughout the main Cuban island. However, the citrus planting at Vilorio in Guantanamo province was eliminated from commercial production. Also, the citrus operations on the Isle of Youth were mostly discontinued, with the juice processing and fresh packing facilities no longer operational. The downsizing on the Isle of Youth was partially due to hurricane Lily. In October 1996, the path of hurricane Lily (Figure 1) brought strong winds and rain to the island, resulting in heavy fruit loss and some damage to the citrus trees.

The result of the land reforms can be seen from Figure 2. Total land area designated to citrus declined from almost 350,000 acres in 1990 to the current level of about 200,000 acres. The acreage distribution remains about 60 percent oranges and 30 percent grapefruit. More than 80 percent of the acreage is mature bearing trees.

The downsizing, or concentrating, of citrus acreage into more productive units as well as the growing privatization of the UBPC cooperatives has apparently resulted in an increase in total citrus production. The average yield in Cuba, low when compared to Florida, increased annually since 1994. The per-acre yields increased annually from the 1994 low of 46 boxes per acre to 102 boxes per acre in 1997 (Table 5).

Total citrus production peaked in 1990 at about 25 million boxes (Figure 3). Production declined to 12 million boxes in 1994 before the land utilization reforms were implemented. In 1997, total citrus production rebounded to just under 20 million boxes, or approximately 80 percent of the 1990 production level. Total production of oranges and grapefruit has accounted for more than 80 percent of the citrus production in Cuba during the 1990s (Table 6).

## Concluding Comments

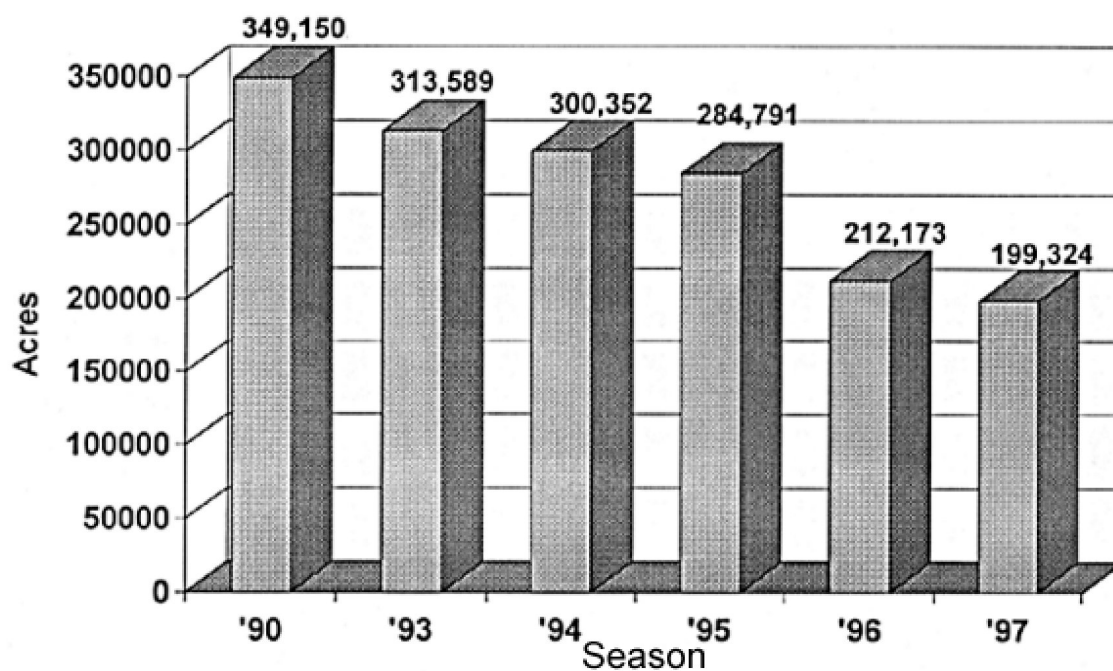
The 1990 dissolution of the Soviet Bloc ended the preferential barter-arranged prices paid to Cuba for its citrus exports. This market arrangement did not reflect the demands of a competitive market system that

requires high fruit quality, efficiency in fruit handling and promptness of delivery. The lack of market expertise led to a reorganization of Cuba's citrus industry, which included joint ventures with foreign companies, downsizing the total citrus acreage, and organizing the state farms into "grower" cooperatives (UBPCs). The UBPC cooperative members have been given more control of the decision-making about what cultural inputs to use and are now allowed to retain the differences (profits) between the cost of inputs and the guaranteed prices paid by the Cuban government.

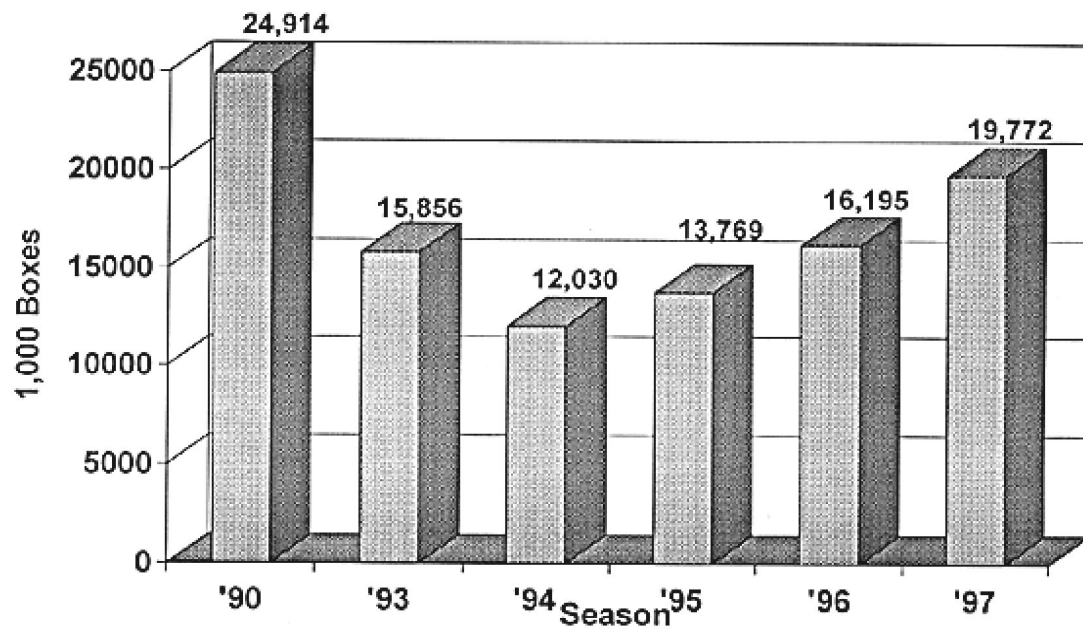
Both the downsizing of the citrus acreage into more efficient units of production and the increasing privatization of the UBPC cooperatives have resulted in increased total citrus production. Initially, the market focus was exporting early-maturing fresh citrus primarily to Europe. However, due to the lack of essential production inputs, such as chemicals, growing and exporting quality fresh fruit was limited. Therefore, the recent focus in Cuba's citrus industry has been to develop the bulk concentrate citrus juice market. Citrus-processing facilities have been expanded and/or refurbished, and new joint ventures with foreign investors are intended to add new processing facilities in the citrus-growing regions. Cuba's citrus industry appears to have substantially recovered from the economic decline, which resulted from the 1990 dissolution of the Soviet Bloc.

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**Figure 2.** Estimated Total Citrus Acreage in Cuba from 1990 through 1997.



**Figure 3.** Estimated Total Citrus Production in Cuba from 1990 through 1997.

**Table 1.** Cuba: Foreign Investment in Citrus, 1990-96.

<b>Cuban Agency</b>	<b>Firm and Country</b>	<b>Years of Association</b>	<b>Major Activity (Brand Name)</b>
Corporacion Nacional de Citricos	BM, Israel	1960s, renewed in 1990	Prod., mktg. & processing, Jagüey Grande
Corporacion Nacional de Citricos	POLE, S.A. Chile	1991 through 1995	Prod./mktg.-esp. grapefruit, Isle de Youth
Corporacion Nacional de Citricos	I.N.G., Chile	1992	Aseptic processing/ packaging, Jagüey Grande
Corporacion Nacional de Citricos	Lola Fruit, S.A. Greece	1993 through 1995	Prod., mktg. & processing, Ciego de Avila



**Table 2.** Cuban Fresh Citrus Exports by Variety, 1989-97.

Year	Total	Oranges	Grapefruit	Limes
-1,000 MT-				
1989	480.0	300	180	—
1990	450.0	268	182	—
1991	278.0	89	189	—
1992	97.0	17	80	0.08
1993	98.0	45	53	0.07
1994	93.0	40	53	—
1995	—	—	—	—
1996	60.3	—	—	—
1997	46.6	—	—	—

**Table 3.** Processed Utilization of Citrus in Cuba by Variety, 1990-96.

Year	Quantity Processed	Percent of Total Production	Oranges	Grapefruit	Lemons and Limes	Others
	-1,000 MT-	-%-		-1,000 MT-		
1990	204.9	20	99.6	93.1	10.5	1.7
1991	177.6	21	77.1	94.3	5.4	0.3
1992	222.8	28	82.3	137.6	2.8	0.2
1993	194.1	30	81.0	110.5	1.6	0.1
1994	—	—	—	—	—	—
1995	393.4	59	228.7	164.7	—	—
1996	589.3	73	352.7	236.6	—	—

**Table 4.** Cuba's Citrus Juice-Processing Facilities.

Production Region	Type of Citrus	Annual Production Capacity	Current Status/Management
		-1,000 boxes-	
Jagüey Grande	oranges, grapefruit	8,750 boxes	Operating/BM Group (Israel)
Ciego de Avila	oranges, grapefruit	3,750 boxes	Refurbished and operating/Cuban National Citrus Corp.
Santiago de Cuba	oranges	2,000 boxes	New facility/Cuban National Citrus Corp.

**Table 5.** Citrus Production in Cuba.

<b>Year</b>	<b>Boxes per Acre</b>	<b>Year</b>	<b>Boxes per Acre</b>
1990	88	1994	46
1991	70	1995	64
1992	67	1996	83
1993	56	1997	102

**Table 6.** Citrus Production in Cuba.

Variety	1990	1993	1994	1995	1996	1997
-1,000 boxes-						
Oranges	14,793	9,286	6,101	6,738	6,934	11,809
Grapefruit	8,146	5,682	5,341	6,395	8,575	7,252
Lemons/limes	1,497	333	368	441	490	515
Tangerines	360	414	123	123	123	123
Others	118	142	98	74	74	74
Total	24,914	15,856	12,030	13,769	16,195	19,772