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Florida's Natural® and the supply of Florida oranges

CASE STUDY

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Abstract

This case study provides a thorough description of the U.S. orange juice industry, and focuses on Florida's Natural, a cooperative of citrus growers and owner of the Florida's Natural® brand. Florida's Natural® competes mainly with Tropicana, owned by PepsiCo, and with Minute Maid and Simply Orange, brands of The Coca-Cola Company. The objective of the case is to evaluate the orange juice industry, assess the position of Florida's Natural within the industry, and propose business actions for the cooperative. By the end of 2016, the orange juice industry was in the midst of a severe crisis, threatened by decreasing supply and changing consumption preferences. Total orange production in the State of Florida during the 2015-16 season was the smallest crop since the 1960s due mainly to a disease known as citrus greening. Marketers were also facing consumers' concerns regarding high levels of calories and sugar in some juice categories. Furthermore, on May 2016, the Food and Drug Administration mandated a change in the nutrition facts label on packaged food, becoming effective in the summer of 2018, which may impact marketers in the sector.

Keywords: agribusiness, orange juice industry, citrus greening, Florida's Natural
JEL code: Q13, M2, M3

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A teaching note has been prepared for this case study. Interested instructors at educational institutions may request the teaching note by contacting the author or IFAMA.

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1. Introduction

Late in 2015, Dr Robert Behr was appointed CEO of Florida's Natural Growers (Florida's Natural hereafter), the leading cooperative commercializing the Florida's Natural® brand of citrus juices. With a Ph.D. in Food and Resource Economics from the University of Florida, Dr Behr had plenty of experience in the citrus industry after serving as director of economics and marketing at the Florida Department of Citrus and holding different management positions at Florida's Natural. Yet, managing any citrus company posed a tremendous challenge. One issue was the scarce supply of oranges. Orange production in the State of Florida, the home of the cooperative, reached its lowest level in decades during the 2015-16 season due mainly to the disease Huanglongbing (also known as citrus greening – HLB). Demand for orange juice was also a concern. Customers' tastes and preferences toward beverages were changing rapidly and juice companies were offering an array of innovative products. Furthermore, some consumers were moving away from juices due mainly to the perception that they contained high levels of sugar. By the end of 2016, Dr Behr and his team needed to revisit the situation of the cooperative and the industry in order to implement a sustainable business strategy. Questions under consideration included the following. What efforts should Florida's Natural put forward to better position its Florida's Natural® brand? What strategies should the firm pursue in order to assure adequate supply of high quality inputs?

2. Juice and juice drinks

2.1 Recent trends

Juices are defined as packaged beverages containing 100% fruit or vegetable juice. Juice drinks are packaged beverages with less than 100% fruit juice or vegetable content.[1] Off-trade (e.g. in stores) annual sales revenue of juices and juice drinks (J&JD) in the U.S. was estimated at about $17.3 billion with 2,261.5 million gallons sold in 2016 (Euromonitor, 2017).[2] Table 1 shows that J&JD volumes decreased in recent years while prices increased. J&JD industry analyses by Euromonitor and others (Brown and Washton, 2013; Euromonitor, 2016, 2017) suggested the following. The drop in sales during recent years was caused, in part, by consumers' concerns regarding high sugar content in some beverages. This concern affected juice drinks the most since, unlike juices, juice drinks contain added sugar and artificial ingredients. The prices increase is attributed to the emergence of a premium segment, which includes exotic juices and/or blends (e.g. coconut water, aloe vera juice, pomegranate juice, and prune juice), smoothies (e.g. Naked and Odwalla brands), and unpasteurized, cold-pressed juices. In addition, the continuing declining supply of oranges in the last decade caused by disease has contributed to the decline in sales volume and increase in prices observed in Table 1. Orange juice and orange drinks together had an estimate share of around 36% of the J&JD industry in 2016.

2.2 Attributes and prospects of juices and juice drinks

By the end of 2016, market research specialists forecast volume of J&JD to continue to decline in 2017 and 2018 by 1 to 2%.[3] However, the juice category (100% juice), which had positive growth in previous years, was forecast to continue growing into the future. In recent years, the highest growth in beverages has come

[1] Euromonitor (2017) separates juice drinks (up to 24% juice), nectars (25 to 99% juice content), and coconut and other plant waters.
[2] Unless otherwise stated, statistics in this study refer to off-trade figures.
[3] Statistics obtained by authors from Passport (formerly Euromonitor International).

Table 1. Off-trade sales growth of juice and juice drinks in the United States (Euromonitor, 2017).

	2013	2014	2015	2016
Year to year change of volume	-1.7%	-1.9%	-1.9%	-0.8%
Year to year change of value	-1.3%	-1.7%	1.5%	1.4%

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from premium, high profit, low calorie, 'better-for-you' juices that attracted health conscious millennials and Boomers (Brown and Washton, 2013). A study by Tetra Pak in 2016 (Crawford, 2016) found potential for growth of juices in particular areas: (1) 67% consumers rate 'all natural' as the most interesting juice attribute; (2) vegetable blends is a growing category, attracting customers probably because they have lower natural sugar and offer different nutrients; and (3) 60% of consumers look for juices with proven medical benefits (i.e. functional products).

Despite its high sugar content, fruit beverages are an important source of vitamins and minerals and represent a cost-effective way to meet consumers' daily fruit intake recommendations (Leschewski *et al.*, 2016). This has allowed manufacturers to successfully launch fortified juices with vitamins and minerals, and campaigns that emphasize naturally occurring nutrients in juices. Table 2 provides nutrients in selected fruit juices.

The same year, 2016, researchers from Michigan State University and the Economic Research Service of the USDA (Leschewski *et al.*, 2016) published an article addressing whether specific nutrients in J&JD garner price premiums. Categories other than nutrients, in their hedonic price model, include product categories (e.g. flavor, brand name, private label, etc.), packaging, and attributes of the acquisition (such as store type, region, etc.). The study provides results across the two categories, juices and juice drinks. Overall, the study finds that: (1) all nutrients garner premium prices in juices while only selected nutrients garner premium prices in juice drinks; and (2) sugar garners premium prices in juice drinks only. The model estimates, for instance, that adding one additional mg of antioxidants in juices leads to a 5% increase in the price per ounce. As expected, sugar is not associated with price premiums in juices. Price premiums, according to the researchers, may reflect both manufacturers' costs and consumers' willingness-to-pay.[4]

[4] Interestingly, in the juice drinks category (and more specifically, for the non-diet subcategory), one additional gram of sugar is related to a 1% price premium. The authors argue that consumers in this category prefer the taste of sweeter drinks, are willing to pay for additional sugar, and manufacturers price the cost accordingly.

Table 2. Percent of the daily value of nutrients in eight ounces of assorted fruit juices. Figures based on a 2,000 calorie diet (Leschewski *et al.,* 2016).

Nutrient	Apple	Cranberry cocktail	Grape (purple)	Grapefruit (white)	Orange	Pineapple	Prune
Energy, kcal	6%	7%	8%	5%	5%	7%	9%
Protein, g	0%	0%	3%	2%	3%	3%	3%
Total sugars, g	76%	94%	119%	49%	63%	109%	109%
Dietary fiber, g	1%	0%	0%	1%	3%	2%	10%
Total fat, g	0%	0%	0%	0%	1%	0%	0%
Vitamin A, RAE	0%	0%	0%	4%	1%	0%	0%
Vitamin E, mg	0%	3%	0%	1%	2%	0%	2%
Vitamin C, mg	4%	100%	0%	156%	143%	42%	18%
Calcium, mg	2%	1%	0%	2%	2%	3%	3%
Phosphorous, mg	2%	0%	3%	4%	4%	2%	6%
Magnesium, mg	2%	1%	6%	8%	7%	8%	9%
Iron, mg	5%	1%	3%	3%	6%	4%	17%
Sodium, mg	0%	0%	0%	0%	0%	0%	0%
Potassium, mg	8%	1%	10%	11%	12%	9%	20%

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3. Orange juice and orange drinks

3.1 Flavors shares

Orange has the highest share among available flavors in the J&JD industry. In 2016, sales volume of orange juice (100% juice content) in the U.S. represented around one half of total juices (Euromonitor, 2017; Statistica, 2017). Orange drinks also had the highest-in-category share with about 20% volume of total drinks (Euromonitor, 2017). Volume of orange juice and orange drinks together represented 36.4% of J&JD consumed in the U.S. in 2016. Figure 1 provides sales of juice and juice drinks by flavors over time.

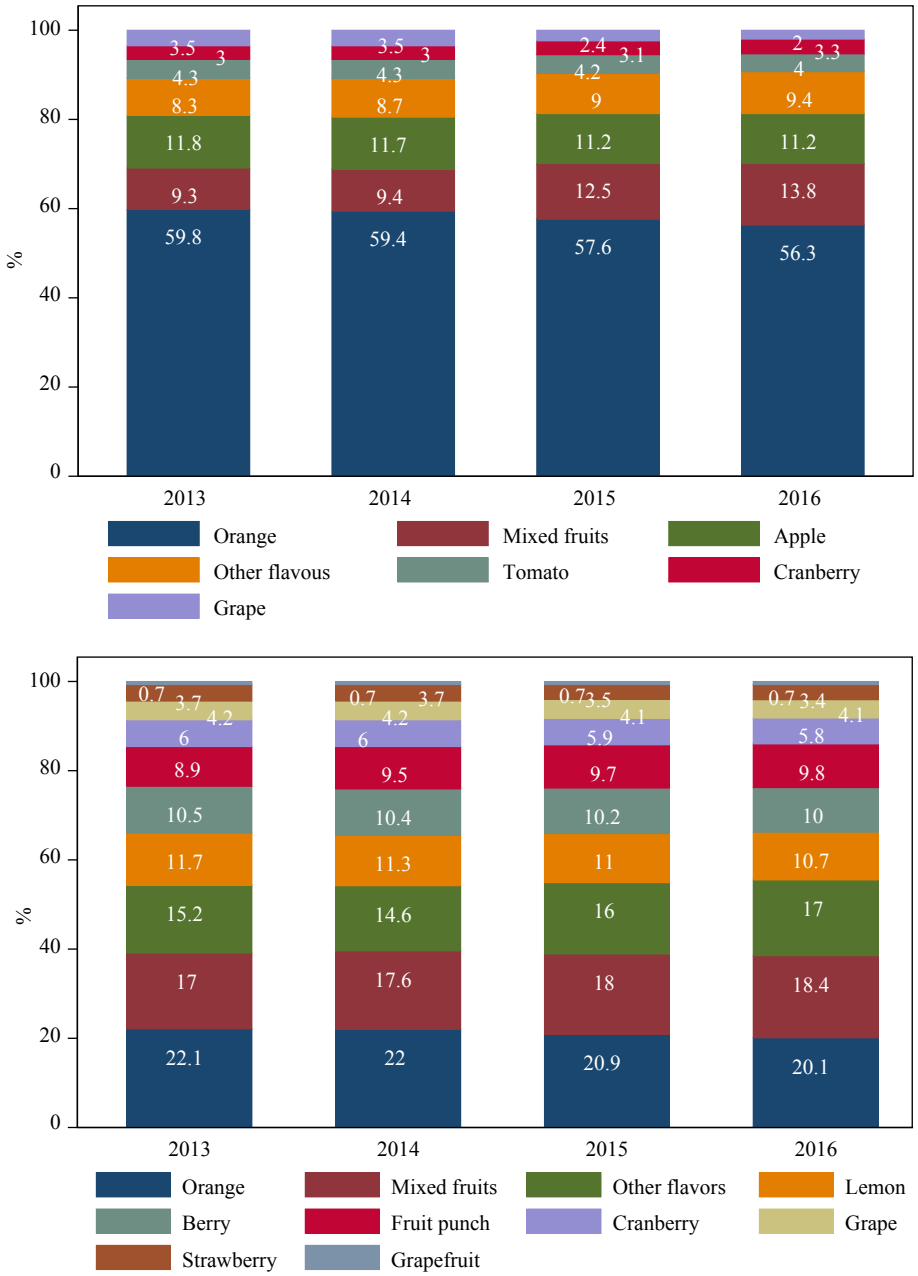

Figure 1. Flavors of juices (above) and juice drinks (below) in the U.S. by shares (Euromonitor, 2017).

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3.2 Orange juice consumption

According to estimates by the Florida Department of Citrus (FDOC), presumed consumption of orange juice in the U.S. decreased from 1,084 million single strength equivalent (SSE) gallons in the 2012-13 crop season to 883 million SSE gallons in 2015-16 (Figure 2). This is equivalent to a decline of per capita consumption from 3.4 to 2.7 gallons during that period. Presumed consumption is an approximate, disappearance measure estimated by the FDOC as season-beginning inventory plus Florida and other states production plus U.S. imports minus U.S. exports minus season-ending inventory (FDOC, 2017). Presumed consumption in the U.S. was forecast by the FDOC to continue decreasing to 779 million SSE million gallons in the coming 2016-17 season.

The A.C. Nielsen Report provides more precise measures of orange consumption but for a reduced market coverage (e.g. selected grocery stores). Figure 3 shows historical orange juice sales volume (million SSE gallons) and prices (USD/gallon) disaggregated by two type of juices: refrigerated not-from-concentrate and refrigerated reconstituted.[5] Figure 3 also gives projections by the FDOC for the 2016-17 season.[6] Not-from-concentrate orange juice, the premium sub-category in 100% juices, gained share at the expense of reconstituted orange juice, moving from 57% in 2012-13 to 67% in 2016-17. Price increases were also slightly higher for not-from-concentrate.

3.3 A new policy with potential to affect orange juice consumption

The decline of orange juice consumption in the U.S. (Figure 2 and 3) was due to the combination of scarce orange juice supply and changing consumers' preferences regarding juices and juice drinks in general, as discussed. The concern regarding the connection between consumption of fruit beverages and increased risk for health problems due to high levels of calories and sugar, has recently prompted policy changes in the United States. In 2015, the USDA revised the Dietary Guidelines for Americans recommending abstaining

[5] Frozen juice and shelf stable juice are other categories in the A.C. Nielsen Report. Together they represent less than 5% of total volume. We do not present those statistics in this document, but are readily available in FDOC (2017).
[6] The FDOC provides projections for three price scenarios (high, mid, and low). Projections shown in this document are those for mid-level prices.

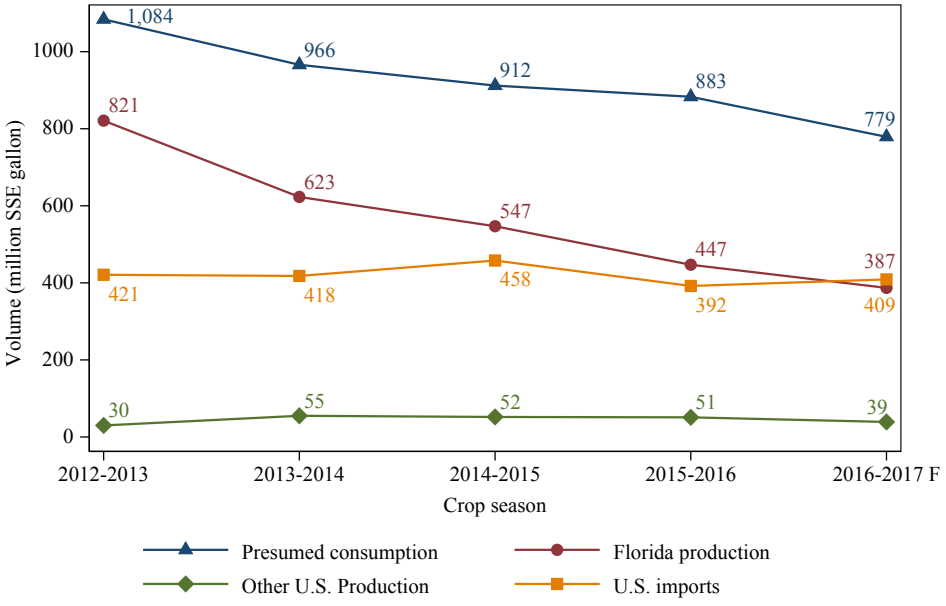

Figure 2. U.S. orange supply and presumed consumption (million single strength equivalent gallons).

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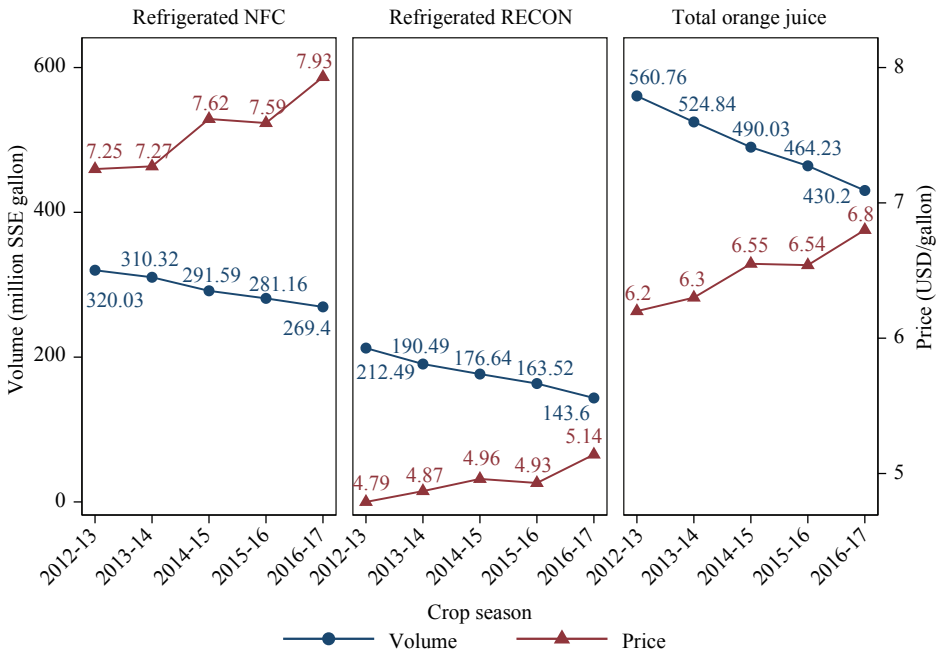

Figure 3. Volume (million single strength equivalent gallons) and prices (USD per gallon) of 100% orange juice at the retail level (Nielsen Topline Sales Annual Reports, generated by the Florida Department of Citrus, available at: http://tinyurl.com/y9kdapqg). Data up to the third week of October in the corresponding season. Original source takes data for U.S. grocery stores doing $2 million and greater annual sales, drug stores doing $1 million and greater annual sales, mass merchandisers (like Target), Walmart, club (Sam's and BJ's), dollar stores (Dollar General, Family Dollar and Fred's), and military/DECA. Forecast for the 2016-17 season according to FDOC (2017). NFC = Not-from-concentrate; RECON = reconstituted.

from fruit drink consumption and limiting fruit juice consumption (Leschewski *et al.*, 2016). Furthermore, on May 2016 the Food and Drug Administration released a new design for the nutrition facts label on packaged foods, which would become effective in the summer of 2018. Figure 4 provides the new label design of a hypothetical product highlighting the changes.

Figure 4. New label for packaged foods (FDA website).

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Changes in the new label include: (1) contents of vitamin D and potassium will be declared in the label, replacing vitamin A and C, which may continue to be labeled but will not be mandatory; (2) a new line, indicating the amount of 'added sugar' will be required in new labeling; and (3) total calories, in larger font, will be added. Orange juice analysts believe that the new label policy might positively impact orange juice consumption (Euromonitor, 2016; Trejo-Pech *et al.*, 2017) if marketers appropriately communicate to consumers the high level of potassium (which is more likely lacking in the U.S. population compared to other nutrients) inherent in oranges. Orange juice has the second highest level of this nutrient across commercially available juices (Table 2). The fact that 100% orange juice has no added sugar is another element juice companies may emphasize.

4. The Florida orange juice industry

The Florida citrus industry traces its origin to Spanish settlers who first brought citrus fruit to the New World in the 16th century. With its subtropical climate and sandy soils, which are highly suitable for citrus cultivation, the industry flourished in northeast Florida along the St. John's River before being pushed farther south as freezes periodically visited north and central Florida.

An important innovation in the industry was the development of frozen concentrated orange juice (FCOJ) soon after the end of World War II. FCOJ, developed by Florida Department of Citrus scientists (Pearcy and Goldberg, 2000), offered the means to allow long-term storage of orange juice, thereby extending the marketing season year-round. Concentrate orange juice was stable when stored in frozen form and when reconstituted (recon, as known in the industry) with water, it had a good taste. The next important development was aseptic storage, which allowed long-term storage of single strength orange juice. Not-from-concentrate (NFC) orange, a non-concentrated juice that is pasteurized before packing and chilling, was introduced by Tropicana in the 1950s (Pearcy and Goldberg, 2000), becoming the fastest growing orange juice product in the following decades. The better taste of NFC orange juice over FCOJ positioned this product in the premium category.

By the 1970s, Florida-based companies such as Tropicana and Minute Maid (owned by Coca-Cola) dominated the orange juice market in the United States and Canada. Orange juice had become a part of the American breakfast; per capita consumption had reached six gallons of single strength equivalent annually.

In the 1980s, a series of freezes destroyed a large portion of the productive citrus acreage in Florida. Florida had also suffered a freeze in 1962 that had prompted one large citrus company to establish a processed orange industry in Saõ Paulo state in southeast Brazil. The Florida freezes of the 1980s prompted a major expansion of the citrus industry in Brazil. In the 1985-86 season, the United States imported more than one-half of its orange juice supply from Brazil. The Florida industry recovered, however, and by the 1997-98 season produced over 240 million 90-pound boxes of oranges, a record crop. By this time, NFC orange juice had claimed about 30% of the U.S. market. Tropicana, with its Tropicana Pure Premium brand, held the largest share of the NFC market. Another company, Florida's Natural, claimed the number two position in the U.S. NFC market.

Historically, Florida has been an iconic place for orange production and processing of orange juice by bringing innovations to the market place. By 2016, it was one of the most important orange producing regions in the world (the orange industry in Brazil had flourished over time, producing around three times the total volume produced in Florida in the 2015-16 season, according to FDOC statistics) and the main producer in the U.S. (Figure 2 shows that Florida accounted for approximately 90% of total U.S. production in the 2015-16 season). Orange production in Florida has been severely affected during the 2000s by citrus greening, which was first found in Florida in 2005. By the end of 2016, no effective cure for citrus greening was foreseen in the near future. Figure 5 shows orange production during the last decade. Oranges produced in Florida represented 50.6% of presumed consumption in the U.S. in 2016 (Figure 2), and were very valuable for orange juice companies in the U.S. For instance, Florida's Natural's management believed that selling orange juice with 100% content of oranges produced in Florida was critical to provide high quality orange juice to American consumers.

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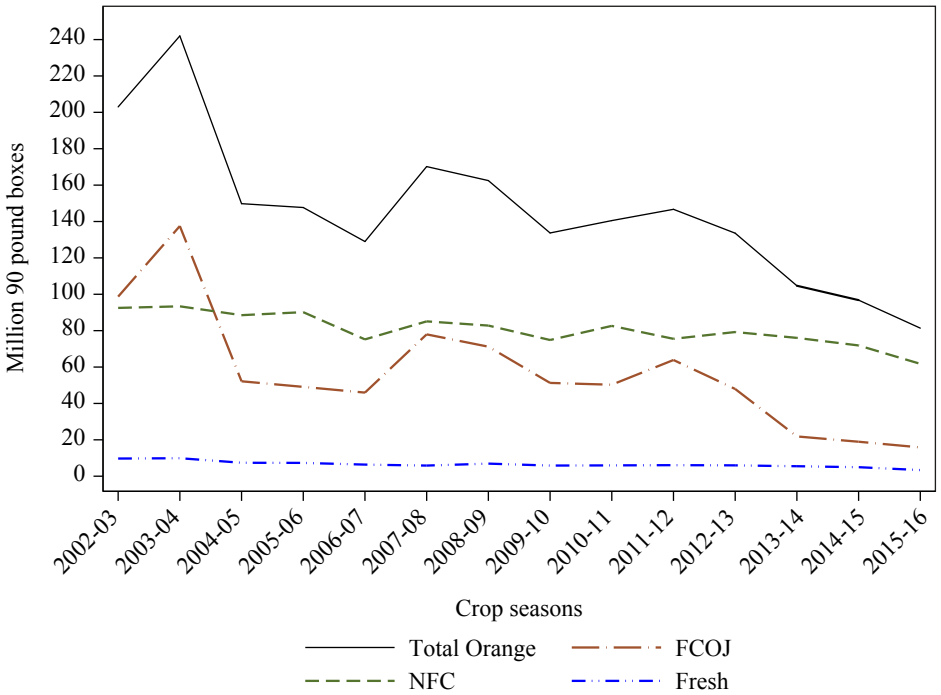

Figure 5. Florida orange production, 2002-2003 through 2015-16 (Florida Department of Citrus, Outlook Report 2016). The chard provides total round oranges production, in million 90 pound boxes, by utilization: FCOJ refers to oranges utilized for from concentrate orange juice, NFC for not-from-concentrate chilled orange juice, and fresh refers to oranges going to the fresh market.

5. Orange juice market players

5.1 Florida's Natural

By 2016, Florida's Natural Growers, better known as Florida's Natural, was a division of Citrus World Inc. Florida's Natural was a cooperative of citrus growers with headquarters in Lake Wales, Florida, a small city located between Tampa and Orlando. Florida's Natural was a federated cooperative because it was owned by fresh fruit cooperatives.[7] An individual grower became a member by first joining one of the fresh fruit cooperatives. The cooperative was initially organized in 1933 'by a few growers with a passion for producing the best possible citrus products on Earth.'[8] In 2016, the group had around 1000 farmer/members across twelve grower associations harvesting 60,000 plus acres of citrus groves for processing. Florida's Natural members planted, raised and cared for the trees; grew and cultivated the fruit; and processed and mainly packaged pure, not from concentrate citrus juice.

Florida's Natural brands portfolio included Florida's Natural, Donald Duck, Bluebird, and Growers Pride. Florida's Natural was a successful premium brand ranked among the two giant global brands: PepsiCo's Tropicana and Coca-Cola's Minute Maid and Simply Orange. Florida's Natural products included orange juices, grapefruit juices, lemonades, related juices, and juice blends. Figure 6 provides a list of products under the Florida's Natural umbrella by the end of 2016. The core product line of Florida's Natural was the not-from-concentrate 100% premium orange juice. In an effort to serve the emerging reduced-sugar, reduced-calorie market segment, Florida's Natural introduced in 2015 the 'Fit and Delicious' product line,

[7] A grower may choose to grow for the fresh market, processed market or both.
[8] Florida's Natural website. Retrieved on June 26, 2016 from https://www.floridasnatural.com/who-we-are.

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Figure 6. Florida's Natural portfolio of products.

which comprises products with 45% less sugar and calories.[9] Florida's Natural employed about 650 people in its processing plant and 100 people in its packaging plant.

Florida's Natural was a consolidated brand. Indeed, a survey conducted during 2016 by MSW-ARS Research/ The Brand Strength Monitor showed that Florida's Natural market shares were increasing through the year (Figure 7). Furthermore, the importance of the Florida's Natural brand went beyond the orange juice segment. Florida's Natural was one of the top 20 brands in the juice and juice drinks industry (all flavors included) in the U.S., as shown in Table 3.[10]

In 2016, virtually all fruit processed by Florida's Natural was received from its cooperative members, but the processing plant was open to receive high quality fruit from other Florida producers as well, as shown in Table 4. The cooperative had a healthy financial position with a very low level of debt, capital expenditures investment representing around 20% of total property, plant and equipment during 2011 to 2013; with this portion reduced in 2014 and 2015, reflecting the excess capacity/scarce supply of citrus crops in recent

[9] A video related to "Fit and Delicious" is available at: http://tinyurl.com/y862ce49.
[10] In addition, Florida's Natural was a top brand in the premium grapefruit juice market (Bouffard, 2014a). According to Euromonitor (2017), grapefruit juice had a 2% share in the J&JD industry in 2016.

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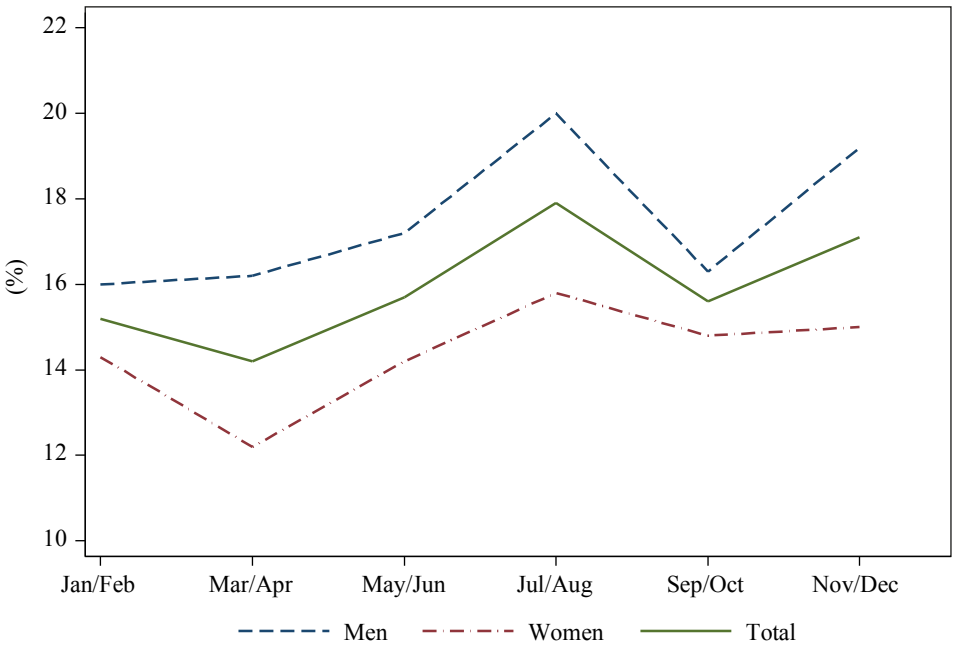

Figure 7. Brand preferences for Florida's Natural orange juice by gender (MSW-ARS Research/The Brand Strength Monitor, 2017). 15,738 respondents, aged 18-74, interested in orange juice. Shares up to December 2016 only shown in this figure for the purpose of this study.

Table 3. Top 20 brand shares of juice and juice drinks (all flavors) in the United States (Euromonitor, 2016).[1]

Brand	Company name (global brand owner)	%
Minute Maid	Coca-Cola Co, The	9.0
Private label	Private Label	7.4
Capri-Sonne	Deutsche SiSi-Werke GmbH & Co KG	6.9
Tropicana	PepsiCo Inc	6.3
Ocean Spray	Ocean Spray Cranberries Inc	5.5
Simply	Coca-Cola Co, The	4.7
Snapple	Dr Pepper Snapple Group Inc	4.3
Simply Orange	Coca-Cola Co, The	3.9
Sunny Delight	Sunny Delight Beverages Co	3.3
Tampico	Houchens Industries Inc	3.3
Kool-Aid	Kraft Heinz Co	3.0
Florida's Natural	Florida's Natural Growers	2.6
Welch's	National Grape Co-operative Association Inc	1.5
Dole	Dole Food Co Inc	1.4
Hawaiian Punch	Dr Pepper Snapple Group Inc	1.4
V8	Campbell Soup Co	1.4
V8 Splash	Campbell Soup Co	1.2
Brisk	Unilever Group	1.1
Mott's	Dr Pepper Snapple Group Inc	1.0
Naked	PepsiCo Inc	1.0
Others	Others	29.7
Total		100.0

[1] Data extracted by authors from Brands/Soft Drinks/Juice/USA categories. Sorted according to off-trade sales volume. Brands with shares lower than 1% as of 2015 were grouped as 'Others'.

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years due to citrus greening, which was affecting production not only in Florida, but in nearly all major citrus production regions in the world. Florida's Natural had kept its efficiency at high levels even during the difficult times the industry was facing, according to the sales turnover ratios, measured as sales to total assets. Table 4 provides selected financial items of Florida's Natural. As part of a cooperative, farmer/members received a proportional share of the cooperative's profits after it deducts the costs of processing the fruit and marketing the products.

5.2 Tropicana

Tropicana Products, Inc., along with Gatorade and Quaker, was an important part of PepsiCo's fast-growing nutrition segment in 2016.[11] Tropicana procured its oranges from the State of Florida, supplementing its fruit needs with imports from Brazil when Florida supplies were insufficient to meet its production needs (Esterl, 2012). In 2016, Tropicana's portfolio of products marketed in the U.S. included seven product lines: Tropicana Pure Premium, Trop50, Tropicana Drinks, Tropicana Twister, Premium Lemonades and Drinks, Farmstand, and Tropics. By then, only the Tropicana Pure Premium product line was advertised by Tropicana as 100% Florida orange juice. Trop50 was a juice drink with 50% less sugar and calories and no artificial sweeteners. Introduced in 2009, Trop50 was considered a breakthrough category innovation, containing 50 calories per each 8 fl oz serving, and naturally sweetened from the stevia plant (PR Newswire, 2009). Other than orange, flavors offered by Tropicana included cranberry, strawberry, mixed, peach, apple, and grape, among others. Fruits were processed by Tropicana in its plants located in Bradenton and Ft. Pierce, Florida.

According to an article published in December 2016 by The Washington Post (Heat, 2016), Tropicana had recently been active trying to gain market share by targeting millennials, a 75 million segment with room for growth. Tropicana was advertising its orange juices in Ashton Kutchers' A Plus digital news site, a channel that delivers its content through a website and a mobile app, with a focus on positive journalism, and that has 11.5 million unique monthly visitors. Videos of orange juice (http://tinyurl.com/y9vgmcdg) as a 'feel good morning beverage' have started to be shared in Facebook by celebrities.

5.3 Minute maid and simply orange

By 2016, the Coca-Cola Company participated in the orange juice industry with its Minute Maid and Simply Orange brands. Minute Maid was one of the first brands to sell reconstituted orange juice (recon) in the late 1970s (Goldberg and Hogan, 2004), and continued selling recon juices for decades. Only recently, in 2011, Minute Maid entered the premium not-from-concentrate juice segment (Euromonitor, 2011). Minute Maid's orange juice product line included both from concentrate and not-from-concentrate juices, and some products labeled as functional drinks (e.g. with vitamins and minerals like calcium). Other product lines included Lemonade & Punch, Light Juice Drinks, Variety Juice & Other (e.g. apple and grape juices, as well as sparkling punch), and Kids' Juice & Juice Drinks (e.g. Coolers and juice boxes). Simply Orange,

[11] Tropicana was acquired by PepsiCo on August, 1998 from Seagram as part of the strategy of the firm to focus on the nutrition market (Miller, 2016).

Table 4. Florida's Natural selected financials (Florida's Natural records).

	2011	2012	2013	2014	2015
Boxes received from cooperative members	92%	94%	94%	92%	91%
Capital expenditure to PP&E	25%	22%	18%	13%	10%
Sales to assets	1.4	1.4	1.2	1.2	1.3
Working capital to assets	23%	22%	21%	25%	32%
Long-term debt as a % of equity	0.07	0.06	0.07	0.05	0.05

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in contrast, offered not-from-concentrate juice only; stand-alone orange juice and orange juice blends with fruits such as banana, mango and tangerine.

5.4 Orange juice market shares

Table 5 provides market shares of refrigerated orange juice sales by top players in the premium orange juice segment, as estimated by 'Dairy Foods' (Kennedy, 2015). Private labels captured an important portion of the premium market, representing strong competition for national brands as supermarkets and hypermarkets had a significant share in the distribution system (Table 6).

6. Supply – citrus greening and planting programs

The main challenge the Florida citrus industry faced in 2016 was from two diseases: citrus canker and HLB, the latter also known as citrus greening. There is no cure for either disease although the negative effects of citrus canker can be mitigated. Greening, however, was a much more challenging disease. Research efforts were underway on several fronts, but by the end of 2016 no effective means of reducing the impact of the disease had been found.[12] Figure 5 shows Florida round orange production for the past 14 years. The 2015-16 crop of 81.4 million boxes was the smallest crop in decades and was about one-third the size of the crop produced in 2003-04. Furthermore, according to the Commercial Citrus Tree Inventory, new plantings in Florida had been less than tree removals lately. New planting incentive programs were needed to encourage

[12] The US Environmental Protection Agency approved the use of the bactericides in early 2016 which are believed to suppress the bacteria that causes HLB.

Table 5. Shares of refrigerated premium orange juices (based on Kennedy, 2015).[1]

	Shares of USD value	Shares of volume sold
Tropicana Pure Premium	29%	28%
Simply Orange	22%	20%
Private label	16%	19%
Florida's Natural	11%	10%
Minute Maid Premium	7%	7%
Others	14%	16%
Total category	100%	100%

[1] Shares, estimated for the 52 Weeks Ending February 22, 2015, are for individual brand line listings, not total brand listings. Original data is from Information Resources Inc. for the 52 weeks ended February 22, 2015, covering total U.S. multi-outlet (supermarkets, drugstores, mass market retailers, military commissaries and selected club and dollar retail chains).

Table 6. Distribution channels off-trade sales juice and juice drinks (%) as of 2015 (adapted from Euromonitor, 2016).

Convenience stores	2.8%
Discounters	5.1%
Forecourt retailers	11.9%
Hypermarkets	28.9%
Supermarkets	32.7%
Independent small grocers	4.9%
Other grocery retailers	5.2%
Non-grocery specialists	1.4%
Non-store retailing	1.3%
Vending	0.8%
Internet retailing	0.6%

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growers to invest in new tree planting or the industry could disappear. The challenge for both public and private entities was to develop programs in the face of production risks posed by citrus greening.

6.1 New planting programs

Several planting programs were available in 2016 to help Florida citrus growers to reduce production risk and to protect leading citrus juice brands. The Florida Department of Citrus (Spreen and Zansler, 2016a) estimated in 2016 that 47 million additional trees were needed over the next ten years in Florida to recover the roughly 32% decline of citrus groves since 2004. Spreen and Zansler (2016b) feature the planting programs outlined next.

Announced in 2014, the USDA funded a program known as the Tree Assistance Program (TAP). The TAP reimbursed growers for replanting trees/acreage lost to the effects of citrus greening. The program reimbursed about 60% of the cost of the trees, planting cost, and land preparation costs. Based on an estimated TAP contribution of $1,230 per acre, it was expected that the program would cover up to 6.0 million trees. In 2016, according to Florida Citrus Mutual, a growers' trade organization, the TAP had paid out $6.8 million to cover the planting of more than 1 million trees (Bouffard, 2016). A number of eligibility provisions and payment constraints limited the widespread use of this program, which was beneficial mainly to small and medium-sized growers.

Minute Maid, the subsidiary of the Coca-Cola company, had implemented a program to incentivize production as well. The program consisted on a long-term contract offered to growers. The Minute Maid contract offered price floors and price ceilings in exchange for long-term growers' commitments to provide fruit to the firm. The price paid would be subject to the Florida Department of Citrus post estimate price, which captures orange prices within the State of Florida. 'A thriving Florida citrus industry is critical to helping us build our "Simply" and "Minute Maid" juice brands' commented Steve Cahillane, President of Coca-Cola Americas (Giles, 2014: 22).

In 2014, Florida's Natural announced major commitments to incentivize citrus plantings in Florida. Steve Caruso, CEO of Florida's Natural by then,[13] stated: 'We can't think of a better way to invest than with our growers... It demonstrates [our] belief in the long-term sustainability of the Florida citrus grower and will help enable the "Florida's Natural" brand to continue to grow.'[14]

6.2 Florida's Natural planting incentive program

The Florida's Natural PIP, worth $10 million to growers, was initially offered to cooperative members only, but Florida's Natural was considering the possibility to accept applications by non-members (Bouffard, 2014b). Under the Florida's Natural program, growers are given an interest free loan of $10 per tree for each orange tree planted. Growers then are asked for a 13-year commitment, three years for the non-bearing portion and 10 years of bearing life. Each year that fruit delivery is made, one-tenth of the loan is written off. After 10 years of fruit delivery, the entire loan is forgiven. Typically, healthy orange trees have a useful life of at least 30 years. The goal of Florida's Natural was to provide support for up to one million new trees planted. Due to the PIP, the cooperative expected to receive about 2 million orange boxes per year after the lag period between planting and production (orange trees start bearing fruit in the third or fourth year). This amount is roughly equivalent to the decrease of Florida's Natural processed production in 2013-14 (i.e. the Florida's Natural plant processed about 15 million boxes in 2013, down from more than 17 million in 2012-13 (Bouffard, 2014b)). To ensure the success of the program, Florida's Natural would support growers with technical service in terms of planting density, grove caretaking, fertilization, and pest control practices. Table 7 provides selected characteristics of the PIP.

[13] Stephen Caruso served as CEO for the cooperative during 22 years. His retirement as CEO was announced at the 2014 annual meeting held on November 11, 2014 (Bouffard, 2014a).
[14] Cited in Giles (2014: 22).

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Table 7. Main characteristics of the planting incentive program (PIP) by Florida's Natural (based on Bouffard, 2014b).

Total amount for the PIP	**$10 million**
Expected number of new orange trees	1 million
Expected additional production	2 million orange boxes per year
Growers' commitments	1. Sell all oranges from new trees to Florida's Natural 2. Adhere to certain standards on grove caretaking, including fertilization and pest control practices 3. Plant 270 to 350 trees per acre

Agricultural practices, as encouraged by Florida's Natural, were considered relevant for groves to remain financially viable. Prior to greening, the standard planting density was much lower than the recommendation in the PIP. Higher density was desirable particularly for the potential partial loss of harvestable oranges due to greening. Indeed, by 2016, high density planting was becoming a common practice in the overall Florida industry; Spreen and Zansler (2016a) showed that the rate of new tree plantings had slightly outpaced the rate of new acreage plantings between 2013-14 and 2014-15 seasons, suggesting higher tree densities. Minimum standards on caretaking, fertilization, and pest control practices were also important since adding fertilizers and other nutrients to the trees' roots helped to fight citrus greening (Semuels, 2015). It was estimated that the $10 Florida's Natural incentive per tree represented 75% or more of total replanting costs, including the tree, irrigation, and labor.[15]

6.3 Prices and costs at the grove level

A recent publication by the Institute of Food and Agricultural Sciences at the University of Florida (Singerman, 2016) provides the cost structure of orange production in southwest Florida. By surveying growers, this study reported that total cost production was $2,328 per acre on average, during the 2015-16 season (including management cost and investment financial costs). Furthermore, particularly horticultural practices costs have increased lately due mainly to efforts by growers to mitigate the negative effects of citrus greening. Costs in 2016 implied a break-even on-tree price varying from $6.21 to $13.30 per box depending on estimated planting densities. While on-tree prices received by growers for processed oranges had also increased lately – as reported by the Florida Department of Citrus, costs had increased faster than on-tree prices, reducing profitability for growers.

7. Florida oranges

It has been claimed that Florida produced the highest quality oranges in the world (Herndon *et al.*, 1994). Oranges from Florida were also highly valued due to the fact that were more productive for juicing compared to oranges from California, which were more appealing for the fresh market (Pearcy and Goldberg, 2000). Others preferred oranges produced in the U.S. over oranges of the leading producer Brazil, or other countries, due to safety concerns. Some chemicals used in the production process in those countries (e.g. Carbendazim, a product to control fungus and mold) were not approved for use on orange crops in the United States.

In any case, Florida oranges were highly valued by consumers, and 100% juice from Florida products were positioned in the premium segment of the U.S. market. By 2016 some, but not all juices, in the Tropicana premium product line had the tag line 'Squeezed from Fresh Florida Oranges' in its logo. The 100% juice from Florida marketing strategy by Tropicana was re-introduced in 2012 for its Pure Premium line, years after the firm started to mix in oranges from Brazil in 2007 (Brown and Washton, 2013). Florida's Natural had focused marketing and communication efforts to show customers its quality proposition by using 100%

[15] Estimated by authors assuming 225 planting density, $400 irrigation cost per acre, and $10.5 cost per tree plus planting cost.

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Florida fruit as well. Florida's Natural stated in its website: 'There is one national orange juice brand that can proudly claim to use only 100% American oranges. It is not "Simply Orange" and it is not "Tropicana". Only "Florida's Natural" never imports orange juice from overseas. Great Taste. Naturally.'[16] Figure 8 shows Florida's Natural pride on being a Florida orange producer.

8. Concluding comments

According to USDA production estimates compiled by the Florida Department of Citrus, during the 2015-2016 season orange juice supply from Florida represented about 90% of domestic production. The continuous drop of orange production due to citrus greening, however, was challenging the orange industry. Indeed, analysts were predicting that some small to medium size juice processors would shut down their operations in the near future. As one industry participant interviewed in a 2014 article commented: 'When you got an industry infrastructure that can handle 200 million boxes of oranges and you're currently producing 100 million boxes, everybody does not get to play.' (Bouffard, 2014c). In the fall of 2016, the National Agriculture Statistics Service of the U.S. Department of Agriculture announced its first projection for the 2016-17 season: Florida orange crop was expected to further decline by 12% to 72 million boxes.

Florida's Natural top management recognized the need to revisit the firm's strategy. Dr Behr and his team were concerned about how to help the cooperative's growers and to better serve Florida's Natural customers. On the supply side, the team was about to discuss possible adjustments, if any, to the Planting Incentive Program. A potential issue for the discussion was whether it was worth to expand the PIP given its costs, risk, and potential benefits. On the market side, the team knew the cooperative needed to use wisely their resources to continue competing closely against the two giant beverage firms PepsiCo and Coca Cola, which presumably had higher marketing budgets. What actions could Florida's Natural take to leverage its branding position? According to the article in The Washington Post referred before (Heat, 2016): 'juice companies that thrive with this generation [millennials] have packaging that makes it look local, tout the health benefits and understand that it is about what the brand represents, than what the product actually is.' Did Florida's Natural products have the attributes to reach the millennials niche? These and other questions were relevant for Florida's Natural and other orange juice companies by the end of 2016.

[16] "Florida's Natural commercial: Flag" video available in the company's website. Retrieved on June 26, 2016 from https://www.floridasnatural.com/who-we-are/videos.php.

Figure 8. Picture posted in Florida's Natural Facebook page.

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