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Processed Fruit Marketing Alternatives for Florida Citrus Growers[1]

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Introduction

Florida citrus growers have a number of methods they can choose for marketing fruit intended for processed utilization. These methods differ primarily by fruit quantity, pricing method, and marketing contract term. Fruit quantity specifications differ according to two basic contract types: box contracts and production contracts.

Box contracts specify the number of 90-pound weight-equivalent field boxes to be delivered, whereas production contracts specify all or a certain percentage of the fruit harvested in a defined grove. The major risk of box contracts to the seller is inaccurately estimating the amount of fruit to be sold, which may subsequently require either finding a buyer for any extra fruit produced if the contracted processor will not take the extra fruit, or purchasing additional fruit to meet the contract's requirements. To exercise this latter option, should the contract allow it, the grower would need a valid fruit dealer's license to purchase fruit needed to make the sale. If a supply-reducing freeze or other weather event reduces the fruit produced in the seller's grove by more than was committed under a box contract, the seller would be unable to deliver the required amount of fruit, and probably could not buy the extra fruit required because it would not be available in the supply-restricted environment. A *force majeure* provision in the box contract would protect this seller, but only as a percentage reduction in the state's crop. For example, if the statewide reduction in orange production were 20 percent and a seller's grove lost more than 20 percent of its fruit, the seller would still be required to deliver the difference.

Many box contracts are marketed by intermediate handlers (referred to in the industry as bird dogs), who in turn offer production contracts to their growers and sell to numerous processors, thereby reducing the risk of inaccurately estimating the fruit produced by any one grower. In fact, this ability to offer growers production contracts and processors box contracts is a key service provided by bird dogs. Production contracts place the risk on the buyer for incorrectly estimating the amount of fruit purchased. This is one reason large processors/marketers have field buyers who develop expertise in estimating fruit production. Large processors seldom cover 100 percent of their needs with production contracts prior to the start of

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harvesting, and can thus make adjustments during the processing season. Prices for fruit sold to processors are usually on a delivered-to-processing plant basis where the grower pays the hauling costs. However, in some cases prices may be on a roadside basis, where the price is specified as it is loaded onto a truck at the grower's grove and the processor absorbs the hauling cost.

Fruit pricing for the majority of Florida citrus marketing transactions can be categorized into four mechanisms:

1. Cash Market Pricing — making an outright sale of the fruit at an agreed upon price

2. Reference Pricing — receiving a fruit price based on the market price of comparative products and/or in comparative markets

3. Contract or Toll-Process Pricing — retaining ownership of the fruit and control of marketing decisions until the final product from that fruit is sold

4. Participation Program Pricing — receiving a fruit price based upon the average selling price of the final product form from the fruit over a specified period

Cash Market

About 20–30 percent of Florida's processed oranges are sold on the cash market (Table1). Cash market fruit is typically sold by forward contract. The spot cash market was popular a number of years ago because of its perceived flexibility by smaller growers. However, virtually no fruit is sold on the spot cash market anymore, although the Florida citrus processors' (hereafter referred to as the canners) average cash price is still reported as a spot and contract combined price. Forward contracting entails the grower agreeing in advance of harvest to deliver fruit to a buyer at an agreed upon price. This could be only a few weeks prior to that particular grower's harvest, or it could be many months to a year prior to the start of the harvesting season. Forward contracting for processed fruit at an agreed upon price usually consists of box contracts. At the signing of a forward contract, the buyer sometimes extends cash advances of fifty cents to a dollar per box, although the trend has been moving away from cash advances since processors prefer not to be in the lending business. When cash advances are made in today's fruit market, it is mostly by bird dogs, and even this is increasingly rare. A bird dog who does extend cash advances, however, frequently charges interest at the prime rate until the fruit payment is made and the debt has been paid back out of the fruit proceeds. If a freeze or endemic citrus greening makes Florida oranges as scarce as they were in the 1980s, cash advances may become more prevalent again. However, the trend toward larger growers has resulted in fewer growers needing cash advances to help cover working capital needs.

The advantages of forward contracting cash prices are that growers:

- are more involved in the pricing decision
- have lead time to help make a decision between fresh and processed markets
- have a home for their fruit at a known price
- receive 100 percent of the revenue at fruit delivery, which benefits cash flow

The disadvantages of forward contracting without provisions for the higher price are as follows:

- Growers may receive less income because there are no opportunities to receive a higher price if prices increase after the contract is signed.
- Box contracts makes it more difficult to deliver the contract specifications for fruit volume if the grove under contract produces more fruit than is specified in the contract (although forward cash contracts between growers and bird dogs, and volume ranges in box contracts between growers and processors can help alleviate this problem).

Notably, because of the impossibility of knowing the competitive value of fruit months in advance of harvest, forward cash contracts invariably foster a win/lose mentality where the grower feels like the winner if prices drop after the contract is signed, and the processor feels like the winner if prices subsequently increase.

Reference Pricing

A reference price is the price of the same or a similar commodity in another market. It provides a measure of relative value. Reference prices are often used as the basis for a buyer and seller agreeing on a price. For example, if a grower and processor agree to a fruit price equal to the season average of spot and contract cash prices for oranges used in Frozen Concentrate Orange Juice (FCOJ) and Single Strength Orange Juice (SSOJ) as collected from members of the Florida Citrus Processors Association (FCPA) and published by the Florida Department of Citrus (FDOC) (canner's average price), they have used the canner's average price as a reference price. Other reference prices used for the purchase and sale of Florida oranges include prices from Florida Citrus Mutual's Weekly Market News Bulletin, and bulk concentrate prices less a processing cost discount. The canner's average cash fruit price represents the average cash prices paid by virtually all Florida citrus processors. Prices are divided into spot prices, contract prices, and the average of all spot and contract prices. Intermediate and multi-year contract prices that are also published usually have not been finalized when the spot and contract prices are published, and can take more than one season to become finalized. Thus they are usually not included in the canner's average price calculations to buy fruit, except perhaps for historical perspective.

Cash market prices agreed upon during or immediately following one season to price fruit for the next season may not reflect competitive fruit prices during the actual season the fruit will be delivered. This is because there can be a carryover effect from the previous season and supply-demand factors in the current season may differ. To solve this problem, a few seasons ago the FCPA began reporting to the FDOC a post-estimate canner's average price by variety. Pre-estimate fruit was priced based on the canner's average cash price before the Florida Agricultural Statistics Service's October Florida citrus crop forecast/estimate, and post-estimate fruit was priced after the October citrus crop estimate. The result is that now there are two cash market prices published: one that represents the season weighted average of pre-estimate and post-estimate cash prices (the same as before), and another that represents only post-estimate prices. After the October estimate, pricing decisions are based on a better knowledge of fruit market conditions and prices more accurately reflect true supply and demand conditions.

The canner's average cash prices are published weekly throughout the fruit harvest season, and then in the "Final Report for Season" published in the summer following the season, showing season average prices. Season average prices for a number of years are also published several months following the season in an Annual Statistical Summary. The advantage of using the canner's average cash fruit price as a reference price is that it is another major alternative to other pricing mechanisms for pricing oranges, one which somewhat reflects growers' opportunity costs (income foregone from the next best alternative). Although the canner's average fruit price is published weekly, fruit prices should not be based upon the canner's weekly average fruit price alone. The fruit price in any given week may reflect a mix of fruit purchased before and after the October estimate, as well as fruit purchased that week, and so it does not provide a useful measure of the weekly price of fruit. Here, then, are the disadvantages:

- It reflects a residual market that can under-price fruit during surplus and over-price it during scarcity.
- The cash market can be thin enough that the lack or presence of one major buyer can create price variations to the true value of fruit.
- The canner's average cash price only reflects seven or eight months of fruit market prices rather than year-round prices.

Growers selling fruit on a canner's average reference pricing mechanism typically receive a fruit payment advance of 75–80 percent of the processor's estimated final price at the time of fruit delivery, with the balance paid after the canner's average price is known for the season. Growers with floor-priced contracts receive a fruit payment advance of the higher of the floor or 75–80 percent of the estimated price at fruit delivery.

The Florida Citrus Mutual Market News Bulletin contains weekly market fruit price quotes (commonly referred to as Mutual's fruit prices) for the varieties of citrus fruit being marketed during the time the bulletin is released. Florida citrus processors are surveyed to determine what they are paying or are willing to pay for additional fruit purchases. The bulletin, published once weekly on Mondays by Florida Citrus Mutual, shows price ranges for contract purchases. Its advantages are that it offers a good approximation of industry citrus fruit demand for unsold supplies, and it gives the flexibility to price weekly, monthly, or seasonally. Its key disadvantage is that it reflects demand for unsold fruit, not actual weighted average fruit prices. However, as a barometer of changes in weekly fruit supply and demand and as a reference price for the value of unsold fruit, Mutual's weekly quotes are a useful and valuable tool.

Using the concentrate prices less a processing cost discount to derive a fruit price is not nearly as popular as it once was. Contracts being used to price fruit based on concentrate prices represents only a small percentage of Florida's oranges. The mechanism computes the monthly average price paid by the processor for USDA Grade A 65°Bx bulk concentrate over a defined 12-month period, December through the following November. This 12-month average bulk concentrate price less a processing cost charge net of by-product returns (the cost discount net of by-product returns currently stands at about 17–20 cents per pound solids) gives a base fruit price. To pay a premium for Valencias, Early-Mids are priced at 95 percent of the base price and Valencias are priced at 105 percent of the base price. When their fruit is delivered, 80 percent of this estimated price is advanced to the growers. The balance of the fruit payment is made in December, following the calculation of final prices. For long-term contracts, the processing cost discount is adjusted annually for inflation using the producer price index. In months where no bulk concentrate is purchased by the processor, the daily average closing price for the near-term month FCOJ futures contract is used.

Because bulk orange concentrate is bought and sold year-round on a worldwide basis, competitive bulk juice values are then available on a year-round basis. In today's market, it generally costs about 15–25 cents per pound solids to process oranges into bulk concentrate, depending upon plant economies and how by-products are treated. Thus it is fairly straightforward, or transparent, to relate orange prices to bulk concentrate prices:

- This pricing mechanism adapts easily to provide premiums for Valencias.
- It does not over- or under-price during market extremes.
- Reference pricing allows growers to know how their fruit values are behaving and they can thus more easily project and budget future fruit revenues since FCOJ futures prices are published daily and are highly correlated with bulk concentrate cash prices.

The main disadvantages to the concentrate-based pricing mechanism are that price is determined by world supply and demand rather than the specific actions of a processor/marketer or grower, and FCOJ futures prices often trade at a discount to bulk concentrate prices.

Contract or Toll Processing

Contract or toll processing entails a juice marketer, grower, or any entity making an agreement with a processor to process fruit into bulk concentrate or NFC for a fee. Although a relatively large amount of fruit was toll processed from the late 1990s up until a few seasons ago, declining fruit volumes have freed up available processing capacity at branded processors' plants that use toll-processing services, thereby reducing the industry's toll processing needs. As a result, increasingly less fruit is being toll processed.

Toll-processing fees are typically based on processing costs plus some profit margin. In addition to processing costs, other costs that may be incurred by the processor include storage, blending, handling, inspection fees, etc. Depending upon what functions the toll-processing agreement covers, producers who toll process fruit into bulk juice may incur other costs in addition to the toll-processing fee before the product can be delivered as USDA Grade A juice.

Toll-processing agreements specify a number of variables such as the processing fee, amount of fruit processed, a fruit delivery schedule, quality specifications for juice produced, how fruit taxes and fees are paid, who gets revenues from by-products, payment terms, etc. (Table 2). Most toll processing for Florida citrus is done either by branded citrus juice processors who are using other plants to toll process their fruit because they no longer operate citrus processing plants, or by brands that do own plants to augment their facilities. It is rare for growers to utilize toll processing, unless they are transitioning from owning a plant to just growing fruit, or from only growing fruit to growing and processing fruit.

The advantage of toll processing is that it enables a juice brand to produce and sell citrus juices without requiring a capital investment in processing facilities. The disadvantage is that toll processing does not give the marketer as much control over juice quality as one might prefer.

Participation Pricing

Mechanisms for participation pricing emerged from deferred pricing in grower-owned cooperatives where groups of growers invested capital to build fresh packing and/or processing facilities to extend their control into packing/processing and marketing the final product. When cooperative members delivered their fruit, they were paid only a portion of estimated returns. All fruit of the same variety and intended for utilization in the same end-product was pooled together and sold over a defined marketing period, where revenues and costs were accumulated. At the end of the pool's marketing period after the products had been sold, grower members were paid the balance due to them based on the net revenues of the pool less the fruit price advanced at the time of fruit delivery. This type of deferred payment removed much of the risk of paying more for the fruit than the revenues returned from the sale of final products, and it fit well financially with grower-owned cooperatives, where all proceeds were distributed back to member/owners. Cooperatives used to be a popular and viable way for growers to market participation fruit for processing. However, there are currently only two grower-owned citrus processing cooperatives, and only one of these processes and markets oranges. The other no longer has a processing plant and now contracts or toll processes its grapefruit.

The volatile nature of fruit prices coupled with inherent commodity price risks led private fruit processing companies to modify cooperatives' deferred pricing into participation contracts. This enabled the processors to pay for their fruit after selling the final product, thereby eliminating the risk of buying in a high-priced fruit market during the season and selling into a lower-priced juice market later. Participation programs with private firms differ from those with cooperatives in that growers do not own the packing, processing, and/or marketing facilities; profits are kept by the firm rather than returned to growers. The price growers receive for their fruit under private firms' participation contracts are computed with a formula based on the firms' juice sales revenue less applicable costs and a profit margin, as described in Table 3. The grower receives an advance payment at the time of fruit delivery of 75–85 percent of the estimated participation price calculation, and receives the balance of the fruit returns after the participation price is calculated, which can be several months to over a year after fruit delivery. Some participation programs make several smaller, more frequent fruit payment advances at and following fruit delivery. For example, one participation program pays an initial advance at the time of fruit delivery, followed by payment advances in October and December, and the balance in February.

Participation fruit agreements are usually production contracts. Consequently, firms rely heavily on their fruit buyers working closely with growers in order to develop accurate production estimates to help balance the firms' sales with estimated fruit purchases, with an eye towards keeping the fruit harvesting and plant receiving processes working smoothly. The advantages of participation programs are that growers:

- are guaranteed a capable marketer
- no longer have to worry about timing fruit deliveries to get the highest price since prices are determined over an entire marketing period spanning a number of months to a year

- can benefit from relationships with processors/marketers in terms of keeping abreast of market developments, salvaging fruit after a freeze, etc.

The disadvantages of participation programs are that growers:

- must turn over all marketing and pricing decisions to processors
- are the residual claimants of value and thus bears all risks of price swings
- must wait until the end of a specified marketing period to receive the final 15–25 percent of their fruit prices

Participation pricing programs were very popular in the Florida citrus industry from the 1950s onward, accounting for about 60–75 percent of the fruit bought and sold. Much less popular in recent years, participation pricing currently represents less than one-fourth of the fruit traded. The reason for this is probably the lack of transparency—the participation pricing mechanism uses a firm's juice selling prices to arrive at a fruit price, and although these are audited for accuracy, they are still considered proprietary and thus confidential, being neither published nor made available to growers. This makes them much less transparent than a reference pricing mechanism, which uses published prices to arrive at a fruit price.

Risk-Stabilizing Fruit Marketing Methods: Multi-Year and Long-Term Contracts

Multi-Year Contracts

The principal characteristic of multi-year and long-term contracts is that they contain pricing mechanisms that entail the buyer covering price risks for the grower as a way to remain competitive in obtaining scarce fruit. Multi-year contracts typically have a term of three and sometimes five years, and are much more prevalent in today's citrus industry than long-term contracts, which cover 10–15 years. The same pricing mechanisms described in this paper can be and are used in multi-year contracts. Thus reference pricing, toll pricing, and participation pricing are all used in multi-year contracts. But the most prevalent pricing mechanism is the canner's average or the post-estimate canners' average price. The main distinguishing characteristic of a multi-year fruit contract is the existence of a guaranteed minimum, or floor price, which is the contract's price risk-covering component. This floor price will usually provide that the grower will receive the higher of the pre-established floor or the canner's average price. Typically, only the brands can offer floor prices because it requires the strength of their marketing program to cover the risk of floor prices. However, some bulk processors offer floors, but only when their branded customer provides a juice contract that covers the processor's risk.

Floor prices are negotiated between buyer and seller, although buyers typically offer floor prices that growers then accept or reject. Floor prices may be below $1.00 per pound solids, or much higher, as happened in the 2006/07 season when floors of $1.50–$1.70 per pound solids were part of multi-year contracts. These extremes are because floors are often negotiated at or below long-term expected fruit price levels. In an environment of abundant fruit, floor prices will be relatively low because expectations are for low fruit prices. Conversely, in an environment of expected scarce fruit, floor prices will be much higher because future prices are expected to be higher. In some cases, a floor-priced contract may also have a ceiling price, which is the maximum price a grower can be paid for the fruit under that contract in any single season while it is in effect. Tradeoffs can sometimes be negotiated where a grower receives a higher floor price in exchange for a lower ceiling price. For example, a grower may get a higher floor if the grower gives up some of the price rise—say, the first five cents per pound solids above the floor, or if the grower agrees to 95 percent of the price rise above the floor. In these types of agreements, buyers are sharing risks with growers, rather than covering risks, such as when growers receive the entire rise to the market price.

Long-Term Contracts

Long-term contracts became popular during the supply-reducing, freeze-riddled decade of the 1980s.

Although a few are still in effect, long-term fruit contracts are rare in today's citrus industry. This is probably because of the relative abundance of fruit from the early 1990s until only a few seasons ago. Long-term contracts are described in this article because they may become prevalent again due to citrus greening.

Long-term fruit contracts are partnership marketing agreements between growers and branded citrus processors. Bulk processors have not offered long-term contracts because they cannot manage the price risk.

Growers who enter into such contracts are usually, but not always, large, well-capitalized agribusiness firms (smaller growers with long-term contracts usually are growers who provide unique or rare varieties of fruit that the processor wants). Their focus of long-term contracts is on overall profitability and stable cash flow. Marketing is viewed as central to their overall success, and both parties are interested in long-term business relationships. Processors who enter into long-term fruit procurement contracts define their role as juice marketer rather than processor. They recognize that control of product availability can be accomplished as well by business relationships as by ownership of grove assets, thus freeing capital for use in marketing. They also view growers as potential partners that can provide consistent stable supply streams to support their marketing objectives.

The foundation of long-term contracts is the recognition that the grower is not only selling a commodity, nor is the processor/marketer only buying a commodity. Instead growers:

- provide high-quality fruit
- assume the risks of producing the commodity
- commit capital to enable control and utilization of land and other production resources
- desire a viable market for their crops
- expect a market price that enables making a competitive profit

So too, processors/juice marketers:

- desire high-quality fruit
- desire a stable, dependable source of supply
- expect to pay a competitive market price
- want to avoid risks of producing fruit
- want to avoid expending the capital required to own groves and produce fruit

The similarity of these objectives can lead to mutually beneficial long-term contracts. Ultimately, long-term contracts and their associated growers/partners become a juice marketer's "grove division" without the asset risk to the juice marketer. Growers are assured a captive market for their fruit.

Long-term contracts are tailored to each specific grower and processor/marketer, but most focus on five key areas of interest to both: term of contract, quantity of fruit, pricing mechanism, fruit release clause, and information sharing.

Table 4 presents a checklist of the key elements that a sound contract for processed fruit should contain. In some cases, contracts may contain more elements than this, and in other cases, less. Obviously, fruit quantity and price are the two most important elements.

Term of Contract

Long-term contracts vary anywhere from 10 to 20 years, but most commonly are 10–15 years. A 10–15-year period represents the planning horizon for which most groves are evaluated. At the end of this term, there is an exit window, requiring a one to two year notification to terminate the contract. Otherwise, the contract renews automatically on a year-to-year basis until either renegotiated for another 10- or 15-year (or shorter) term, or terminated. This exit provision provides time for both parties to make plans if necessary to replace the supply or market for the relatively large volume of fruit these agreements represent. Exit provisions also include a clause that states how the sale of the grower's groves covered by the long-term contract will affect the future of the contract. Usually in the event of such a sale, the juice marketer has the option to continue the contract or terminate it, and the purchaser of the groves must comply with the long-term contract if the juice marketer elects to continue it or find a market for the fruit if the juice marketer terminates it.

Quantity of Fruit

Contracts with a quantity of fruit emphasis are typically production contracts, and usually represent parties with 1,000 acres of grove land or more. It is usually larger growers with substantial acreage (3,000 or more acres of grove land) that seek these contracts, making them attractive partners for juice marketers. Larger growers enable the processor to secure large volumes of fruit on a long-term basis with relatively few growers, which simplifies the process of managing these intricate, custom-designed contracts.

Pricing Mechanisms

Pricing mechanisms are designed to share and stabilize risk between grower and marketer, utilizing the strengths while compensating for the weaknesses of each. For example, the contract may contain a floor price at $1.20 per pound solids with a rise to the processor's participation price, or if it were to be agreed upon in today's industry, the post-estimate canner's average. When prices rise above a certain level—say, $1.50—the grower and processor may share the balance of the rise on a 50/50 basis. In another situation, after the price rises above the floor, the grower may receive 95 percent of the rise. In still another example, instead of 95 percent of the rise above the floor, the grower may receive all of the rise except five cents of the price per pound solids. This enables the processor to get fruit at a "discount to market price" when fruit is scarce and the grower to get a (floor) price that covers production and harvesting costs, plus provides some profit. For groves not yet planted, the pricing mechanism in a long-term contract will also be designed to help the grower obtain financing to plant and develop the grove by reducing price risk and stabilizing cash flow.

Fruit Release Clause

This provision releases a percentage of the fruit, typically 10–15 percent, covered by the long-term contract for sale to any other buyer and in another market on a year-to-year basis. Timely notification is required—usually several weeks prior to the start of harvest each year. While this enables growers under long-term contract to pursue a number of market alternatives with the portion of fruit that can be released, it is usually utilized to provide the flexibility to sell fruit on the fresh market.

Information Sharing

A useful component of long-term contracts is information sharing, providing for both the grower and the juice marketer to share information on a regular basis that is pertinent to their business interests. Growers share information about planting densities, crop forecasts, fruit quality, harvesting issues, etc., while juice marketers share information about processing conditions, juice yield, culls, and market and price outlook. Both parties jointly develop a pre-season fruit harvesting and delivery schedule and update it weekly throughout the harvest season. This improves the efficiency with which growers can manage harvesting activities and with which the juice marketers can operate their processing plants.

Potential Issues for the Future and Concluding Remarks

Florida citrus growers currently have several options available for pricing their fruit. In order of amount of fruit purchased and sold, reference pricing, including multi-year contracts with floor prices, ranks first, followed by cash sales, toll processing, and traditional participation. All involve tradeoffs between risk and gain. While today's pricing mechanisms are increasingly more transparent and easier to track and verify than in the past, a number of questions become apparent as the industry moves into the future:

1. What impact will fewer processors competing for fruit have on fruit prices and/or pricing mechanisms if no cure for greening is found?

2. Will new pricing mechanisms emerge that reward growers for minimizing the impact of greening on their production and/or culling greening-infected fruit in the field?

3. Will long-term (10–15 years) fruit contracts return as a way to lock up scarce fruit supplies?

4. Will floor prices and/or pricing mechanisms be designed to insure that growers can cover the costs to battle greening and also make a competitive return on their investment?

The answers to these and as yet unknown questions and challenges, coupled with how those who commit the capital and take the risks to bring fruit to processors and juice to consumers meet those challenges, will be major factors in the shaping of the future of Florida's citrus industry.

Table 1. Florida oranges sold on the cash market

Season	Oranges Processed	Oranges Sold on Cash Market	Portion Sold on Cash Market	Price
	(Thousand Boxes)		(Percentage)	($/pound solids)
2008/09	155,103	27,813	17.9	1.00
2007/08	166,009	43,015	25.9	1.40
2006/07	123,224	46,933	38.1	2.14
2005/06	142,165	48,242	33.9	1.33
2004/05	142,836	39,038	27.3	0.91
2003/04	233,804	57,544	24.6	0.71
2002/03	194,579	38,034	19.5	0.94
2001/02	221,843	40,494	18.3	0.84
2000/01	213,635	35,967	16.8	0.76
1999/00	224,289	49,144	21.9	0.91

Note: Includes oranges sold on the spot/cash and contract markets combined. Oranges sold on multi-year contracts and participation programs are not included.
Source: Florida Department of Citrus and Florida Citrus Processors Association, Statistical Summary, various seasons, Lakeland, FL.

Table 2. Key elements of orange toll-processing agreements

Element	Description
Toll fee in dollars per pound solids	Amount paid to processor for toll processing fruit under the agreement
Fruit quantities to be processed	Boxes of fruit processed under the agreement
Fruit delivery schedule	Days each week fruit will be delivered daily
Storage costs	Dollars per pound solids for storing toll-processed juice in tanks or drums
Product specifications	
Pulp level	Fruit pulp allowed in juice in grams/liters
Bacteria	Specified as colony forming units/milliliters
Oil level	Percent of peel oil allowed in juice
Brix	Sugar content of juice
Defects	Things that detract from juice like black specks
Blending specifications	All expressed in numerical values
Color	Degree of orange color in juice
Ratio	Sugar to acid ratio, optimum is 13:18
Storage temperature	Measured in degrees Fahrenheit
Flavor	A quantitative measure of taste
Overall score	The numerical total of these specifications
How by-product returns are divided between the parties	Percent of revenues from sale of by-products that goes to the toll processor and the fruit owner
Juice delivery schedule	Days each week juice will be delivered and amount delivered daily
Payment of fruit taxes and fees	Who pays Department of Citrus advertising tax, Florida Citrus Mutual's tax, etc.
Payment terms	How many days after processing fruit does fruit owner have to pay-toll processing and storage fees
Total computed from all elements of the contract	Amount paid to the toll processor for processing the fruit under the agreement

Note: Toll processing is the processing of fruit not owned by the toll processor into bulk concentrate or bulk not-from-concentrate (NFC) for a fee.

Table 3. Key elements of a fruit participation price formula

Element	Description
Juice sales revenue minus	Sales of juice by the processor or brand
Distribution costs minus	Costs of transporting packaged juice to market
Finished goods warehousing costs minus	Costs of storing packaged juice
Packaging costs minus	Costs of putting juice in containers
Work-in process bulk juice inventory costs minus	Bulk juice stored in tanks or drums
Processing costs minus	Costs of processing fruit into bulk juice
General and administrative (G&A) costs minus	Costs for processor's administrative functions, interest, etc.
Percentage of sales as profit equals	Company sales multiplied by a percentage the company keeps as profit, usually 3–6 percent
Fruit participation revenue divided by pounds solids in participation pool	Revenues minus the previous costs divided by the pounds solids from all fruit sold under that participation price formula
Participation price per pound solids	Dollars per pound of solids for fruit
Fruit participation price per pound solids minus	Dollars per pound of solids for fruit
Advance at time of fruit delivery equals	Usually 75–85 percent of expected fruit price
Balance due grower	The amount in dollars paid to the grower

Notes:

1. Growers are advanced 75–85 percent of the estimated participation price at the time they deliver their fruit. The balance is paid after the marketing period, when the participation calculation is completed.
2. Bulk processors with a participation program follow the same principle as this example, but do not have costs or deductions for finished goods warehousing or packaging.
3. The above calculations are often performed separately covering different marketing periods for Early-Mids and Valencias.
4. For grower-owned cooperatives, there is no profit deducted as this is returned to grower-owners as a return on their plant investments.

Table 4. Important elements of a processed-fruit contract*

	Contract Elements
1.	Fruit purchaser should hold a valid fruit dealer's license. This helps ensure purchaser has ability to pay for the fruit.
2.	Verify that the person you are dealing with is an agent for the buyer.
3.	In box contracts, the number of boxes should be specifically defined. In production contracts, the exact location of the grove(s) from which the fruit will be harvested and the percent of fruit in the grove(s) covered by the contract should be defined.
4.	Contract should specify how the grower will be paid (i.e., per pound of juice solids, per gallon of juice, etc.).
5.	Make sure the fruit varieties covered by the contract are specified.
6.	Specifications for Brix and ratio that differ from USDA minimums should be reasonably achievable.
7.	Contract should specify the fruit location the transport haul is based on for determining the price (e.g., loaded on a truck at roadside near grower's grove, delivered to a plant, etc.).
8.	The exact date or dates when payments will be made should be specified.
9.	Cash contracts should specify the exact price or prices.
10.	Participation contracts should specify the beginning and ending dates of each pool, define and describe the elements of the pricing formula, and define what returns if any will be provided from the sale of by-products.
11.	Reference pricing mechanisms should specify the reference price that is used, the period of time it covers, and if the reference price is not a fruit price, how it will be converted to a fruit price.
12.	If the contract has a price-rise provision, make sure it describes how the rise will be determined.
13.	If a grower receives a cash advance before final payment, contract should specify how and when the advance will be deducted from final fruit price and payment, and what interest rate if any will be charged for the cash advance.
14.	Contract should specify either a fruit-picking and delivery schedule, or how and when the parties will develop a picking and delivery schedule.
15.	If contract provides picking and hauling services, the rates or how the rates will be determined should be specified.
16.	The accounting of harvested fruit should be summarized with field tickets and online scale tickets with USDA inspection certificates.
17.	The contract should have a *force majeure* provision so that if a freeze, fire, storm, drought, labor shortage, or any other cause beyond either the grower's or buyer's reasonable control interrupts business to the extent that the affected party cannot perform all its obligations under the contract, then to that extent the party so affected will be excused from performance. This provision should provide for the grower to refund any applicable cash advances for undelivered fruit to the buyer. For growers with box contracts, *force majeure* provisions should specify how the state total crop reduction will be used to determine the amount the grower is excused from delivering to the buyer.
18.	Where applicable, provisions for the buyer to deduct and pay, on the grower's behalf, citrus-advertising taxes and other applicable taxes and fees, should be specified.

* Disclaimer: The material and content presented in this table is in summary form and is provided for informational purposes only; it does not constitute professional legal advice and should not be relied upon as a substitute for such. Consult with an attorney before signing any contracts.
Sources: Interviews with Florida fruit processors and buyers, information provided by Florida Citrus Mutual, and over ten years of experience buying fruit for a major branded juice marketer and a major bulk processor.