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THE POTENTIAL IMPACT OF CHANGING
GRAPEFRUIT GRADING ON GROWER'S
REVENUE

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The Potential Impact of Changing Grapefruit Grading on Grower's Revenue

The attributes used to define grades should be related to the demand for the product. For Florida fresh grapefruit, the external and internal qualities are important. Current U.S. standards for grades of Florida grapefruit deal only with external qualities of the fruit such as discoloration, cosmetic defects (e.g., viruses, buckskin, and wormy), injuries and damages (e.g., skin breakdown, thorn scratches, scars, and sunburn). These grade requirements have nothing to do with the minimum internal qualities specified as the minimum maturity standards by the Florida Citrus Rule section 20-44.001.

The Tuxedo Fruit Company proposal recommends a reduction in the number of grades within the U.S. No. 1 category (i.e., to combine U.S. Fancy, U.S. No. 1, U.S. No. 1 Bright, U.S. No. 1 Golden into Fancy and Choice) *and* establish new minimum maturity levels (e.g., a minimum ratio of 8.5 for all grapefruit throughout the season). The change in the number of grades within the U.S. No. 1 category would make grading system more compatible to actual practice in California/Arizona, Texas, and some of the companies in Florida. The proposed increase in the minimum ratio requirement in maturity standards would make grapefruit more acceptable to consumers by eliminating early season low ratio grapefruit shipments.

Table 1 presents the FOB grapefruit prices for the seasons from 1992-93 through 1994-95. Note that California/Arizona prices are the average price quotations provided by Sunkist. Actual FOB prices could have been lower than these quotations. In general, large grapefruit commanded higher prices than small grapefruit and the price differences between Sunkist grade and Choice grade are positively related to grapefruit sizes. The price differences range from less than one dollar per carton for 56 size grapefruit to more than two to three dollars for 32 size grapefruit. Note that the FOB prices for 27 size grapefruit are lower than those for 32 size grapefruit. The grading standards

for California/Arizona grapefruit are purely dependent on the exterior appearance and have nothing to do with interior quality or maturity standards (such as ratio) of the fruit. For comparison, simple average FOB prices by fruit size for both Interior and Indian River colored grapefruit for the same period are also presented.

Table 2 shows historical Texas grapefruit FOB prices by grade for the same period. The price spread between Texas Fancy grade and Choice grade range from less than a dollar to more than four dollars depending on size of the grapefruit and the shipping season involved. In general, the (simple) average prices of Texas Fancy grade grapefruit are higher than the (weighted) average Florida FOB prices, and the (simple) average prices of Texas Choice grade grapefruit are lower than the (weighted) average Florida FOB prices. Also, as shown in Tables 1 and 2, during the 1993-94 and 1994-95 seasons, by size, the (simple) average Florida grapefruit FOB prices were lower than the Texas Fancy FOB prices and higher than the Texas Choice FOB prices. This may be an indication that if Florida had had the same two grades as Texas for its U.S. No. 1 grapefruit during these seasons, the prices for the Choice grade might have been lower and the prices for the Fancy grade might have been higher than the (weighted) average FOB prices shown in Table 1.

In order to estimate the potential impact of the Tuxedo Fruit Company proposal on the Florida grapefruit industry, historical grapefruit shipment information by grade for the most recent five seasons is presented in Table 3. The shipment data in Table 3 show that, prior to the 1994-95 season, the four top U.S. No. 1 grades accounted for less than 90%, 98%, and more than 99% of domestic, Canadian, and offshore fresh grapefruit shipments, respectively. During the 1994-95 season, these same four top U.S. No. 1 grades accounted for 98% of total domestic shipments and close to 100% of total Canadian and offshore shipments. Another noticeable change in the shipment

pattern is a decrease in domestic shipments of Improved No. 2 and U.S. No. 2 grapefruit during the 1994-95 season.

This change in domestic market shipment patterns by grade was due to the adoption of an amendment of Florida Citrus Rule section 20-44.001 by the Florida Citrus Commission in September 1994. The amended rule sets the minimum grade requirement for all fresh seedless grapefruit to U.S. No. 1 and became effective on November 30, 1994. The only exception is that seedless grapefruit sold at roadside retail stands directly to consumers not for resale may be U.S. No. 2, provided that the fruit was produced on seller's own groves or purchased directly from a grower. The changes in domestic shipment patterns during the 1994-95 season indicate that the Florida grapefruit industry is flexible enough to react to a change in minimum grade requirement quickly. Therefore, if it is necessary, the Florida grapefruit industry should be able to deal with the proposed grade changes by Tuxedo Fruit Company.

Tuxedo Fruit Company's proposal would split U.S. No. 1 grade (which accounted for 96% of total 1994-95 shipments) into Fancy and Choice grades. In order to estimate the impact of the Tuxedo Fruit Company proposal, one needs the information about the grading standards and potential shipment volumes for these two proposed grades. Unfortunately, there is no proposed grading standard information available nor potential volumes for the proposed grades.

According to the Division of Fruit and Vegetable Inspection in Winter Haven, the maturity statistics for fresh grapefruit are not readily available and there are only two years of data. However, the Division has published weekly Brix and acidity information for processed grapefruit. It is believed that the maturity statistics for grapefruit delivered to the processing plants are closely related to those for fresh grapefruit during the same week. Therefore, ratio data for processed grapefruit were used

as an approximation for fresh grapefruit ratios. Following, the impact of changing the minimum ratio requirement for grapefruit maturity standards on growers' revenue is examined.

Table 4 shows the weekly ratio statistics for the period from the 1990-91 through 1994-95 season. In general, imposition of a 8.5 minimum ratio would probably have postponed the beginning of a season from late September or Early October to mid-November (e.g., the 1991-92 and 1992-93 seasons) or even to the end of December (e.g., the 1993-94 season). The delay of the beginning of a season could have had an adverse effect on export markets, providing our competitors (e.g., Israel, Cyprus, California, Texas, or even Cuba) a window to supply these markets.

Table 5 shows the total shipments of U.S. No. 1 Golden and better grades shipments for the 1990-91 through 1993-94 season, and the total shipments of U.S. No. 1 and U.S. No. 1 Bright for the 1994-95 season, for two ratio categories -- less than 8.5 ratio versus more than 8.5 ratio. For most seasons, the lower ratio U.S. No. 1 and U.S. No. 1 Bright grapefruit accounted for about 20% of the volume of total domestic, Canadian, and offshore shipments and about 24% of the volume of total U.S. domestic and Canadian shipments. In the following, actual grapefruit shipment and price information for the seasons from 1992-93 through 1994-95 will be used to demonstrate the impact of the proposed grading and maturity standard changes on growers' return.

Assumptions:

1. At the present time, there is no information available to differentiate Fancy grade from Choice grade grapefruit within the regular U.S. No. 1 grade. We assume that the grading standards can be agreed upon by the Florida citrus industry collectively.

2. FOB price for Fancy grade is assumed to be \$1.00 higher than the price for Choice grade,

and the FOB price for Choice grade is assumed to be the same as those reported by Florida Citrus Mutual. This price premium can be considered as the maximum benefit attainable under the proposed grading system. Note that the FOB price differentials between California's Sunkist and Choice grades or between Texas' Fancy and Choice grades are between \$1.00 and \$3.00, depending on the size of fruit. In other words, we assume that consumers are willing to pay a premium for Fancy grade grapefruit over Choice grade grapefruit. Note that the published Florida FOB prices are the weighted average of U.S. No. 1 grapefruit of different grades and sizes, and, as such, the FOB price of proposed Choice grade grapefruit could have been lower, and the FOB price of proposed Fancy grade grapefruit could have been higher, than these weighted average prices.

3. All offshore shipments met Fancy grade requirements and maturity standards. Therefore, the following analysis pertains to domestic and Canadian grapefruit shipments.

4. Two thirds of domestic and Canadian U.S. No. 1 Golden and better grades shipments are assumed to meet Fancy grade requirements, and the remaining one third is assumed to meet Choice grade requirements.¹

5. It is assumed there is no additional cost involved in grading and sorting, in changing from current grading system to proposed grading system.

6. The estimated revenue change due to the proposed grading system is assumed to be passed onto growers in full.

Analysis

¹Mr. John Scotto with the Tuxedo Fruit Company indicated these proportions were his company's averages.

Four scenarios were analyzed.

Scenario 1. The FDOC promotes only Fancy and Choice grapefruit,² but allows grapefruit shipments with less than 8.5 ratio as long as they meet the current maturity standards (the price for less than 8.5 ratio grapefruit was assumed to be the same as that for the choice grade).

Under this scenario, there would be shipments which do not meet the minimum 8.5 ratio requirement during early months of the season. Unless there is no demand for these low ratio grapefruit, the image of Florida grapefruit will still be tarnished by these low ratio grapefruit.

Under the study assumptions, the revenue gain equals two thirds of the higher than 8.5 ratio volume times \$1.00 (see Table 7 for grapefruit shipment volume under this scenario). If the grading system were ineffective (i.e., shippers were unable to convince retailers to pay the assumed one dollar difference between Fancy and Choice grades), then there would be no change in revenue.

Scenario 2. All grapefruit shipments must have a 8.5 ratio or higher.

Under this scenario (1) grapefruit shipments before mid-November might not occur, allowing our competitors to enter the market without any resistance before mid-November. (2) There may be either a smaller volume of grapefruit to ship at higher prices or the same volume of grapefruit but shipped within a shorter period and at depressed prices. (3) When a smaller volume is shipped, the low ratio grapefruit may be processed into juice, which may depress juice prices (we will not analyze this scenario).

In the following analysis we additionally assume: (1) the same total volume of grapefruit

²Note that this promotional practice is similar to brand promotions, which may reduce the demand for grapefruit that do not meet the minimum 8.5 ratio. In addition, there is an equity problem about the use of citrus trust fund in this manner.

shipments is be shipped in a shorter time period due to the minimum ratio requirement; (2) the early season grapefruit, those that did not meet the minimum ratio requirement, are shipped after its ratio reaches 8.5, and that the amount of fresh grapefruit which is reallocated is proportionally distributed over the later months of the season based on the relative weekly volumes actually shipped; (3) the increased volume of grapefruit in the later months of the season depresses FOB prices and causes revenue losses; and (4) the delay in grapefruit shipment, does not affect Florida's ability to sell grapefruit in domestic and foreign markets.

Based on the above assumptions, the change in growers' revenue equals

(estimated FOB price with reallocation) x (shipment under new grading system and minimum ratio requirement) - (actual FOB revenue)

The result of this scenario shows that the Florida citrus industry could benefit from the proposed grading system and maturity standard (i.e., minimum ratio requirement) changes if grapefruit reaches minimum ratio requirement early in the season, and it could suffer losses if grapefruit matures late in the season (see Table 6). The figures in the last column of Table 6 show the economic impact under this scenario if retailers were unwilling to pay the assumed one dollar premium of Fancy grade grapefruit over Choice grade grapefruit. In other words, if the Florida grapefruit industry is unable to collect the assumed price premium for Fancy grade grapefruit, then this scenario results in a loss of more than ten million dollars per season.

Scenario 3. All grapefruit shipments must have a minimum of 8.5 ratio before the end of December; and a minimum of 9.0 ratio during January and February; and a minimum of 9.5 ratio after the end of February (a three tiered system).

No economic impact will be estimated for this scenario because the reallocation of the grapefruit which did not meet the minimum maturity standards and its impact on FOB price become difficult to estimate. Therefore, only the percentage of the grapefruit shipments affected by this change in maturity standards are presented (see Table 7); and again, only domestic and Canadian shipments are considered. Results show that a higher per cent of the grapefruit shipments would be affected than under the assumptions of scenario 2.

Scenario 4. All grapefruit shipments must have a minimum 9.5 ratio.

Table 7 shows the percentage of the grapefruit shipments affected under this scenario. Note that under this scenario, no grapefruit could have been shipped in the 1995-96 season (as of the February 25, 1996).

In general, the requirement of a minimum ratio of 8.5 had the least impact on grapefruit shipment among scenarios 2, 3, and 4.

Table 1. Historical California/Arizona and Florida grapefruit FOB prices, 1992-93 through 1994-95*

	FOB Price by Size of Fruit (\$/carton)						Weighted Average
	27	32	36	40	48	56	
California/Arizona (Ruby Grapefruit)							
1992-93							
Sunkist	7.05	7.09	6.57	6.49	6.17	5.45	
Choice	5.42	5.46	5.30	5.39	5.20	4.87	
Diff.	1.63	1.63	1.26	1.09	0.97	0.58	
1993-94							
Sunkist	7.82	9.00	7.68	7.21	6.50	5.79	
Choice	5.47	5.82	5.57	5.41	5.22	4.69	
Diff.	2.35	3.18	2.10	1.79	1.28	1.10	
1994-95							
Sunkist	8.09	8.32	7.45	6.68	6.05	5.68	
Choice	5.73	5.77	5.45	5.36	5.27	4.73	
Diff.	2.36	2.55	2.00	1.32	0.77	0.95	
Interior Colored Grapefruit Average FOB Prices							
1992-93	7.26	6.22	5.59	5.23	4.91	4.60	5.54
1993-94	6.40	6.04	5.66	5.33	5.15	4.86	5.67
1994-95	5.55	5.24	5.07	5.00	5.02	4.85	5.10
Indian River Colored Grapefruit Average FOB Prices							
1992-93	8.06	6.83	6.04	5.56	5.24	4.84	6.14
1993-94	6.69	6.32	6.00	5.66	5.44	5.02	6.10
1994-95	5.58	5.43	5.41	5.37	5.51	5.37	5.36

*California/Arizona FOB prices are simple averages based on incomplete price quotation information provided by Sunkist; actual price could have been lower (summer grapefruit FOB prices were not included in calculating the averages). Florida FOB prices are weighted averages for U.S. No. 1 grade grapefruit.

Table 2. Historical Texas grapefruit FOB prices, 1992-93 through 1994-95

	Texas (Ruby Grapefruit)					Florida Colored	
	27	32	36	40	48	Interior	Ind. River
-----\$/carton-----							
Ruby							
1992-93						5.54	6.14
Fancy	10.29	10.72	9.30	6.67	6.07		
Choice	8.15	7.63	7.07	5.91	5.52		
Diff.	2.14	3.09	2.23	0.76	0.55		
1993-94						5.67	6.10
Fancy	9.93	8.78	7.72	6.95	6.25		
Choice	5.99	5.99	5.84	4.95	4.81		
Diff.	3.94	2.79	1.88	2.00	1.44		
1994-95						5.10	5.36
Fancy	8.31	7.03	6.11	5.50	5.19		
Choice	5.56	5.39	4.81	4.36	4.19		
Diff.	2.75	1.64	1.30	1.14	1.00		

Rio							
1992-93						5.54	6.14
Fancy	11.29	12.25	10.63	7.67	7.02		
Choice	9.35	8.94	8.31	6.79	6.32		
Diff.	1.94	3.31	2.32	0.88	0.70		
1993-94						5.67	6.10
Fancy	11.00	9.78	8.35	7.49	6.90		
Choice	6.30	6.30	6.17	5.22	5.09		
Diff.	4.70	3.48	2.18	2.27	1.81		
1994-95						5.10	5.36
Fancy	10.16	8.71	7.34	6.63	6.26		
Choice	6.53	6.47	5.50	4.93	4.70		
Diff.	3.63	2.24	1.84	1.70	1.56		

Source: Dr. Merritt Taylor, Texas Agricultural Extension Service, Texas A&M University at Weslaco, Texas.

Table 3. Percentages of Florida grapefruit shipment by grade, 1990-91 through 1994-95

Season	U.S. No. 1						U.S. No. 2			Tree Run
	Fancy	#1	#1 Bright	#1 Golden	#1 Bronze	#1 Russet	Improved #2	#2	#2 Russet	
Domestic										
90-91	0.00	29.44	0.00	56.75	0.02	0.04	8.78	4.94	0.01	0.03
91-92	0.00	31.60	0.04	51.16	0.00	0.27	14.38	2.51	0.04	0.01
92-93	0.00	43.49	0.13	44.77	0.00	0.00	9.43	2.16	0.02	0.00
93-94	0.00	52.52	0.30	34.12	0.00	0.01	10.99	2.03	0.04	0.00
94-95	0.00	94.82	0.04	3.06	0.00	0.00	1.55	0.47	0.05	0.00
Average	0.00	50.38	0.10	37.97	0.00	0.06	9.02	2.42	0.03	0.01
Canada										
90-91	0.00	29.80	0.00	68.08	0.02	0.00	1.54	0.55	0.00	0.00
91-92	0.00	36.76	0.03	59.87	0.00	0.02	3.30	0.03	0.00	0.00
92-93	0.00	51.83	0.05	46.46	0.00	0.00	1.66	0.00	0.00	0.00
93-94	0.00	62.11	0.29	36.19	0.00	0.00	1.40	0.00	0.00	0.00
94-95	0.00	95.21	0.11	4.37	0.00	0.00	0.30	0.00	0.00	0.00
Average	0.00	55.14	0.10	42.99	0.00	0.00	1.64	0.12	0.00	0.00
Offshore										
90-91	0.00	12.73	0.00	86.77	0.04	0.00	0.42	0.04	0.00	0.00
91-92	0.00	10.90	0.06	88.53	0.00	0.01	0.50	0.00	0.00	0.00
92-93	0.00	34.46	0.06	65.14	0.00	0.00	0.34	0.00	0.00	0.00
93-94	0.00	45.26	0.00	54.51	0.00	0.00	0.23	0.00	0.00	0.00
94-95	0.00	96.51	0.00	3.41	0.00	0.00	0.07	0.00	0.00	0.00
Average	0.00	39.97	0.02	59.67	0.01	0.00	0.31	0.01	0.00	0.00
Total										
90-91	0.00	22.50	0.00	70.14	0.03	0.02	4.73	2.56	0.01	0.01
91-92	0.00	23.16	0.04	67.63	0.00	0.14	7.73	1.27	0.02	0.00
92-93	0.00	40.64	0.09	52.97	0.00	0.00	5.16	1.12	0.01	0.00
93-94	0.00	49.80	0.16	43.93	0.00	0.00	5.18	0.92	0.02	0.00
94-95	0.00	95.64	0.03	3.32	0.00	0.00	0.77	0.22	0.02	0.00
Average	0.00	46.35	0.07	47.60	0.01	0.03	4.71	1.22	0.02	0.00

Table 4. Historical Florida grapefruit ratio statistics

Date	Ratio	Date	Ratio	Date	Ratio	Date	Ratio	Date	Ratio
10-21-90	<u>9.32</u>								
10-28-90	9.65					10-31-93	<u>7.49</u>	10-30-94	<u>8.35</u>
11-4-90	9.47					11-7-93	<u>7.57</u>	11-6-94	<u>8.48</u>
11-11-90	9.67	11-10-91	<u>8.47</u>	11-15-92	<u>7.94</u>	11-14-93	<u>7.75</u>	11-13-94	<u>8.69</u>
11-18-90	9.71	11-17-91	<u>8.31</u>	11-22-92	<u>8.13</u>	11-21-93	<u>7.82</u>	11-20-94	<u>8.88</u>
11-25-90	9.86	11-24-91	<u>8.54</u>	11-29-92	<u>8.46</u>	11-28-93	<u>7.90</u>	11-27-94	<u>8.99</u>
12-2-90	9.72	12-1-91	<u>8.75</u>	12-06-92	<u>8.45</u>	12-5-93	<u>8.13</u>	12-4-94	<u>9.44</u>
12-9-90	9.81	12-8-91	<u>8.90</u>	12-13-92	<u>8.43</u>	12-12-93	<u>8.22</u>	12-11-94	9.60
12-16-90	9.66	12-15-91	<u>9.21</u>	12-20-92	<u>8.47</u>	12-19-93	<u>8.28</u>	12-18-94	9.55
12-23-90	9.71	12-22-91	<u>9.02</u>	12-27-92	<u>8.88</u>	12-26-93	<u>8.36</u>	12-25-94	9.54
12-30-90	<u>9.79</u>	12-29-91	<u>9.21</u>	1-3-93	<u>8.87</u>	1-2-94	<u>8.53</u>	1-1-95	<u>9.56</u>
1-6-91	9.89	1-5-92	<u>9.28</u>	1-10-92	<u>9.12</u>	1-9-94	<u>8.23</u>	1-8-95	9.55
1-13-91	9.89	1-12-92	<u>9.17</u>	1-17-93	<u>8.96</u>	1-16-94	<u>8.51</u>	1-15-95	9.57
1-20-91	10.18	1-19-92	<u>9.31</u>	1-24-93	<u>9.06</u>	1-23-94	<u>8.59</u>	1-22-95	8.46
1-27-91	9.92	1-26-92	<u>9.07</u>	1-31-93	<u>9.21</u>	1-30-94	<u>8.59</u>	1-29-95	9.76
2-3-91	10.36	2-2-92	<u>9.18</u>	2-7-93	<u>9.21</u>	2-6-94	<u>8.62</u>	2-5-95	9.76
2-11-91	10.28	2-9-92	<u>8.82</u>	2-14-93	<u>9.28</u>	2-13-94	<u>8.79</u>	2-12-95	9.42
2-17-91	9.93	2-16-92	<u>8.95</u>	2-21-93	<u>9.51</u>	2-20-94	<u>8.93</u>	2-19-95	9.61
2-24-91	<u>10.15</u>	2-23-92	<u>9.09</u>	2-28-93	<u>9.35</u>	2-27-94	<u>9.10</u>	2-26-95	<u>9.67</u>
3-3-91	10.55	3-1-92	<u>9.26</u>	3-7-93	<u>9.30</u>	3-6-94	<u>9.05</u>	3-5-95	9.70
3-10-91	10.63	3-8-92	<u>9.38</u>	3-14-93	<u>9.30</u>	3-13-94	<u>9.08</u>	3-12-95	9.76
3-17-91	10.87	3-15-92	9.61	3-21-93	<u>9.25</u>	3-20-94	<u>9.03</u>	3-19-95	9.82
3-24-91	10.95	3-22-92	9.72	3-28-93	<u>9.40</u>	3-27-94	<u>9.17</u>	3-26-95	9.90
4-7-91	11.29	3-29-92	9.76	4-4-93	9.61	4-3-94	<u>9.17</u>	4-2-95	10.37
4-14-91	11.37	4-5-92	9.84	4-11-93	9.66	4-10-94	<u>9.29</u>	4-9-95	10.53
4-21-91	11.64	4-12-92	10.43	4-18-93	9.99	4-17-94	9.68	4-16-95	10.55
4-28-91	11.50	4-19-92	10.43	4-25-93	10.22	4-24-94	10.10	4-23-95	10.79
5-5-91	11.91	4-26-92	10.91	5-2-93	10.72	5-1-94	10.04	4-30-95	11.25
5-19-91	12.54	5-3-92	11.11	5-9-93	10.39	5-8-94	10.32	5-7-95	11.45
5-26-91	12.39	5-10-92	11.97	5-16-93	10.92	5-15-94	10.46	5-14-95	12.06
6-2-91	12.44	5-17-92	12.38	5-23-93	11.22	5-22-94	10.66	5-21-95	12.31
6-9-91	12.01			5-30-93	11.32	5-29-94	10.62	5-28-95	12.44
6-16-91	12.66			6-6-93	11.59	6-5-94	11.17	6-4-95	12.32
				6-13-93	12.05	6-12-94	11.72	6-11-95	13.65

Source: Florida Department of Agriculture and Consumer Services, *Weekly Fruit Analysis Report*, 1990 through 1995.

Table 5. U.S. No. 1 Golden and better grades shipments (million cartons)

Season	Total	<8.5 Ratio	>8.5 Ratio	%<8.5 Ratio
Total Domestic, Canadian, and Offshore Shipment				
1990-91	43.02	0.00	43.02	0.00
1991-92	39.85	10.58	29.27	26.55
1992-93	41.42	12.62	28.80	30.47
1993-94	40.40	12.27	28.13	30.37
1994-95*	40.57	5.80	34.77	14.30
Average	41.05	8.25	32.80	20.34
Total Domestic and Canadian Shipment				
1990-91	24.52	0.00	24.52	0.00
1991-92	22.68	6.77	15.91	29.85
1992-93	24.57	8.85	15.72	36.02
1993-94	21.07	8.63	12.44	40.96
1994-95*	22.16	3.84	18.32	17.33
Average	23.00	5.62	17.38	24.83
Total Offshore Shipment				
1990-91	18.50	0.00	18.50	0.00
1991-92	17.17	3.81	13.36	22.19
1992-93	16.85	3.77	13.08	22.37
1993-94	19.33	3.64	15.69	18.83
1994-95*	18.41	1.96	16.45	10.65
Average	18.05	2.64	15.42	14.81

*U.S. No. 1 and U.S. No. 1 Bright grades only.

Table 6. Estimated economic impact of scenario 2 on FOB revenues

Season	Volume Affected	Total Volume	% of Fruit Affected	FOB Revenue Change ^a	
				(1)	(2)
	--- million cartons ---		-- % --	-- \$ million --	
1990-91	0	24.52	0.00	0	0
1991-92	6.77	22.68	29.84	6.88	-8.43
1992-93	8.85	24.57	36.01	-1.56	-18.11
1993-94	8.63	21.07	40.93	-6.44	-20.59
1994-95	3.84	22.16	17.32	10.07	-4.95
Average	5.62	23.00	24.42	2.23	-10.41

^aOption (1) indicates the revenue changes under the assumption that the Fancy grade FOB price is one dollar higher than the estimated U.S. No. 1 grapefruit FOB price; the FOB price for Choice grade grapefruit equals the estimated U.S. No. 1 grapefruit FOB price. Option (2) shows the revenue changes under the assumption that there is no price premium for Fancy grade grapefruit over Choice grade grapefruit and FOB prices for both grades equal the estimated U.S. No. 1 grapefruit FOB price.

Table 7. Proposed grading changes and domestic and Canadian grapefruit shipments

Season	Volume of Grapefruit Shipments Affected		
	9.5 Ratio	3 Tiers	8.5 Ratio
Per Cent of Grapefruit Shipments Affected (%)			
1990-91	15.02	0.00	0.00
1991-92	83.92	42.31	29.84
1992-93	75.93	51.75	36.01
1993-94	81.09	76.41	40.93
1994-95	29.76	17.32	17.32
1995-96*	100.00	0.00	0.00
Volume of Grapefruit Shipments Affected (million cartons)			
1990-91	3.68	0.00	0.00
1991-92	19.03	9.60	6.77
1992-93	18.66	12.72	8.85
1993-94	17.09	16.10	8.63
1994-95	6.59	3.84	3.84
Volume of Grapefruit Shipments not Affected (million cartons)			
1990-91	20.84	24.52	24.52
1991-92	3.65	13.08	15.91
1992-93	5.91	11.85	15.72
1993-94	3.98	4.97	12.44
1994-95	15.57	18.32	18.32

*For shipments up until February 25, 1996.