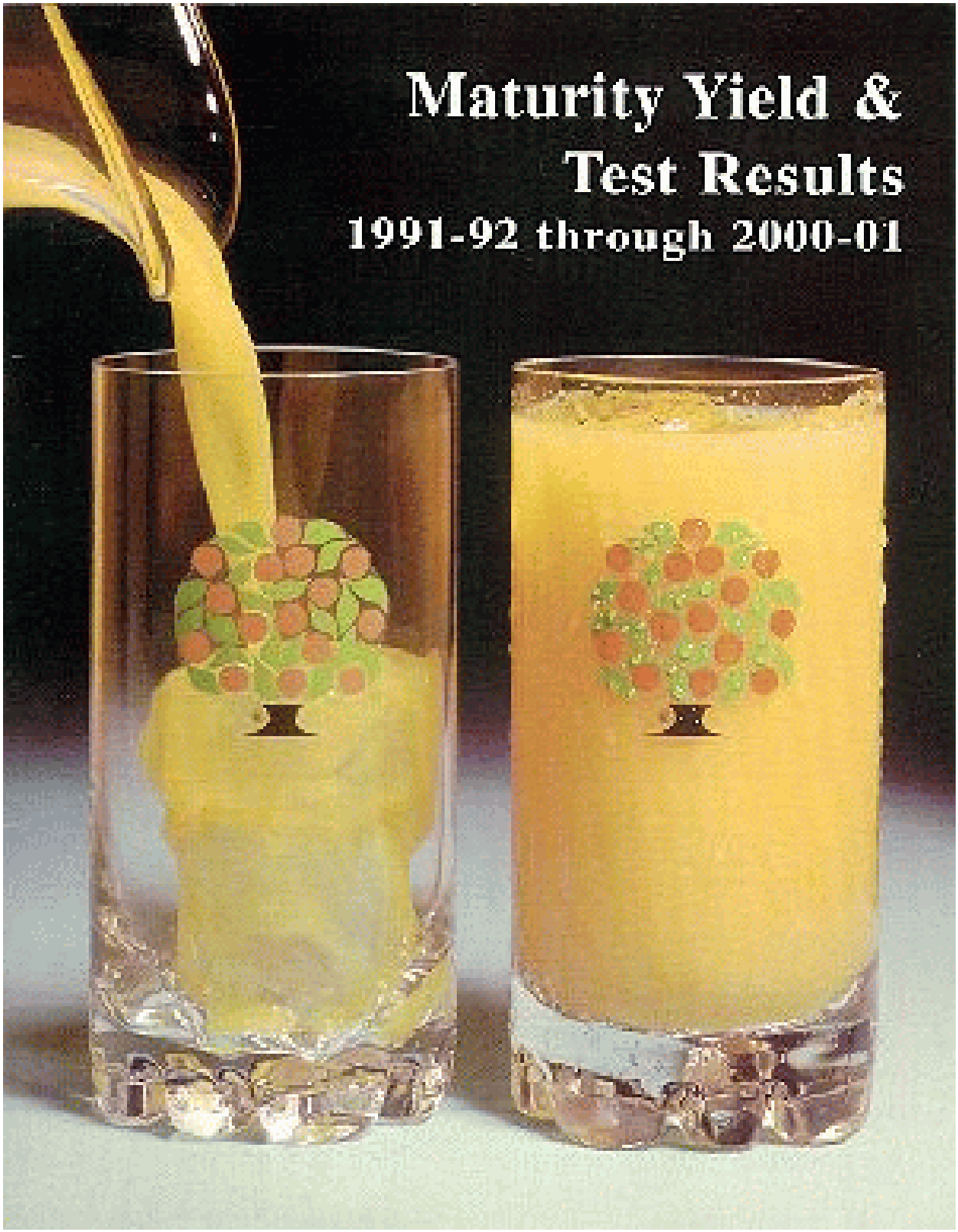
Maturity Yield &
Test Results
1991-92 through 2000-01

FLORIDA AGRICULTURAL STATISTICS

CITRUS MATURITY AND YIELD TESTS

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
CHARLES H. BRONSON, COMMISSIONER
TALLAHASSEE, FLORIDA

FLORIDA AGRICULTURAL STATISTICS SERVICE
Orlando, Florida
John D. Witzig, State Statistician

DIVISION OF MARKETING AND DEVELOPMENT
Tallahassee, Florida
Nelson L. Pugh, Director

FLORIDA AGRICULTURAL STATISTICS SERVICE
P.O. Box 530105
1222 Woodward Street
Orlando, Florida 32803
Telephone: (407) 648-6013
Facsimile: (407) 648-6029
email: nass-fl@nass.usda.gov
http://www.nass.usda.gov/fl

Cooperating with

U.S. Department of Agriculture,
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University of Florida
Institute of Food & Agricultural Sciences
Agricultural Experiment Stations
Department of Food & Resource Economics

ACKNOWLEDGMENT

The Citrus Maturity Testing Program historic series contained in this publication was prepared by the Florida Agricultural Statistics Service from tests made at the Maturity Test Laboratory, located at the Orange County Agricultural Center.

We offer our sincere thanks to the many growers who allow picking of fruit samples from their groves, the Orange County Commissioners who maintain our test facilities, and citrus organizations who voluntarily cooperate in this program.

The report was assembled under the direction of Robert R. Terry, Harry M. Whittaker, Candice T. Erick, and Edwin L. Anderson of the Florida Agricultural Statistics Service. Cover photography courtesy of Florida Department of Citrus.

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CONTENTS

CITRUS MATURITY TESTING PROGRAM

INTRODUCTION

Since the processing industry began to utilize the large majority of the orange crop in Florida, the concept of production estimates and forecasts only in terms of boxes of a given weight no longer fully reflects the statistical needs of the citrus industry. To be more meaningful, forecasts and estimates of production need to be expressed in terms of total pounds of solids as well as in terms of boxes. This publication provides a summary of results from randomly sampled fruit collected and tested by the Florida Agricultural Statistics Service for recent years.

HISTORY OF CITRUS MATURITY TESTING PROGRAM

In the late 1950's the Service began to collect fruit samples of oranges monthly to determine if maturity and yield factors could be projected in advance of harvest. For several years field personnel picked a single fruit from each grove they entered to make monthly counts and size measurements in their regular drop and growth surveys. These fruit were combined into a single sample for each type of orange--early, midseason, and late--then juice was extracted with the aid of an electrically operated reamer. The necessary weights and test results were accumulated. Within a few seasons, it was determined that declines in acid, increases in soluble solids and solids-to-acid ratios and, later in the season, decreases in juice and gains in pounds solids followed predictable patterns. It appeared from these data that changes in these elements could be predicted over time if sufficient observations were available to provide a valid statistical base. None of the results of these tests were published. The yields of pounds solids shown in these tests appeared to be correlated with changes in yield levels of fruit received at the processing plants.

In early 1963, following the disastrous freeze of December 1962, the industry was very concerned over the level of pounds-solids yield that would be obtained from Valencia oranges which had been damaged severely. In response to recommendations by the Citrus Crop Estimates Advisory Committee and requests from others in the citrus industry, the Florida Agricultural Statistics Service conducted a series of tests using fruit from randomly selected sample groves. Three successive tests were made at two week intervals. These tests indicated rather accurately the abnormally low levels of juice and pounds of solids in Valencias that spring.

This pilot project provided experience for developing regular survey procedures which would yield statistically reliable results. Sufficient funds were available to finance the work and a regular program of monthly surveys began on October 1, 1963. The sample size selected in these first surveys provided for 50 groves each for early, midseason, and late oranges. Reports were issued individually on early and midseason oranges on the first of each month from October through January in the 1963-64 season, and from October 1 through February 1 in the 1964-65 and 1965-66 seasons. Valencia orange test results were reported on October 1 through April 1 in the 1963-64 season, and through May 1 in the 1964-65 season. In the 1965-66 season, Valencias were tested at the first of each month from October through February and, beginning in February, a midmonth report was added, continuing through April of that season. In the 1966-67 season, testing began September 1 and midmonth tests were added to the previous monthly programs.

In 1967, following a statistical evaluation of the preceding four years' results, the Service responded to industry requests for area data from the maturity and yield tests, and expanded sample sizes. In that year, the number of early orange groves was established at 73, midseasons at 55, and Valencias at 100. September 1 continued as the first test date and the schedule of midmonth tests was retained.

In the 1964-65 season, seedless grapefruit tests were added to the program with a separate series for white and colored varieties. A series for seedy grapefruit was added in the 1965-66 season and retained through the 1983 season, but has been discontinued because of steadily declining production.

SAMPLING

The Florida Agricultural Statistics Service collects fruit samples starting the first of September, and monthly thereafter. Each sample consists of 15 oranges or 5 grapefruit. The samples are picked from preselected groves and predetermined sample trees. During the 1994-95 season the number of sample groves were increased to: early orange, 120; midseason orange, 55; late (Valencia) orange, 150; white seedless grapefruit, 50; and colored seedless, 50.

Sample groves and trees remain relatively constant from year to year in order to assure the greatest continuity of data. Each sample is picked from a randomly selected cluster of five trees, a central (pivot) tree and four adjacent trees. Sample fruit are selected from the pivot tree's side nearest the road of travel and from the sides of the other four sample trees nearest the pivot tree. This procedure insures that fruit from all exposures are included in the samples.

TESTING

Early and midseason oranges are now tested on the first of each month beginning September 1 and continuing through February 1. Late oranges are tested on the first of each month beginning October 1 and ending June 1. Grapefruit tests are run the first of each month from September through December.

All maturity tests are conducted at a testing facility located at the Orange County Agricultural Center at 2350 E. Michigan Avenue in Orlando. The testing laboratory was built with funds and labor donated by Florida Citrus Mutual, the Florida Citrus Processors Association, the Florida Citrus Packers and the Orange County Commissioners.

All samples are run through an FMC 091 test extractor using mechanical pressure only. This machine utilizes a .040 short strainer and standard 5/8 inch orifice tube. The beam setting is 1/8 inch for the 3 and 4 inch cups and 1 inch for the 5 inch cup with no restrictors used. The 3 and 4 inch cups are used for oranges, while the 4 and 5 inch cups are used for grapefruit depending on sizes. The extractor and specifications correspond to those used for official State tests when the program began. State tests are now run on the FMC 091 B utilizing air pressure.

COMPARISONS OF FRUIT TEST RESULTS

These Maturity Test Results are not directly comparable with the results of tests being taken by the Division of Fruit and Vegetable (DFV) for each load of fruit delivered for processing. The Maturity Tests are from a sample of all fruit remaining on trees at the time of sampling, whereas the DFV tests are of fruit currently being delivered. Secondly, the Maturity Test Results are based on an extraction procedure which has not varied or changed over the entire history of the tests, and the resulting measures of acids, solids and juice are unadjusted, whereas the DFV tests are made primarily to establish a basis for payment of fruit, in accord with industry regulations. Thus, the Maturity Tests Results are stated for unfinished juice, and the DFV tests are made, then adjusted to calculate finished juice based on current factoring.

The finished juice from test results entered on DFV inspection certificates will always be less than the unfinished juice extracted by the inspector and the amount of unfinished juice reported in Maturity Test Results for the corresponding date.

FORECASTS OF YIELD OF FROZEN CONCENTRATED ORANGE JUICE (FCOJ)

Yield forecasts per 90 pound box equivalents are based on historic relationships, adjusted to reflect the effects of changing regulations on allowable extraction rates and current Brix standards. The forecast is made and measured against the history of actual final yields reported by the Florida Citrus Processors Association. Variables used in the forecasts include Maturity Test Results, and the forecasts properly take into account the actual cumulative yield to date as reported by the Florida Citrus Processors Association.

Starting in the 1965-66 season the standard for Florida orange juice was increased to 45.0° Brix, from the previous standard of 42.0°. This standard was changed to 43.4° with the 1980-81 season, then to the U.S. standard of 42.0° Brix, in 1981-82, and subsequently has remained unchanged.

THE 1991-92 SEASON

The first all orange FCOJ yield projection for the 1991-92 season was 1.50 gallons of 42.0° Brix concentrate. This level was maintained until February when the all orange level was raised to 1.51 gallons per box. The all orange yield projection was raised again the first of March to 1.52 gallons. This level was held until May when the all orange projections increased to 1.54 gallons due to the excellent quality developed by the Valencia oranges. The all oranges were raised to 1.55 gallons the first of June. The final all orange average yield was 1.54818 gallons per box. The early and midseasons were final at 1.46846 and the Valencias at 1.69608 gallons per box.

THE 1992-93 SEASON (1st non-factored season)

The October 1, 1992 all orange yield projection was 1.48 gallons per box of 42.0° Brix concentrate. This projection was held until January when the 1.48 level was raised to 1.52 gallons per box. The all orange projected yield was again increased the first of February to 1.55 gallons per box. The all orange level was increased to 1.57 March 1 and held through April. May projection was increased to 1.58 gallons per box. The final early and midseason yield as reported by the Florida Citrus Processors Association was a record high 1.52480 gallons per box. The late (Valencia) portion was final at 1.68686 and the all orange was final at 1.57893 gallons per box.

THE 1993-94 SEASON (non-factored)

The first all orange FCOJ yield projection for the 1993-94 season was 1.55 gallons of 42.0° Brix concentrate per box. This level was maintained until January when the forecast was raised to 1.56 gallons per box. The February, all orange projection was raised again to 1.57 gallons. This level remained for the rest of the season. The final all orange yield was 1.56760 gallons per box. The early and midseason orange yield was 1.52073 and the Valencias were final at 1.65942.

THE 1994-95 SEASON (non-factored)

The October 1, 1994 all orange FCOJ yield projection was 1.54 gallons of 42.0° Brix concentrate. This level was maintained until December when the forecast was lowered to 1.52 gallons per box. In January, the FCOJ projected yield for all oranges was lowered to 1.51 gallons. The yield forecast was lowered to 1.50 the first of April and held at that level for the remainder of the season. The final all orange yield was 1.49644 gallons per box. The early and mid season portion of the crop was final at 1.44400 gallons and the late type (Valencias) reached 1.58230. All areas of the citrus belt received above average rainfall from the March 1994 bloom period through December. From January through June when the last of the Valencias were picked rains were generally a little above to a little below average depending on location.

THE 1995-96 SEASON (non-factored)

The all orange FCOJ yield projection on October 1, 1995 was 1.54 gallons of 42.0 degrees Brix concentrate per box. This all orange yield projection was held until December when the forecast for all oranges was reduced to 1.50 gallons per box due to low pounds solids on the current maturity test results. The yield projection for all fruit going into FCOJ was lowered in January to 1.47 gallons per box. In March, the yield projection for all oranges was raised to 1.48 gallons per box which was held until the May forecast when the projection was raised to 1.52 gallons. The final yield for all oranges was 1.52252. Early and mid oranges averaged 1.44775 and late type (Valencia) oranges were 1.66979 gallons per box as reported by the Florida Citrus Processors. There were 132.9 million boxes used in FCOJ this season.

THE 1996-97 SEASON (non-factored)

The October 1, 1996 all orange yield projection was 1.53 gallons of 42.0° Brix concentrate per box. This all orange yield was maintained until February when the projection was increased slightly to 1.54 gallons per box. Near ideal growing conditions prevailed through the winter and early spring and this prompted an increase in the all orange yield projection to 1.57 gallons April 1. The all orange yield was again raised May 1 to 1.58 gallons per box. The final early and midseason yield was 1.52360 gallons per box and the late type (Valencia) oranges were 1.67701. The all oranges were final at 1.57174 gallons. There were 153.8 million boxes of all oranges used in FCOJ this season.

THE 1997-98 SEASON (non-factored)

The all orange FCOJ yield projection on October 1, 1997 was 1.55 gallons of 42.0 degrees Brix concentrate per box. This all orange yield was held until February when the projection was raised to 1.56 gallons per box due to the higher pounds solids per box for the early portion of the crop. The forecast of 1.56 gallons per box for all oranges was held until May when it was raised to 1.58 gallons due to higher than anticipated yields for the late season oranges. The Valencias were final at 1.71525 gallons per box which was an all time record for the late portion of the crop. The final yield for all oranges was 1.57731. The early and midseason oranges were final at 1.49255. An all-time single season utilization record of 160.9 million boxes of all oranges were used in FCOJ this season.

THE 1998-99 SEASON (non-factored)

The October 1, 1998 all orange yield projection was 1.57 gallons of 42.0 degrees Brix concentrate per box. This all orange yield projection was held until February when it was increased to 1.60 gallons per box. The all orange yield was raised to 1.62 gallons per box for the March forecast due to excellent pounds solids produced by the early and midseason oranges which were final at 1.58414 gallons per box, an all-time record for that portion of the crop. The all orange projection was raised again to 1.63 gallons per box in April and 1.64 in May. In June the all orange projection was reduced to 1.63 gallons per box and the all orange yield was final at the record level of 1.63381 gallons per box. The late type (Valencia) oranges also set a record with a final yield of 1.74806 gallons per box. Only 97.2 million boxes of all oranges were used in the production of FCOJ this season.

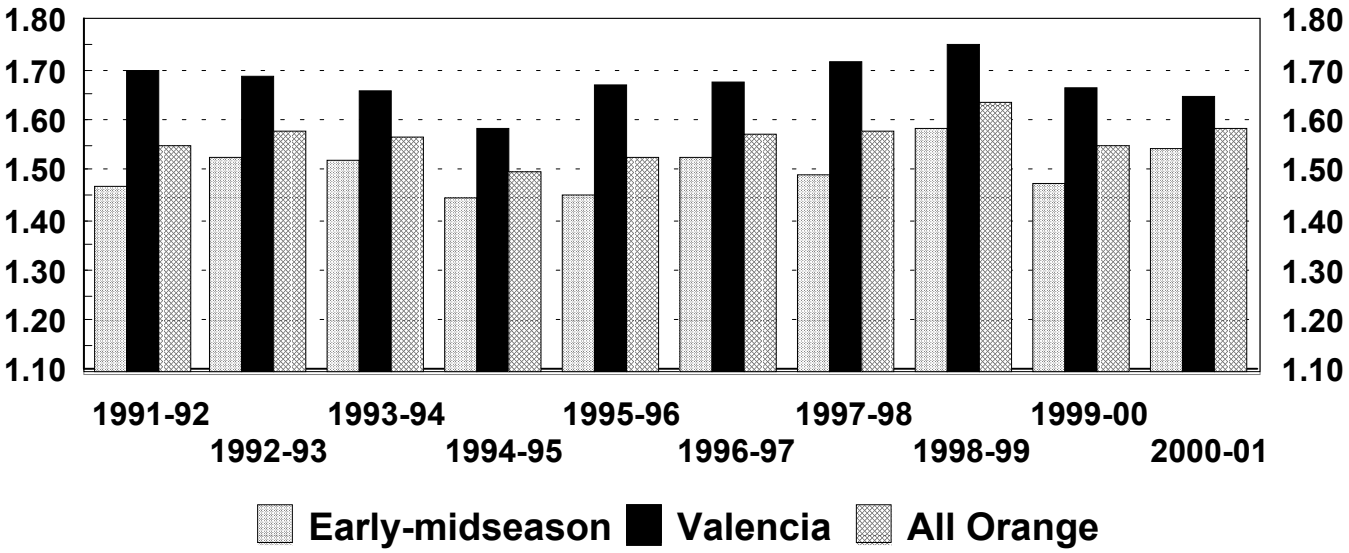
THE 1999-00 SEASON (non-factored)

The first all orange FCOJ yield projection for the 1999-2000 season on October 1 was 1.60 gallons of 42.0 degrees Brix concentrate. This projection held until January when it was lowered to 1.57 gallons due to the large proportion of later than normal bloom fruit going to the processors. The February 1 all orange yield projection was lowered again to 1.54 gallons and held until the indications in late May and early June showed a slight increase toward the 1.55 gallons level. The final all orange yield was 1.547702 gallons per box. The early and midseason portion was final at 1.475739 and the Valencias were final at 1.663356 gallons per box.

THE 2000-01 SEASON (non-factored)

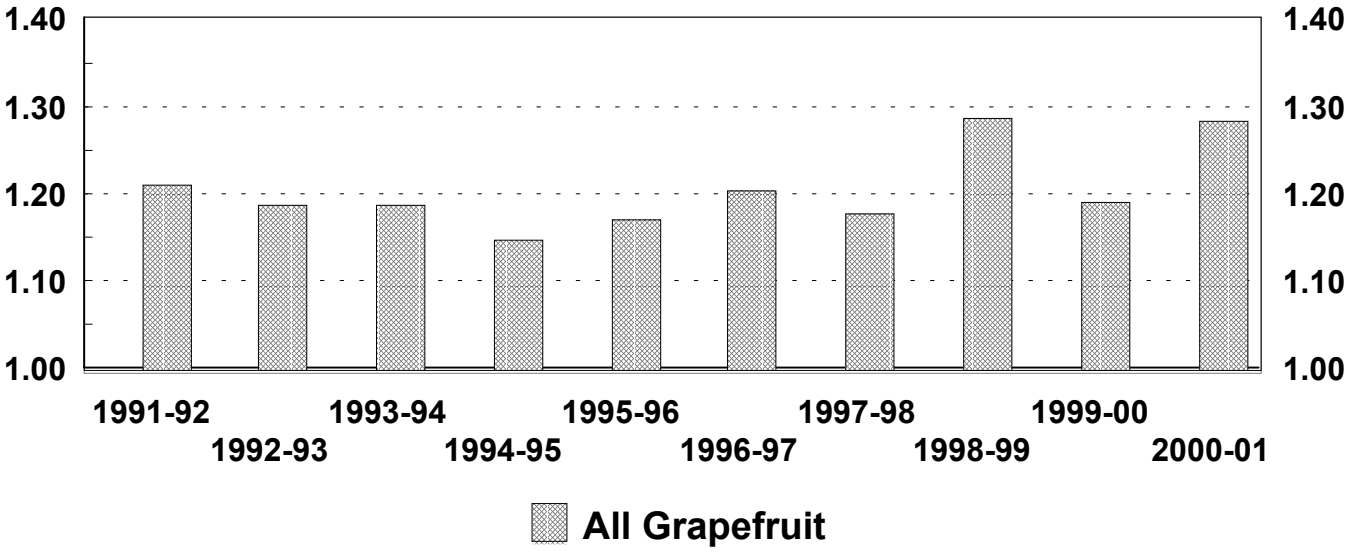
The October 1, 2000 all orange FCOJ yield projection was 1.55 gallons of 42.0 degrees Brix concentrate per box and it was carried through January. The February 1 all orange yield was lowered to 1.54 gallons per box due to an indication of slightly lower pounds solids projection. However, with the higher yielding midseason oranges contributing much better than anticipated yields, the all orange projection was raised to 1.58 gallons per box March 1. This higher yield was carried through the remainder of the season. The all orange yield was final at 1.580179. The early and midseason portion was final at 1.540728 gallons per box and the weighted average for Valencias was 1.645727.

FCOJ Final Reported Yield



Source: Florida Citrus Processors Association

FCGJ Final Reported Yield



Source: Florida Citrus Processors Association

EARLY ORANGES

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves for crop years 1991-92 through 2000-01

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
September 1						
1997-98	120	1.31	9.36	7.29	45.13	4.22
1998-99	120	1.72	9.52	5.68	42.14	4.01
1999-00	120	1.73	9.35	5.53	41.09	3.83
2000-01	120	1.63	9.78	6.11	42.44	4.14
October 1						
1991-92	115	0.96	9.73	10.43	49.56	4.82
1992-93	115	1.10	9.25	8.61	47.79	4.42
1993-94	115	1.33	9.73	7.53	46.78	4.55
1994-95	120	0.93	9.53	10.49	49.78	4.74
1995-96	120	1.03	9.30	9.25	50.50	4.70
1996-97	120	1.14	9.85	8.84	48.14	4.74
1997-98	120	0.99	9.80	10.17	47.27	4.63
1998-99	120	1.14	9.38	8.34	47.88	4.49
1999-00	120	1.20	9.36	7.94	46.51	4.35
2000-01	120	1.10	9.85	9.13	48.63	4.78
November 1						
1991-92	111	0.81	10.30	13.05	51.50	5.31
1992-93	114	0.95	10.06	10.93	50.69	5.10
1993-94	114	0.99	10.27	10.58	49.70	5.11
1994-95	111	0.73	10.16	14.29	52.30	5.32
1995-96	117	0.77	9.84	13.14	53.75	5.29
1996-97	120	0.89	10.26	11.80	50.75	5.20
1997-98	116	0.85	10.54	12.62	50.11	5.28
1998-99	118	0.90	10.15	11.49	51.07	5.18
1999-00	118	0.94	9.69	10.53	49.98	4.84
2000-01	117	0.96	10.73	11.49	51.01	5.47
December 1						
1991-92	81	0.72	11.44	16.12	51.47	5.89
1992-93	86	0.79	11.21	14.43	51.46	5.77
1993-94	101	0.84	11.30	13.71	51.50	5.82
1994-95	78	0.67	10.75	16.37	52.22	5.62
1995-96	80	0.74	10.57	14.57	52.01	5.50
1996-97	97	0.81	11.04	13.93	51.61	5.70
1997-98	83	0.77	11.33	14.80	50.99	5.78
1998-99	94	0.73	11.08	15.40	51.61	5.72
1999-00	102	0.81	10.80	13.42	50.78	5.48
2000-01	101	0.89	11.45	13.14	51.08	5.85

Continued

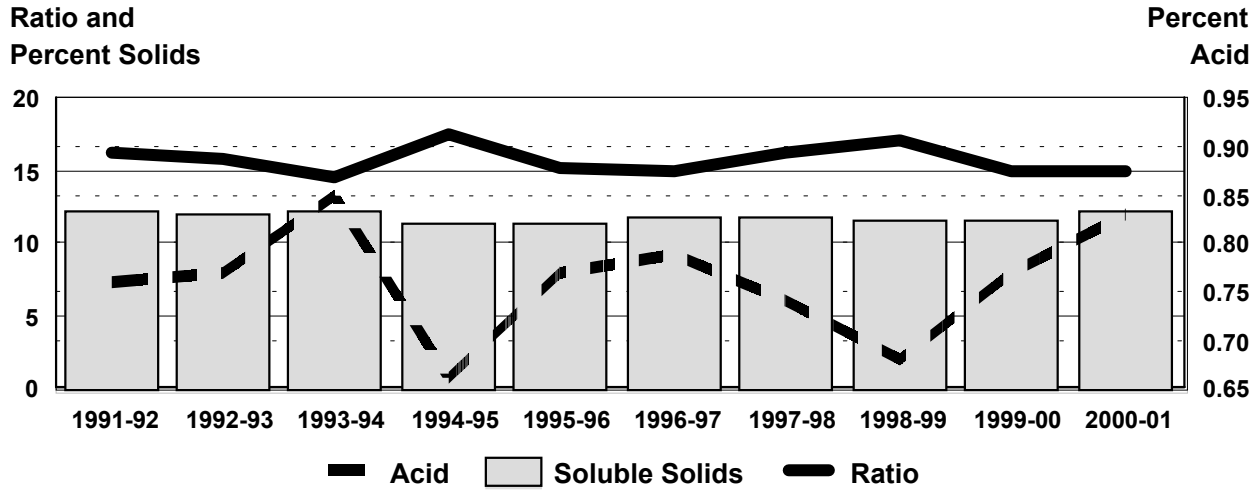
EARLY ORANGES

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01 (continued)

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
January 1						
1991-92	39	0.76	12.17	16.33	49.98	6.09
1992-93	57	0.77	12.00	15.94	51.10	6.13
1993-94	61	0.85	12.19	14.66	51.24	6.24
1994-95	45	0.66	11.29	17.57	48.77	5.52
1995-96	42	0.77	11.45	15.22	52.27	5.99
1996-97	55	0.79	11.81	15.09	50.53	5.96
1997-98	57	0.74	11.91	16.35	49.58	5.90
1998-99	68	0.68	11.63	17.18	51.68	6.01
1999-00	79	0.77	11.51	14.96	50.11	5.76
2000-01	75	0.83	12.21	14.97	50.69	6.17
February 1						
1991-92 1/						
1992-93	32	0.73	12.76	17.84	51.02	6.51
1993-94	24	0.77	13.33	17.64	49.77	6.64
1994-95	9	0.62	11.88	19.35	49.66	5.91
1995-96	8	0.75	12.48	17.15	51.27	6.38
1996-97	16	0.75	12.07	16.36	48.94	5.92
1997-98	20	0.74	12.94	17.84	49.22	6.38
1998-99	35	0.67	12.71	19.11	51.35	6.54
1999-00	49	0.76	12.44	16.61	48.61	6.05
2000-01	44	0.78	12.73	16.62	48.43	6.16

1/ Too few samples to test.

EARLY ORANGES
Unadjusted Averages for Regular Bloom Fruit
January 1



Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves for crop years 1991-92 through 2000-01

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
September 1						
1997-98	55	1.56	9.12	6.00	45.19	4.12
1998-99	55	1.94	9.41	4.96	42.51	4.00
1999-00	55	1.99	9.13	4.69	39.47	3.60
2000-01	55	1.77	9.32	5.35	44.22	4.13
October 1						
1991-92	55	1.22	9.54	8.04	51.00	4.86
1992-93	55	1.38	9.06	6.76	49.12	4.45
1993-94	55	1.62	9.36	5.95	46.49	4.35
1994-95	55	1.19	9.23	7.97	51.08	4.71
1995-96	55	1.24	9.20	7.59	51.82	4.77
1996-97	55	1.40	9.76	7.07	48.95	4.78
1997-98	54	1.14	9.43	8.47	50.05	4.72
1998-99	55	1.30	9.14	7.19	48.25	4.41
1999-00	55	1.41	9.10	6.57	46.89	4.27
2000-01	55	1.22	9.47	7.94	49.78	4.71
November 1						
1991-92	55	1.05	10.38	10.19	52.69	5.47
1992-93	55	1.19	10.01	8.61	52.71	5.28
1993-94	55	1.22	9.93	8.35	50.64	5.02
1994-95	55	0.91	10.18	11.49	54.53	5.55
1995-96	55	0.93	9.90	10.83	55.72	5.52
1996-97	55	1.12	10.21	9.34	52.44	5.35
1997-98	54	0.99	10.36	10.72	51.91	5.38
1998-99	54	1.06	10.01	9.58	52.92	5.30
1999-00	54	1.10	9.54	8.85	51.06	4.88
2000-01	55	1.05	10.45	10.27	53.42	5.59
December 1						
1991-92	52	0.91	11.65	13.05	52.64	6.13
1992-93	54	1.00	11.34	11.59	53.11	6.02
1993-94	53	0.98	11.04	11.53	53.20	5.87
1994-95	49	0.82	10.99	13.62	54.57	5.99
1995-96	49	0.87	10.88	12.93	53.56	5.83
1996-97	52	0.98	11.29	11.79	52.98	5.98
1997-98	54	0.89	11.38	13.09	51.97	5.92
1998-99	53	0.84	11.21	13.54	54.16	6.08
1999-00	51	0.93	10.91	11.91	52.15	5.69
2000-01	51	0.95	11.37	12.17	53.29	6.06

Continued

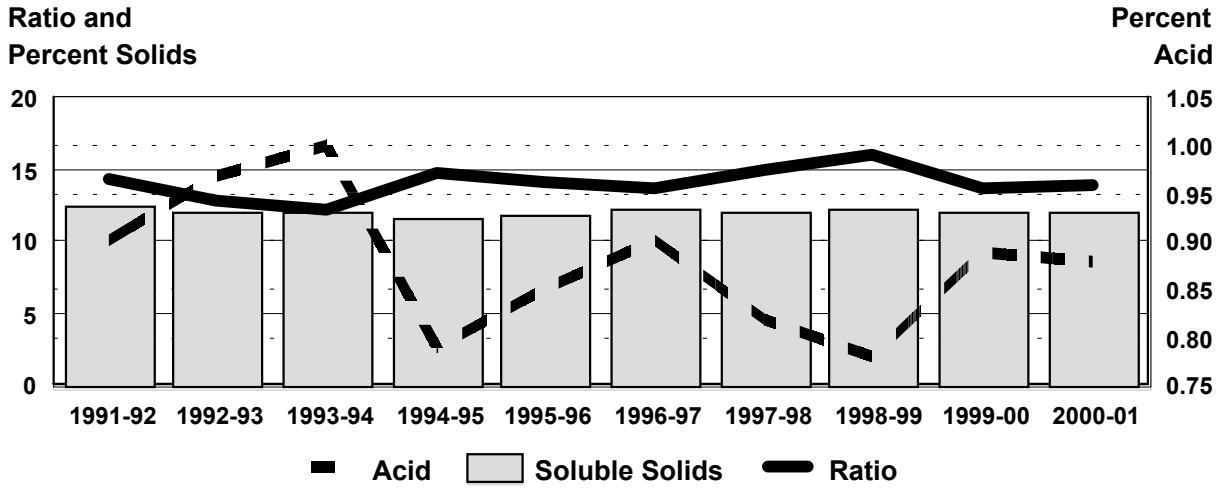
MIDSEASON ORANGES

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01 (continued)

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
January 1						
1991-92	36	0.90	12.44	14.27	51.14	6.36
1992-93	49	0.97	12.04	12.79	52.33	6.30
1993-94	44	1.00	12.00	12.23	52.72	6.33
1994-95	40	0.79	11.60	14.77	52.39	6.09
1995-96	40	0.85	11.81	14.24	53.86	6.37
1996-97	43	0.90	12.13	13.78	51.91	6.29
1997-98	43	0.82	12.06	15.07	51.12	6.17
1998-99	47	0.78	12.28	15.99	53.17	6.53
1999-00	43	0.89	12.02	13.65	51.38	6.17
2000-01	47	0.88	12.09	14.03	53.34	6.45
February 1						
1991-92 1/						
1992-93	32	0.85	12.99	15.77	51.83	6.74
1993-94	23	0.95	12.95	13.80	50.39	6.53
1994-95	10	0.82	12.13	14.89	51.62	6.28
1995-96	11	0.85	12.98	15.52	52.39	6.80
1996-97	15	0.86	12.99	15.48	50.54	6.57
1997-98	16	0.91	13.13	14.58	50.95	6.69
1998-99	25	0.75	12.77	17.28	53.33	6.82
1999-00	36	0.84	12.80	15.44	50.60	6.48
2000-01	23	0.86	12.97	15.48	49.37	6.42

1/ Too few samples to test.

MIDSEASON ORANGES
Unadjusted Averages for Regular Bloom Fruit
January 1



LATE ORANGES

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
October 1						
1991-92	145	2.15	8.71	4.13	48.35	4.21
1992-93	145	2.45	8.50	3.51	46.16	3.92
1993-94	145	2.69	8.96	3.38	44.81	4.01
1994-95	150	2.19	8.69	4.05	48.84	4.25
1995-96	150	2.39	8.60	3.65	47.68	4.10
1996-97	150	2.40	8.93	3.76	46.08	4.11
1997-98	150	2.10	8.84	4.30	47.87	4.23
1998-99	150	2.44	8.65	3.60	45.68	3.95
1999-00	150	2.51	8.55	3.45	43.36	3.71
2000-01	150	2.45	8.80	3.65	46.50	4.09
November 1						
1991-92	145	1.77	9.22	5.33	51.48	4.75
1992-93	145	2.06	9.04	4.51	50.85	4.60
1993-94	145	2.17	8.89	4.20	48.55	4.36
1994-95	150	1.66	9.22	5.66	53.61	4.95
1995-96	150	1.77	8.68	5.00	52.66	4.58
1996-97	150	1.98	9.33	4.78	49.71	4.64
1997-98	150	1.80	9.44	5.34	51.05	4.82
1998-99	150	2.02	8.98	4.51	50.66	4.55
1999-00	150	2.06	8.72	4.30	47.53	4.15
2000-01	150	2.00	9.46	4.80	50.80	4.81
December 1						
1991-92	145	1.46	10.37	7.22	53.50	5.56
1992-93	145	1.64	10.11	6.27	53.39	5.40
1993-94	145	1.72	9.86	5.84	52.92	5.22
1994-95	150	1.38	9.86	7.25	55.38	5.47
1995-96	150	1.55	9.54	6.25	53.39	5.10
1996-97	150	1.64	10.29	6.37	53.19	5.48
1997-98	150	1.44	10.23	7.21	53.23	5.45
1998-99	150	1.58	9.91	6.34	53.31	5.28
1999-00	150	1.70	9.81	5.85	51.38	5.04
2000-01	150	1.74	10.37	6.03	52.17	5.41

Continued

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01 (continued)

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
January 1						
1991-92	145	1.33	11.28	8.64	53.57	6.05
1992-93	145	1.47	10.97	7.59	53.66	5.89
1993-94	145	1.58	10.71	6.89	54.12	5.79
1994-95	150	1.23	10.53	8.70	55.75	5.88
1995-96	150	1.38	10.44	7.67	54.23	5.67
1996-97	150	1.44	11.13	7.84	54.16	6.03
1997-98	150	1.24	11.01	9.02	53.82	5.93
1998-99	150	1.33	10.79	8.18	54.20	5.85
1999-00	150	1.47	10.81	7.43	52.51	5.68
2000-01	149	1.51	11.10	7.46	54.26	6.02
February 1						
1991-92	145	1.23	12.01	9.90	53.54	6.43
1992-93	145	1.23	11.75	9.67	55.03	6.47
1993-94	145	1.35	11.81	8.85	53.91	6.37
1994-95	150	1.12	11.31	10.26	55.67	6.30
1995-96	150	1.21	11.37	9.54	54.70	6.23
1996-97	150	1.28	11.88	9.39	54.05	6.43
1997-98	149	1.10	11.84	10.86	54.89	6.50
1998-99	150	1.24	11.91	9.69	55.24	6.58
1999-00	150	1.34	11.68	8.83	52.67	6.15
2000-01	149	1.40	11.86	8.57	53.59	6.36
March 1						
1991-92	139	1.12	12.58	11.39	53.64	6.75
1992-93	142	1.19	12.43	10.60	55.80	6.94
1993-94	143	1.18	12.38	10.60	54.89	6.80
1994-95	143	1.07	11.97	11.29	55.94	6.70
1995-96	150	1.12	11.86	10.76	54.23	6.44
1996-97	139	1.11	12.30	11.23	54.17	6.67
1997-98	149	1.04	12.62	12.26	54.02	6.82
1998-99	144	1.15	12.65	11.25	55.21	7.00
1999-00	150	1.20	12.51	10.48	52.66	6.60
2000-01	149	1.21	12.51	10.50	53.85	6.74

Continued

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01 (continued)

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
April 1						
1991-92	89	1.01	12.91	12.92	53.68	6.95
1992-93	118	1.04	12.72	12.38	55.53	7.07
1993-94	143	1.04	12.68	12.28	55.27	7.01
1994-95	103	0.94	12.13	13.05	55.38	6.73
1995-96	127	1.02	12.24	12.12	51.54	6.32
1996-97	123	0.96	12.73	13.39	54.16	6.91
1997-98	109	0.99	12.86	13.24	53.86	6.94
1998-99	108	1.05	13.26	12.72	55.18	7.32
1999-00	141	1.03	12.89	12.62	52.04	6.71
2000-01	135	1.06	12.69	12.13	54.82	6.96
May 1						
1991-92	39	0.93	13.57	14.81	54.56	7.42
1992-93	63	0.94	13.22	14.34	55.78	7.38
1993-94	84	0.87	13.25	15.34	55.39	7.34
1994-95	45	0.79	12.57	16.21	56.04	7.06
1995-96	75	0.89	12.72	14.46	53.94	6.87
1996-97	71	0.90	13.15	14.94	54.18	7.14
1997-98	60	0.85	13.51	16.07	54.78	7.41
1998-99	52	0.90	13.80	15.42	54.45	7.52
1999-00	91	0.93	13.40	14.59	52.55	7.04
2000-01	97	0.93	12.87	13.99	53.91	6.95
June 1						
1991-92 1/						
1992-93	15	0.84	13.88	16.74	55.20	7.68
1993-94	23	0.78	13.22	17.31	54.64	7.23
1994-95	10	0.72	12.87	18.09	56.26	7.24
1995-96	17	0.82	12.96	16.14	53.52	6.94
1996-97	23	0.76	13.34	17.92	54.01	7.21
1997-98	10	0.71	13.74	19.72	54.57	7.52
1998-99 1/						
1999-00	27	0.81	13.61	16.96	51.05	6.96
2000-01	38	0.83	12.90	15.87	53.83	6.96

1/ Too few samples to test.

EARLY ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1991-92 (39 groves)					
Oct 1	1.00	9.74	9.97	49.34	4.80
Nov 1	0.82	10.41	12.84	52.00	5.42
Dec 1	0.74	11.45	15.76	51.48	5.90
Jan 1	0.76	12.17	16.33	49.98	6.09
1992-93 (57 groves)					
Oct 1	1.15	9.32	8.35	48.11	4.48
Nov 1	0.99	10.11	10.60	51.00	5.15
Dec 1	0.80	11.30	14.52	51.20	5.78
Jan 1	0.77	12.00	15.94	51.10	6.13
1993-94 (61 groves)					
Oct 1	1.37	9.76	7.31	46.32	4.52
Nov 1	1.04	10.34	10.23	49.74	5.14
Dec 1	0.85	11.39	13.62	51.83	5.90
Jan 1	0.85	12.19	14.66	51.24	6.24
1994-95 (45 groves)					
Oct 1	0.96	9.59	10.24	50.49	4.83
Nov 1	0.76	10.24	13.87	52.41	5.38
Dec 1	0.68	10.76	16.18	52.79	5.69
Jan 1	0.66	11.29	17.57	48.77	5.52
1995-96 (42 groves)					
Oct 1	1.07	9.37	8.98	50.53	4.73
Nov 1	0.80	9.93	12.90	53.64	5.33
Dec 1	0.77	10.64	14.14	51.93	5.52
Jan 1	0.77	11.45	15.22	52.27	5.99

Continued

EARLY ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01 (continued)

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1996-97 (55 groves)					
Oct 1	1.20	9.76	8.39	48.03	4.69
Nov 1	0.95	10.22	11.11	50.53	5.16
Dec 1	0.83	11.06	13.45	51.77	5.72
Jan 1	0.79	11.81	15.09	50.53	5.96
1997-98 (57 groves)					
Sep 1	1.32	9.31	7.14	45.47	4.23
Oct 1	1.02	9.81	9.83	47.68	4.67
Nov 1	0.87	10.50	12.26	49.61	5.21
Dec 1	0.78	11.33	14.67	50.85	5.76
Jan 1	0.74	11.91	16.35	49.58	5.90
1998-99 (68 groves)					
Sep 1	1.76	9.51	5.54	42.41	4.03
Oct 1	1.17	9.29	8.03	47.84	4.44
Nov 1	0.93	10.04	11.02	50.85	5.10
Dec 1	0.74	11.07	15.14	51.92	5.75
Jan 1	0.68	11.63	17.18	51.68	6.01
1999-00 (79 groves)					
Sep 1	1.77	9.33	5.39	41.24	3.84
Oct 1	1.24	9.32	7.64	46.31	4.31
Nov 1	0.96	9.70	10.31	50.24	4.87
Dec 1	0.83	10.81	13.27	50.86	5.49
Jan 1	0.77	11.51	14.96	50.11	5.76
2000-01 (75 groves)					
Sep 1	1.67	9.81	5.98	42.42	4.16
Oct 1	1.13	9.86	8.88	48.45	4.77
Nov 1	0.98	10.77	11.25	51.09	5.49
Dec 1	0.90	11.50	13.01	50.80	5.83
Jan 1	0.83	12.21	14.97	50.69	6.17

MIDSEASON ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1991-92 (36 groves)					
Oct 1	1.23	9.58	8.08	51.57	4.93
Nov 1	1.03	10.35	10.34	52.50	5.43
Dec 1	0.89	11.63	13.28	52.13	6.06
Jan 1	0.90	12.44	14.27	51.14	6.36
1992-93 (49 groves)					
Oct 1	1.40	9.12	6.70	49.18	4.49
Nov 1	1.22	10.10	8.48	52.64	5.32
Dec 1	1.01	11.39	11.56	53.01	6.04
Jan 1	0.97	12.04	12.79	52.33	6.30
1993-94 (44 groves)					
Oct 1	1.64	9.38	5.85	45.76	4.29
Nov 1	1.26	9.95	8.12	50.54	5.03
Dec 1	1.01	11.08	11.24	53.32	5.90
Jan 1	1.00	12.00	12.23	52.72	6.33
1994-95 (40 groves)					
Oct 1	1.19	9.21	7.89	51.13	4.71
Nov 1	0.92	10.13	11.37	54.45	5.52
Dec 1	0.83	10.94	13.50	55.11	6.03
Jan 1	0.79	11.60	14.77	52.39	6.09
1995-96 (40 groves)					
Oct 1	1.25	9.24	7.48	51.74	4.79
Nov 1	0.96	9.95	10.61	55.72	5.55
Dec 1	0.89	10.95	12.64	53.50	5.85
Jan 1	0.85	11.81	14.24	53.86	6.37

Continued

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01 (continued)

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1996-97 (43 groves)					
Oct 1	1.43	9.83	6.98	48.65	4.79
Nov 1	1.13	10.26	9.37	52.39	5.37
Dec 1	0.99	11.39	11.81	53.17	6.05
Jan 1	0.90	12.13	13.78	51.91	6.29
1997-98 (43 groves)					
Sep 1	1.58	9.15	5.93	45.25	4.14
Oct 1	1.17	9.45	8.30	50.12	4.74
Nov 1	1.01	10.33	10.55	51.94	5.37
Dec 1	0.89	11.40	13.09	52.08	5.94
Jan 1	0.82	12.06	15.07	51.12	6.17
1998-99 (47 groves)					
Sep 1	1.96	9.43	4.92	42.52	4.01
Oct 1	1.30	9.16	7.19	48.38	4.43
Nov 1	1.06	10.01	9.57	52.91	5.29
Dec 1	0.84	11.19	13.57	53.91	6.04
Jan 1	0.78	12.28	15.99	53.17	6.53
1999-00 (43 groves)					
Sep 1	2.01	9.11	4.59	39.06	3.56
Oct 1	1.43	9.06	6.44	46.61	4.23
Nov 1	1.10	9.48	8.73	51.14	4.85
Dec 1	0.93	10.89	11.87	51.92	5.66
Jan 1	0.89	12.02	13.65	51.38	6.17
2000-01 (47 groves)					
Sep 1	1.78	9.31	5.28	44.60	4.16
Oct 1	1.23	9.49	7.87	50.00	4.74
Nov 1	1.07	10.48	10.11	53.71	5.63
Dec 1	0.95	11.39	12.19	53.32	6.08
Jan 1	0.88	12.09	14.03	53.34	6.45

LATE ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1991-92 (39 groves)					
Oct 1	2.24	8.81	3.98	48.38	4.26
Nov 1	1.87	9.43	5.12	51.34	4.84
Dec 1	1.55	10.53	6.87	53.62	5.65
Jan 1	1.40	11.48	8.33	54.16	6.22
Feb 1	1.29	12.22	9.64	53.25	6.51
Mar 1	1.19	12.83	10.92	53.69	6.89
Apr 1	1.05	13.14	12.60	53.76	7.07
May 1	0.93	13.57	14.81	54.56	7.42
1992-93 (63 groves)					
Oct 1	2.55	8.58	3.41	45.97	3.94
Nov 1	2.15	9.13	4.39	50.82	4.64
Dec 1	1.69	10.13	6.08	53.29	5.40
Jan 1	1.53	11.05	7.31	53.91	5.96
Feb 1	1.28	11.88	9.39	54.87	6.52
Mar 1	1.22	12.50	10.33	56.10	7.02
Apr 1	1.06	12.84	12.23	56.20	7.22
May 1	0.94	13.22	14.34	55.78	7.38
1993-94 (84 groves)					
Oct 1	2.73	8.97	3.32	44.61	4.00
Nov 1	2.20	8.97	4.14	48.62	4.37
Dec 1	1.75	9.86	5.73	53.03	5.23
Jan 1	1.61	10.71	6.75	54.34	5.82
Feb 1	1.37	11.83	8.76	54.15	6.41
Mar 1	1.21	12.47	10.40	55.14	6.88
Apr 1	1.06	12.74	12.07	55.51	7.08
May 1	0.87	13.25	15.34	55.39	7.34
1994-95 (45 groves)					
Oct 1	2.25	8.76	3.94	48.95	4.29
Nov 1	1.74	9.30	5.45	53.75	5.00
Dec 1	1.43	10.00	7.08	55.86	5.59
Jan 1	1.28	10.69	8.49	56.31	6.02
Feb 1	1.16	11.50	10.02	56.01	6.45
Mar 1	1.09	12.15	11.30	55.93	6.81
Apr 1	0.95	12.30	13.06	54.98	6.77
May 1	0.79	12.57	16.21	56.04	7.06

Continued

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01 (continued)

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1995-96 (75 groves)					
Oct 1	2.46	8.61	3.54	47.64	4.10
Nov 1	1.83	8.67	4.84	52.88	4.59
Dec 1	1.60	9.52	6.04	53.66	5.12
Jan 1	1.42	10.51	7.50	54.10	5.69
Feb 1	1.25	11.36	9.19	55.19	6.28
Mar 1	1.16	11.85	10.32	54.42	6.45
Apr 1	1.04	12.23	11.90	51.66	6.32
May 1	0.89	12.72	14.46	53.94	6.87
1996-97 (71 groves)					
Oct 1	2.50	9.00	3.65	46.32	4.17
Nov 1	2.05	9.36	4.62	49.50	4.63
Dec 1	1.70	10.37	6.17	53.68	5.57
Jan 1	1.48	11.19	7.66	54.09	6.06
Feb 1	1.34	11.99	9.08	54.72	6.56
Mar 1	1.16	12.48	10.92	54.52	6.82
Apr 1	0.98	12.84	13.20	55.00	7.08
May 1	0.90	13.15	14.94	54.18	7.14
1997-98 (60 groves)					
Oct 1	2.18	8.86	4.13	47.55	4.22
Nov 1	1.86	9.44	5.18	50.82	4.80
Dec 1	1.51	10.23	6.90	52.69	5.40
Jan 1	1.28	11.02	8.73	54.46	6.01
Feb 1	1.14	11.86	10.57	55.31	6.56
Mar 1	1.06	12.73	12.21	54.40	6.93
Apr 1	0.99	12.91	13.26	53.74	6.94
May 1	0.85	13.51	16.07	54.78	7.41
1998-99 (52 groves)					
Oct 1	2.51	8.71	3.56	45.33	3.95
Nov 1	2.09	9.05	4.37	50.42	4.56
Dec 1	1.64	10.01	6.19	53.07	5.31
Jan 1	1.38	10.85	7.96	54.26	5.88
Feb 1	1.30	12.08	9.42	55.04	6.65
Mar 1	1.22	12.65	10.76	53.46	6.78
Apr 1	1.07	13.38	12.62	55.38	7.42
May 1	0.90	13.80	15.42	54.45	7.52

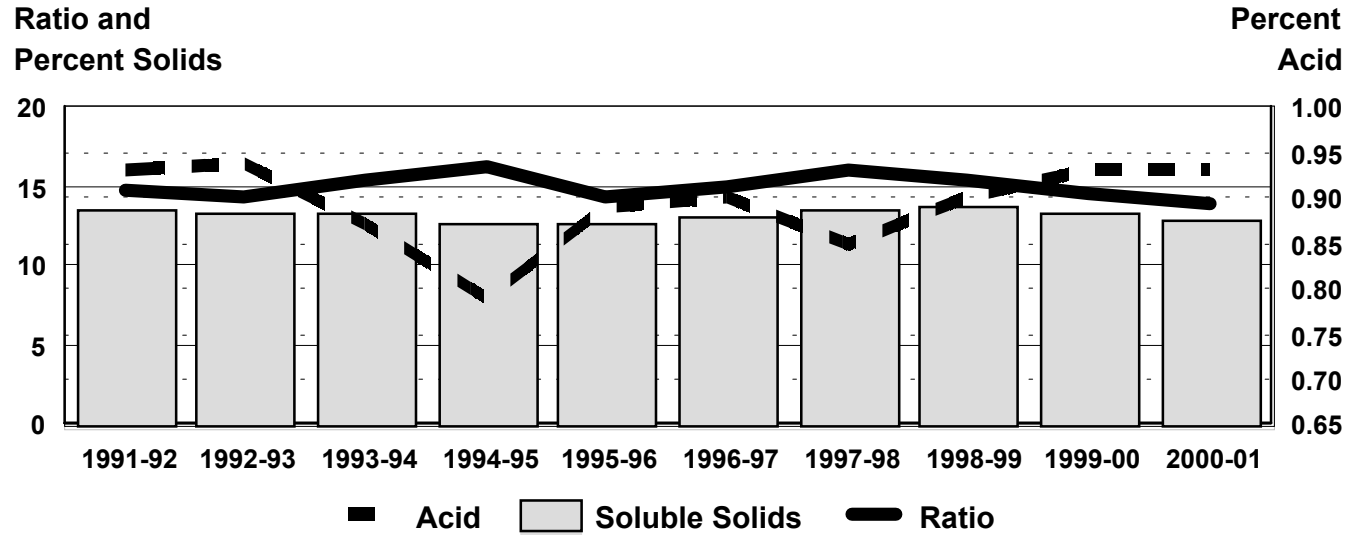
Continued

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, within season 1991-92 through 2000-01 (continued)

Season (number) and date	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Percent			Pounds	
1999-00 (91 groves)					
Oct 1	2.53	8.61	3.44	43.28	3.73
Nov 1	2.12	8.77	4.20	47.60	4.18
Dec 1	1.73	9.87	5.77	51.51	5.09
Jan 1	1.51	10.84	7.27	52.39	5.68
Feb 1	1.36	11.74	8.70	52.75	6.20
Mar 1	1.23	12.55	10.28	52.46	6.59
Apr 1	1.05	12.96	12.43	52.27	6.78
May 1	0.93	13.40	14.59	52.55	7.04
2000-01 (97 groves)					
Oct 1	2.48	8.76	3.58	46.22	4.05
Nov 1	2.04	9.43	4.70	50.56	4.77
Dec 1	1.76	10.31	5.93	52.44	5.41
Jan 1	1.54	11.03	7.28	54.08	5.97
Feb 1	1.42	11.79	8.38	53.49	6.31
Mar 1	1.22	12.45	10.31	53.91	6.71
Apr 1	1.07	12.62	11.97	54.92	6.94
May 1	0.93	12.87	13.99	53.91	6.95

LATE ORANGES

Unadjusted Averages for Regular Bloom Fruit
May 1



EARLY ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
					Percent acid					
Sep 1	NA	NA	NA	NA	NA	NA	1.32	1.76	1.77	1.67
Oct 1	1.00	1.15	1.37	0.96	1.07	1.20	1.02	1.17	1.24	1.13
Nov 1	0.82	0.99	1.04	0.76	0.80	0.95	0.87	0.93	0.96	0.98
Dec 1	0.74	0.80	0.85	0.68	0.77	0.83	0.78	0.74	0.83	0.90
Jan 1	0.76	0.77	0.85	0.66	0.77	0.79	0.74	0.68	0.77	0.83
					Percent soluble solids					
Sep 1	NA	NA	NA	NA	NA	NA	9.31	9.51	9.33	9.81
Oct 1	9.74	9.32	9.76	9.59	9.37	9.76	9.81	9.29	9.32	9.86
Nov 1	10.41	10.11	10.34	10.24	9.93	10.22	10.50	10.04	9.70	10.77
Dec 1	11.45	11.30	11.39	10.76	10.64	11.06	11.33	11.07	10.81	11.50
Jan 1	12.17	12.00	12.19	11.29	11.45	11.81	11.91	11.63	11.51	12.21
					Ratio					
Sep 1	NA	NA	NA	NA	NA	NA	7.14	5.54	5.39	5.98
Oct 1	9.97	8.35	7.31	10.24	8.98	8.39	9.83	8.03	7.64	8.88
Nov 1	12.84	10.60	10.23	13.87	12.90	11.11	12.26	11.02	10.31	11.25
Dec 1	15.76	14.52	13.62	16.18	14.14	13.45	14.67	15.14	13.27	13.01
Jan 1	16.33	15.94	14.66	17.57	15.22	15.09	16.35	17.18	14.96	14.97
					Pounds juice per box					
Sep 1	NA	NA	NA	NA	NA	NA	45.47	42.41	41.24	42.42
Oct 1	49.34	48.11	46.32	50.49	50.53	48.03	47.68	47.84	46.31	48.45
Nov 1	52.00	51.00	49.74	52.41	53.64	50.53	49.61	50.85	50.24	51.09
Dec 1	51.48	51.20	51.83	52.79	51.93	51.77	50.85	51.92	50.86	50.80
Jan 1	49.98	51.10	51.24	48.77	52.27	50.53	49.58	51.68	50.11	50.69
					Pounds solids per box					
Sep 1	NA	NA	NA	NA	NA	NA	4.23	4.03	3.84	4.16
Oct 1	4.80	4.48	4.52	4.83	4.73	4.69	4.67	4.44	4.31	4.77
Nov 1	5.42	5.15	5.14	5.38	5.33	5.16	5.21	5.10	4.87	5.49
Dec 1	5.90	5.78	5.90	5.69	5.52	5.72	5.76	5.75	5.49	5.83
Jan 1	6.09	6.13	6.24	5.52	5.99	5.96	5.90	6.01	5.76	6.17

MIDSEASON ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
					Percent acid					
Sep 1	NA	NA	NA	NA	NA	NA	1.58	1.96	2.01	1.78
Oct 1	1.23	1.40	1.64	1.19	1.25	1.43	1.17	1.30	1.43	1.23
Nov 1	1.03	1.22	1.26	0.92	0.96	1.13	1.01	1.06	1.10	1.07
Dec 1	0.89	1.01	1.01	0.83	0.89	0.99	0.89	0.84	0.93	0.95
Jan 1	0.90	0.97	1.00	0.79	0.85	0.90	0.82	0.78	0.89	0.88
					Percent soluble solids					
Sep 1	NA	NA	NA	NA	NA	NA	9.15	9.43	9.11	9.31
Oct 1	9.58	9.12	9.38	9.21	9.24	9.83	9.45	9.16	9.06	9.49
Nov 1	10.35	10.10	9.95	10.13	9.95	10.26	10.33	10.01	9.48	10.48
Dec 1	11.63	11.39	11.08	10.94	10.95	11.39	11.40	11.19	10.89	11.39
Jan 1	12.44	12.04	12.00	11.60	11.81	12.13	12.06	12.28	12.02	12.09
					Ratio					
Sep 1	NA	NA	NA	NA	NA	NA	5.93	4.92	4.59	5.28
Oct 1	8.08	6.70	5.85	7.89	7.48	6.98	8.30	7.19	6.44	7.87
Nov 1	10.34	8.48	8.12	11.37	10.61	9.37	10.55	9.57	8.73	10.11
Dec 1	13.28	11.56	11.24	13.50	12.64	11.81	13.09	13.57	11.87	12.19
Jan 1	14.27	12.79	12.23	14.77	14.24	13.78	15.07	15.99	13.65	14.03
					Pounds juice per box					
Sep 1	NA	NA	NA	NA	NA	NA	45.25	42.52	39.06	44.60
Oct 1	51.57	49.18	45.76	51.13	51.74	48.65	50.12	48.38	46.61	50.00
Nov 1	52.50	52.64	50.54	54.45	55.72	52.39	51.94	52.91	51.14	53.71
Dec 1	52.13	53.01	53.32	55.11	53.50	53.17	52.08	53.91	51.92	53.32
Jan 1	51.14	52.33	52.72	52.39	53.86	51.91	51.12	53.17	51.38	53.34
					Pounds solids per box					
Sep 1	NA	NA	NA	NA	NA	NA	4.14	4.01	3.56	4.16
Oct 1	4.93	4.49	4.29	4.71	4.79	4.79	4.74	4.43	4.23	4.74
Nov 1	5.43	5.32	5.03	5.52	5.55	5.37	5.37	5.29	4.85	5.63
Dec 1	6.06	6.04	5.90	6.03	5.85	6.05	5.94	6.04	5.66	6.08
Jan 1	6.36	6.30	6.33	6.09	6.37	6.29	6.17	6.53	6.17	6.45

LATE ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Percent acid										
Oct 1	2.24	2.55	2.73	2.25	2.46	2.50	2.18	2.51	2.53	2.48
Nov 1	1.87	2.15	2.20	1.74	1.83	2.05	1.86	2.09	2.12	2.04
Dec 1	1.55	1.69	1.75	1.43	1.60	1.70	1.51	1.64	1.73	1.76
Jan 1	1.40	1.53	1.61	1.28	1.42	1.48	1.28	1.38	1.51	1.54
Feb 1	1.29	1.28	1.37	1.16	1.25	1.34	1.14	1.30	1.36	1.42
Mar 1	1.19	1.22	1.21	1.09	1.16	1.16	1.06	1.22	1.23	1.22
Apr 1	1.05	1.06	1.06	0.95	1.04	0.98	0.99	1.07	1.05	1.07
May 1	0.93	0.94	0.87	0.79	0.89	0.90	0.85	0.90	0.93	0.93
Percent soluble solids										
Oct 1	8.81	8.58	8.97	8.76	8.61	9.00	8.86	8.71	8.61	8.76
Nov 1	9.43	9.13	8.97	9.30	8.67	9.36	9.44	9.05	8.77	9.43
Dec 1	10.53	10.13	9.86	10.00	9.52	10.37	10.23	10.01	9.87	10.31
Jan 1	11.48	11.05	10.71	10.69	10.51	11.19	11.02	10.85	10.84	11.03
Feb 1	12.22	11.88	11.83	11.50	11.36	11.99	11.86	12.08	11.74	11.79
Mar 1	12.83	12.50	12.47	12.15	11.85	12.48	12.73	12.65	12.55	12.45
Apr 1	13.14	12.84	12.74	12.30	12.23	12.84	12.91	13.38	12.96	12.62
May 1	13.57	13.22	13.25	12.57	12.72	13.15	13.51	13.80	13.40	12.87
Ratio										
Oct 1	3.98	3.41	3.32	3.94	3.54	3.65	4.13	3.56	3.44	3.58
Nov 1	5.12	4.39	4.14	5.45	4.84	4.62	5.18	4.37	4.20	4.70
Dec 1	6.87	6.08	5.73	7.08	6.04	6.17	6.90	6.19	5.77	5.93
Jan 1	8.33	7.31	6.75	8.49	7.50	7.66	8.73	7.96	7.27	7.28
Feb 1	9.64	9.39	8.76	10.02	9.19	9.08	10.57	9.42	8.70	8.38
Mar 1	10.92	10.33	10.40	11.30	10.32	10.92	12.21	10.76	10.28	10.31
Apr 1	12.60	12.23	12.07	13.06	11.90	13.20	13.26	12.62	12.43	11.97
May 1	14.81	14.34	15.34	16.21	14.46	14.94	16.07	15.42	14.59	13.99
Pounds juice per box										
Oct 1	48.38	45.97	44.61	48.95	47.64	46.32	47.55	45.33	43.28	46.22
Nov 1	51.34	50.82	48.62	53.75	52.88	49.50	50.82	50.42	47.60	50.56
Dec 1	53.62	53.29	53.03	55.86	53.66	53.68	52.69	53.07	51.51	52.44
Jan 1	54.16	53.91	54.34	56.31	54.10	54.09	54.46	54.26	52.39	54.08
Feb 1	53.25	54.87	54.15	56.01	55.19	54.72	55.31	55.04	52.75	53.49
Mar 1	53.69	56.10	55.14	55.93	54.42	54.52	54.40	53.46	52.46	53.91
Apr 1	53.76	56.20	55.51	54.98	51.66	55.00	53.74	55.38	52.27	54.92
May 1	54.56	55.78	55.39	56.04	53.94	54.18	54.78	54.45	52.55	53.91

Continued

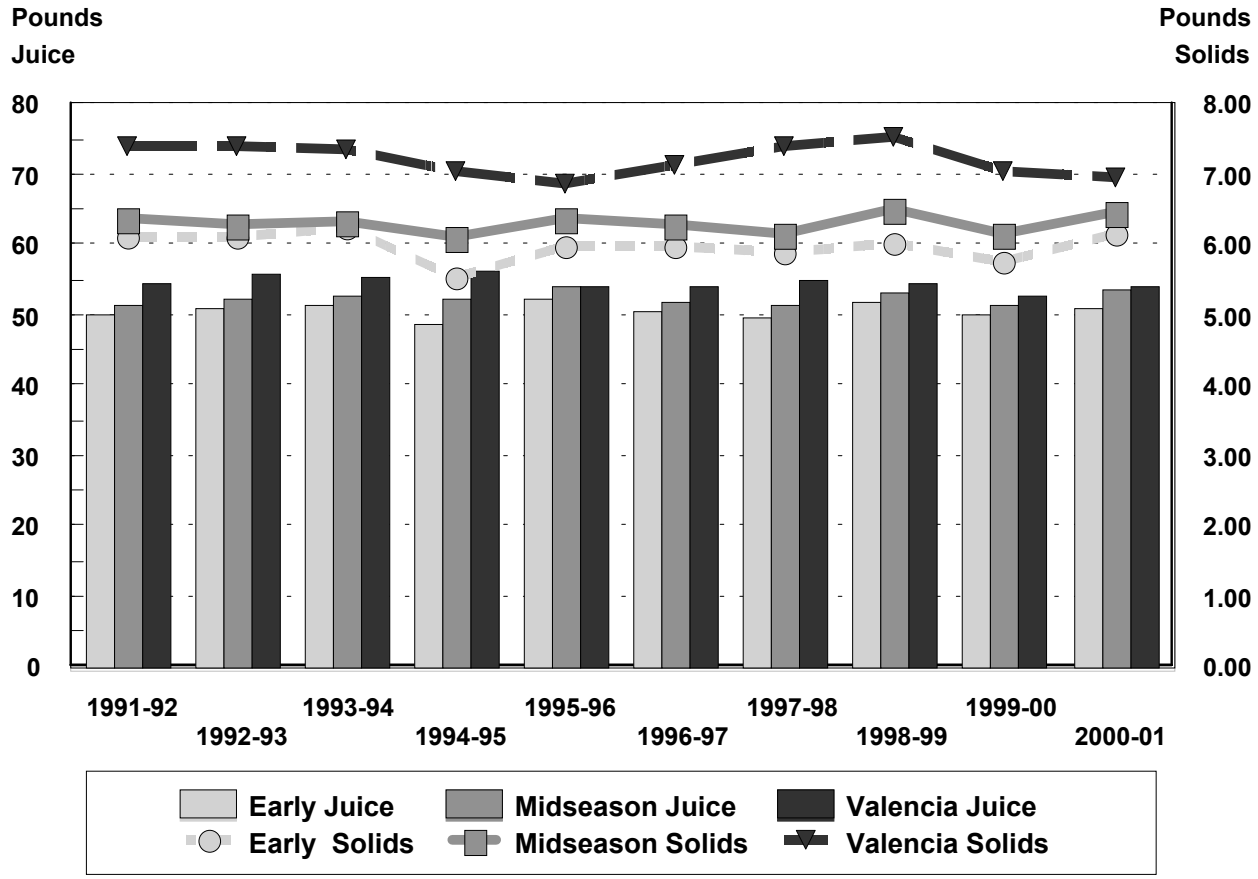
LATE ORANGES

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01 (continued)

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
					Pounds solids per box					
Oct 1	4.26	3.94	4.00	4.29	4.10	4.17	4.22	3.95	3.73	4.05
Nov 1	4.84	4.64	4.37	5.00	4.59	4.63	4.80	4.56	4.18	4.77
Dec 1	5.65	5.40	5.23	5.59	5.12	5.57	5.40	5.31	5.09	5.41
Jan 1	6.22	5.96	5.82	6.02	5.69	6.06	6.01	5.88	5.68	5.97
Feb 1	6.51	6.52	6.41	6.45	6.28	6.56	6.56	6.65	6.20	6.31
Mar 1	6.89	7.02	6.88	6.81	6.45	6.82	6.93	6.78	6.59	6.71
Apr 1	7.07	7.22	7.08	6.77	6.32	7.08	6.94	7.42	6.78	6.94
May 1	7.42	7.38	7.34	7.06	6.87	7.14	7.41	7.52	7.04	6.95

SOLIDS AND JUICE PER BOX

Unadjusted Averages for Regular Bloom Fruit
As of January 1 for Early and Midseason Oranges and May 1 for Late Oranges



WHITE SEEDLESS GRAPEFRUIT

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
September 1						
1997-98	50	1.60	9.56	6.00	34.56	3.31
1998-99	50	1.80	10.08	5.62	30.83	3.10
1999-00	50	1.83	10.24	5.61	29.15	2.97
2000-01	50	1.82	10.14	5.58	32.47	3.29
October 1						
1991-92	49	1.43	9.90	7.00	38.67	3.83
1992-93	50	1.47	9.84	7.49	37.61	3.70
1993-94	50	1.69	10.36	6.16	35.17	3.63
1994-95	49	1.39	9.56	6.92	39.54	3.78
1995-96	50	1.55	9.63	6.24	37.08	3.57
1996-97	49	1.64	10.39	6.35	37.79	3.92
1997-98	50	1.43	9.74	6.85	38.94	3.80
1998-99	49	1.55	9.78	6.33	35.97	3.51
1999-00	49	1.62	9.81	6.11	34.56	3.38
2000-01	50	1.58	10.23	6.49	36.64	3.74
November 1						
1991-92	49	1.30	9.91	7.67	42.53	4.21
1992-93	47	1.44	10.03	7.01	42.07	4.22
1993-94	50	1.50	10.17	6.84	38.89	3.96
1994-95	46	1.25	9.61	7.78	43.49	4.18
1995-96	45	1.34	9.49	7.12	40.83	3.87
1996-97	49	1.45	10.11	6.99	40.62	4.11
1997-98	50	1.34	9.94	7.46	41.61	4.14
1998-99	47	1.48	10.10	6.87	38.66	3.90
1999-00	49	1.44	9.59	6.71	38.04	3.65
2000-01	48	1.50	10.41	6.96	40.45	4.20
December 1						
1991-92	44	1.31	10.26	7.88	44.04	4.51
1992-93	46	1.34	10.23	7.70	43.29	4.42
1993-94	49	1.42	10.51	7.43	42.81	4.50
1994-95	46	1.18	9.55	8.12	44.93	4.29
1995-96	44	1.32	9.73	7.41	42.67	4.15
1996-97	49	1.43	10.44	7.32	43.19	4.51
1997-98	49	1.27	9.91	7.88	43.94	4.35
1998-99	45	1.36	10.33	7.64	42.99	4.44
1999-00	48	1.42	10.07	7.16	42.31	4.25
2000-01	46	1.47	10.78	7.36	41.79	4.50

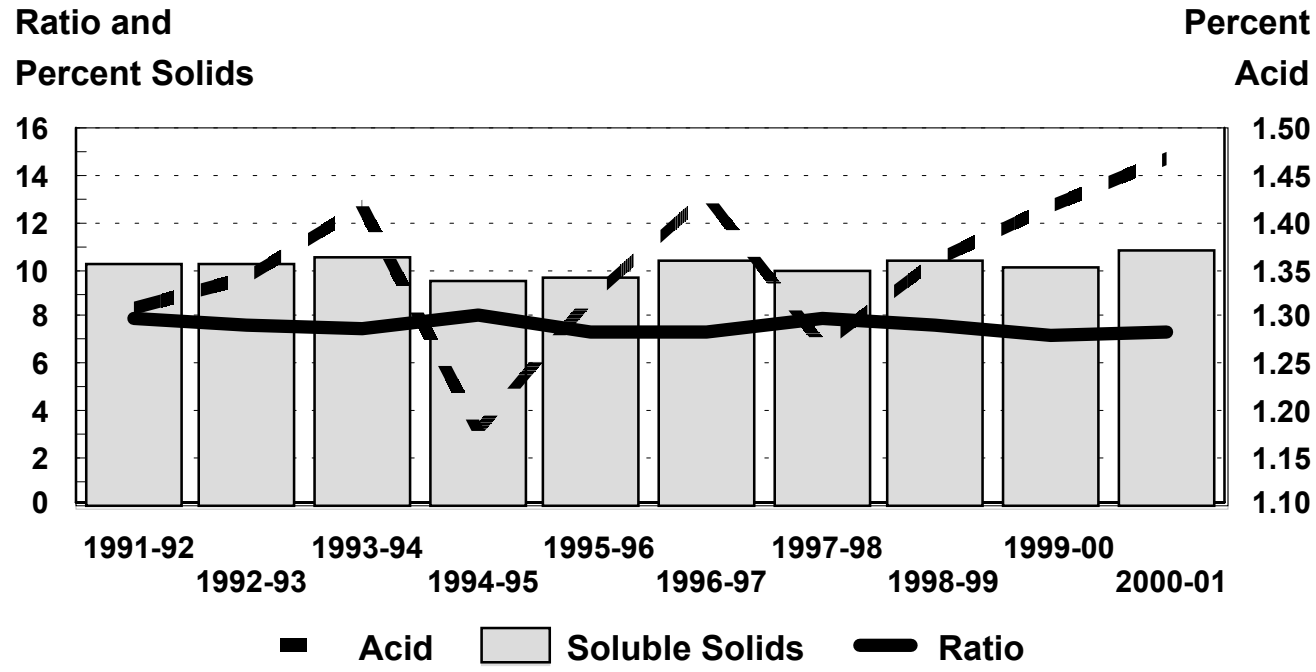
COLORED SEEDLESS GRAPEFRUIT

Maturity and yield test results: Unadjusted averages for regular bloom fruit from sample groves 1991-92 through 2000-01

Crop year	Sample groves	Acid	Soluble solids	Ratio	Juice per box	Solids per box
	Number	Percent			Pounds	
September 1						
1997-98	50	1.54	9.63	6.27	35.08	3.38
1998-99	50	1.78	9.94	5.60	31.75	3.15
1999-00	50	1.75	10.07	5.79	29.02	2.92
2000-01	50	1.76	10.36	5.91	33.45	3.47
October 1						
1991-92	48	1.37	9.73	7.13	35.29	3.44
1992-93	50	1.45	9.65	6.69	37.77	3.65
1993-94	48	1.65	10.37	6.32	35.05	3.63
1994-95	49	1.33	9.54	7.18	40.41	3.86
1995-96	49	1.47	9.58	6.56	37.19	3.56
1996-97	47	1.57	10.42	6.71	38.36	3.99
1997-98	45	1.38	9.75	7.09	39.83	3.89
1998-99	50	1.49	9.64	6.50	35.10	3.38
1999-00	48	1.55	9.73	6.33	35.31	3.44
2000-01	48	1.51	10.45	6.96	37.18	3.88
November 1						
1991-92	39	1.22	9.73	8.02	41.33	4.03
1992-93	47	1.41	10.09	7.19	41.37	4.17
1993-94	46	1.45	10.20	7.06	39.24	4.01
1994-95	42	1.21	9.81	8.15	44.26	4.34
1995-96	39	1.24	9.56	7.76	41.82	4.00
1996-97	40	1.37	10.06	7.37	41.71	4.19
1997-98	43	1.30	9.92	7.67	43.56	4.33
1998-99	44	1.37	9.99	7.32	40.18	4.01
1999-00	46	1.38	9.67	7.05	38.08	3.68
2000-01	47	1.42	10.69	7.56	40.58	4.34
December 1						
1991-92	47	1.20	10.55	8.86	45.59	4.81
1992-93	45	1.28	10.35	8.10	43.78	4.54
1993-94	40	1.41	10.65	7.61	41.84	4.46
1994-95	39	1.11	9.88	8.98	45.65	4.52
1995-96	38	1.25	10.03	8.05	42.85	4.30
1996-97	39	1.35	10.55	7.89	44.64	4.71
1997-98	40	1.22	10.14	8.35	44.92	4.56
1998-99	39	1.29	10.42	8.09	43.24	4.50
1999-00	41	1.36	10.20	7.60	45.34	4.63
2000-01	44	1.39	10.88	7.87	43.32	4.71

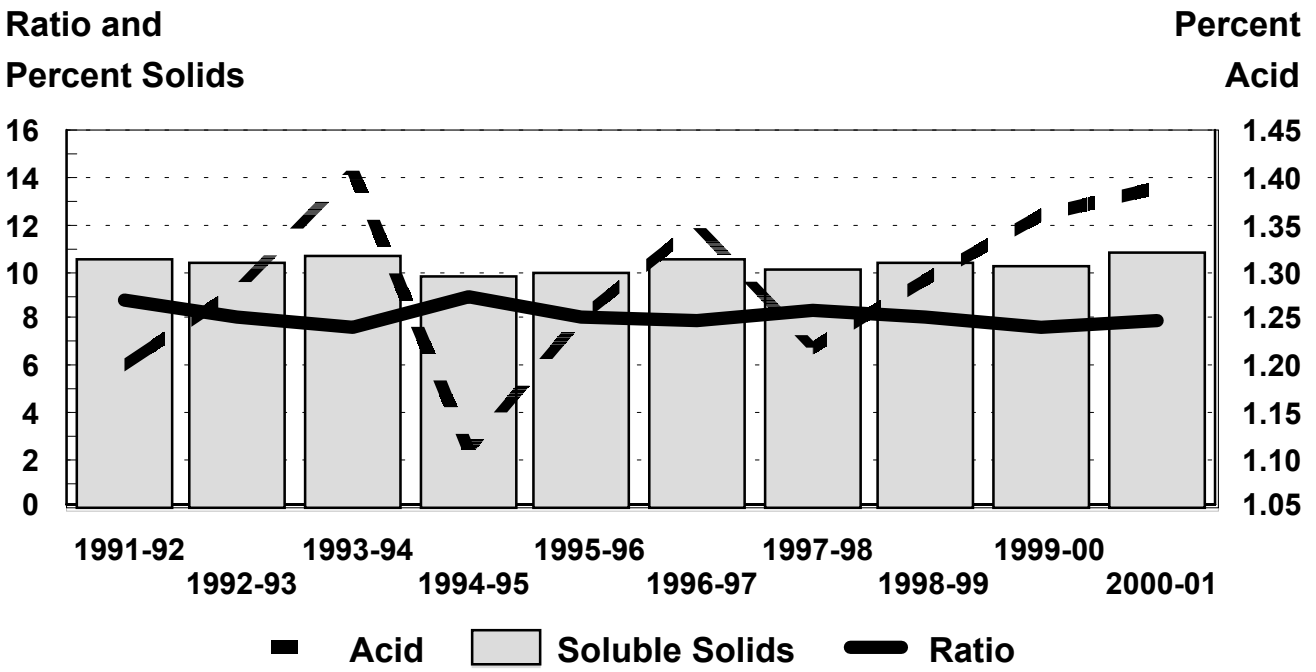
WHITE SEEDLESS GRAPEFRUIT

Unadjusted Averages for Regular Bloom Fruit
December 1



COLORED SEEDLESS GRAPEFRUIT

Unadjusted Averages for Regular Bloom Fruit
December 1



WHITE SEEDLESS GRAPEFRUIT

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
					Percent acid					
Sep 1	NA	NA	NA	NA	NA	NA	1.60	1.81	1.85	1.83
Oct 1	1.44	1.48	1.69	1.39	1.57	1.64	1.42	1.56	1.63	1.58
Nov 1	1.31	1.44	1.50	1.25	1.34	1.45	1.34	1.48	1.45	1.50
Dec 1	1.31	1.34	1.42	1.18	1.32	1.43	1.27	1.36	1.42	1.47
					Percent soluble solids					
Sep 1	NA	NA	NA	NA	NA	NA	9.55	10.10	10.29	10.15
Oct 1	9.92	9.86	10.38	9.55	9.65	10.39	9.73	9.76	9.82	10.22
Nov 1	9.92	10.02	10.19	9.61	9.48	10.11	9.93	10.10	9.60	10.38
Dec 1	10.26	10.23	10.51	9.55	9.73	10.44	9.91	10.33	10.07	10.78
					Ratio					
Sep 1	NA	NA	NA	NA	NA	NA	6.00	5.59	5.60	5.47
Oct 1	6.93	7.56	6.17	6.89	6.20	6.35	6.86	6.32	6.07	6.52
Nov 1	7.60	6.99	6.84	7.78	7.11	6.99	7.45	6.86	6.67	6.98
Dec 1	7.88	7.70	7.43	8.12	7.41	7.32	7.88	7.64	7.16	7.36
					Pounds juice per box					
Sep 1	NA	NA	NA	NA	NA	NA	34.47	30.67	28.77	32.70
Oct 1	38.76	37.60	35.16	39.87	36.84	37.79	38.94	35.95	34.37	36.84
Nov 1	42.47	42.02	39.26	43.49	40.76	40.62	41.62	38.65	37.92	40.56
Dec 1	44.04	43.29	42.81	44.93	42.67	43.19	43.94	42.99	42.31	41.79
					Pounds solids per box					
Sep 1	NA	NA	NA	NA	NA	NA	3.29	3.09	2.96	3.32
Oct 1	3.85	3.70	3.64	3.81	3.55	3.92	3.80	3.50	3.37	3.76
Nov 1	4.21	4.21	4.00	4.18	3.86	4.11	4.14	3.90	3.64	4.20
Dec 1	4.51	4.42	4.50	4.29	4.15	4.51	4.35	4.44	4.25	4.50

COLORED SEEDLESS GRAPEFRUIT

Maturity and yield test results: Unadjusted matched averages for regular bloom fruit from identical sample trees, seasonal comparisons 1991-92 through 2000-01

Date	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Percent acid										
Sep 1	NA	NA	NA	NA	NA	NA	1.56	1.79	1.77	1.76
Oct 1	1.38	1.47	1.66	1.35	1.48	1.58	1.39	1.49	1.57	1.51
Nov 1	1.24	1.40	1.46	1.21	1.24	1.37	1.31	1.38	1.38	1.43
Dec 1	1.20	1.28	1.41	1.11	1.25	1.35	1.22	1.29	1.36	1.39
Percent soluble solids										
Sep 1	NA	NA	NA	NA	NA	NA	9.69	10.01	10.17	10.37
Oct 1	9.95	9.71	10.45	9.67	9.59	10.43	9.80	9.64	9.78	10.44
Nov 1	9.90	10.08	10.24	9.85	9.57	10.07	9.96	10.04	9.72	10.68
Dec 1	10.55	10.35	10.65	9.88	10.03	10.55	10.14	10.42	10.20	10.88
Ratio										
Sep 1	NA	NA	NA	NA	NA	NA	6.23	5.60	5.77	5.91
Oct 1	7.27	6.65	6.33	7.17	6.55	6.67	7.08	6.50	6.29	6.96
Nov 1	8.05	7.20	7.07	8.17	7.76	7.37	7.64	7.30	7.06	7.53
Dec 1	8.86	8.10	7.61	8.98	8.05	7.89	8.35	8.09	7.60	7.87
Pounds juice per box										
Sep 1	NA	NA	NA	NA	NA	NA	35.13	31.30	28.29	33.37
Oct 1	35.77	37.68	34.75	40.77	36.65	38.12	39.98	34.88	35.08	37.15
Nov 1	42.15	41.38	39.56	44.24	41.86	41.66	43.65	40.27	37.58	40.53
Dec 1	45.59	43.78	41.84	45.65	42.85	44.64	44.92	43.24	45.34	43.52
Pounds solids per box										
Sep 1	NA	NA	NA	NA	NA	NA	3.40	3.13	2.88	3.46
Oct 1	3.56	3.66	3.63	3.94	3.51	3.97	3.92	3.36	3.43	3.87
Nov 1	4.18	4.17	4.05	4.36	4.00	4.19	4.35	4.04	3.65	4.33
Dec 1	4.81	4.54	4.46	4.52	4.30	4.71	4.56	4.50	4.63	4.71