

Texas Agricultural Extension Service

Texas Citrus Production, Utilization and Demand

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The Texas citrus industry was devastated by the December 1983 freeze which destroyed more than 47,000 of the Rio Grande Valley's 69,000 acres of citrus. Significant changes have occurred in the citrus industry, and recovery to pre-freeze production levels is still years away. It is unlikely that citrus acreage will return to more than three-fourths of pre-freeze levels. However, as growers continue to rehabilitate and replant orchards, all sectors of the industry are planning and implementing efforts to improve the overall position of Texas citrus in the marketplace.

Production and utilization data for Texas citrus during the recent post-freeze recovery do not accurately depict the past or anticipated future of the Texas citrus industry. Consequently, the 5-year period immediately preceding the 1983 freeze is used as the base to which the Texas citrus industry must return and ultimately surpass.

Although 90 countries worldwide produce oranges, six account for about 80 percent of

production. Five of 52 countries produce more than 90 percent of world grapefruit supplies. The U.S. produced about 31 percent of the world's fresh oranges and 68 percent of its fresh grapefruit (Table 1). Texas produced almost 10 percent of the world supply of fresh grapefruit, but less than 1 percent of its fresh oranges.

The U.S. exported 11.28 percent of its fresh grapefruit and 4.42 percent of its fresh orange production, which provided 37.27 and 10.89 percent of total world trade in those citrus fruits, respectively. Texas exported 7.35 percent of its fresh grapefruit production, which supplied 3.43 percent of the world supply. Texas exports of fresh oranges were negligible. By contrast, U.S. imports of fresh citrus amount to less than 2 percent of orange consumption and less than 1 percent of grapefruit. Most U.S. imports are from Mexico, particularly during September and October, before domestic harvest begins.

Citrus acreage data and trends indicate the extent of change occurring within the citrus industry and provide a base to project

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Table 1. Average annual production and export comparisons for fresh citrus during the 5-year period preceding the 1983 freeze (1978-79 through 1982-83 seasons, inclusive).

	Fresh Grapefruit			Fresh Oranges		
	Production	Exports	Percent	Production	Exports	Percent
	tons	tons	—	tons	tons	—
World	4,052,840	834,020	20.58	32,099,540	4,023,140	12.53
U.S.	2,756,380	310,860	11.28	9,904,180	438,240	4.42
Texas	389,200	28,600	7.35	223,924	196	0.09
	Percent of World					
U.S.	68.01	37.27	—	30.85	10.89	—
Texas	9.60	3.43	—	0.70	0.005	—

Source: Report on the Rio Grande Valley Citrus Industry, The Texas A&M University System.

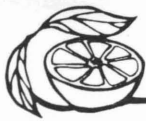


Table 2. Annual production, utilization and value of U.S. grapefruit by production area for 1978-79 through 1982-83 seasons.

Season	Production (tons)	Utilization		Value (\$1,000)	Fresh/total (percent)
		Fresh (tons)	Processed (tons)		
California/Arizona					
1978-79	272,465	154,350	118,115	36,967	56.65
1979-80	340,950	155,540	185,410	29,997	45.62
1980-81	353,220	198,150	155,070	48,338	56.10
1981-82	278,088	156,607	121,481	25,325	56.32
1982-83	325,249	196,450	128,799	31,189	60.40
Average	314,944	172,219	141,775	34,363	54.68
Percent of U.S. total	11.38	14.68	8.90	13.50	—
Florida					
1978-79	2,125,000	841,075	1,283,925	177,009	39.58
1979-80	2,329,000	828,793	1,500,207	246,458	35.59
1980-81	2,137,750	729,598	1,408,152	248,294	34.13
1981-82	2,044,250	710,558	1,333,692	165,540	34.76
1982-83	1,674,500	778,303	896,197	129,851	46.48
Average	2,062,100	777,665	1,284,435	193,430	37.71
Percent of U.S. total	74.54	66.30	80.64	76.01	—
Texas					
1978-79	360,000	160,000	200,000	17,640	44.44
1979-80	316,000	168,000	148,000	26,228	53.16
1980-81	268,000	186,000	82,000	27,269	69.40
1981-82	556,000	289,200	266,800	38,173	52.01
1982-83	448,000	312,000	136,000	24,148	69.64
Average	389,600	223,040	166,560	26,692	57.25
Percent of U.S. total	14.08	19.02	10.46	10.49	—

Source: *Citrus Fruits Production, Use and Value*, Crop Reporting Board, SRS, USDA.

future citrus production supplies. However, all three U.S. production areas—California/Arizona, Florida and Texas—have experienced significant acreage reductions during the past decade. Urban expansion and general economic conditions have been partly responsible, but a series of freezes caused serious acreage losses in Florida, as did the 1983 Texas freeze.

Nonetheless, orchard age, density, rootstocks, variety, management, climate and other factors determine orchard productivity. Consequently, actual production and utilization data are better indicators of supply and market share than are acreage data.

Grapefruit

Production, utilization and value for all grapefruit production in the U.S. are presented in Table 2 by production area for the five seasons pre-freeze. Texas ranked second in terms of production and both fresh and processed market use, supplying 14.08 percent of U.S. production and 19.02 percent of U.S. fresh fruit. While Florida supplied 66.3 percent of U.S. fresh grapefruit, it processed nearly twice as much as it shipped fresh.

Texas led the U.S. in fresh market utilization, shipping 57.25 percent of its total grapefruit production as fresh fruit. However, Texas grapefruit value was a distant third, as its 14.08 percent share of U.S. production only generated 10.49 percent of the total value. The California/Arizona grapefruit crop averaged \$109.10 per ton, Florida's averaged \$93.80 per ton, but Texas grapefruit was worth only \$68.51 per ton (calculated by dividing average value by average production).

Oranges

Production, utilization and value for all orange production in the U.S. are presented in Table 3 by production area, for the five seasons pre-freeze. Texas ranked a distant third in all categories, supplying only 2.31 percent of U.S. production. California/Arizona was the leading supplier of fresh oranges, with 71.89 percent of the total. Florida was the leading processor, with 88.25 percent of all U.S. orange processing.

California/Arizona navel oranges are noted for their appearance and they contribute to the relatively high fresh fruit utilization percentage (63.95 percent). Texas fresh orange utilization



Table 3. Annual production, utilization and value of U.S. oranges by production area for 1978-79 through 1982-83 seasons.

Seasons	Production (tons)	Utilization		Value (\$1,000)	Fresh/total (percent)
		Fresh (tons)	Processed (tons)		
California/Arizona					
1978-79	1,507,500	991,500	516,000	274,101	65.77
1979-80	2,358,750	1,563,000	795,750	239,515	66.26
1980-81	2,581,875	1,513,500	1,068,375	295,437	58.62
1981-82	1,685,625	1,332,000	353,625	387,020	79.02
1982-83	2,996,250	1,717,313	1,278,937	334,996	57.32
Average	2,226,000	1,423,463	802,537	306,214	63.95
Percent of U.S. total	22.88	71.89	10.36	23.66	—
Florida					
1978-79	7,380,000	526,545	6,835,455	994,990	7.13
1979-80	9,301,500	494,550	8,806,950	1,068,408	5.32
1980-81	7,758,000	372,420	7,385,580	1,045,600	4.80
1981-82	5,661,000	342,900	5,318,100	752,547	6.06
1982-83	6,282,000	464,400	5,817,600	955,741	7.39
Average	7,276,500	440,163	6,836,337	963,457	6.05
Percent of U.S. total	74.80	22.23	88.25	74.46	—
Texas					
1978-79	272,000	89,250	182,750	26,953	32.81
1979-80	171,275	88,400	82,875	19,785	51.61
1980-81	184,025	121,125	62,900	20,359	65.82
1981-82	252,450	141,100	111,350	28,228	55.89
1982-83	241,400	141,950	99,450	26,402	58.80
Average	224,230	116,365	107,865	24,345	51.90
Percent of U.S. total	2.31	5.88	1.39	1.88	—

Source: *Citrus Fruits Production, Use and Value*, Crop Reporting Board, SRS, USDA.

was 51.90 percent of production. Texas orange value was somewhat improved over its grapefruit value, yet its 2.31 percent share of production was worth only 1.88 percent of the total U.S. value. California/Arizona oranges averaged a value of \$137.56 per ton, Florida's were valued at \$132.40 per ton, but Texas oranges were worth only \$108.57 per ton (calculated by dividing average value by average production).

Texas grapefruit acreage was and is approximately double its orange acreage, and grapefruit production per acre generally is higher than orange yields. Yet, the pre-freeze average value of Texas grapefruit production was only slightly higher than that of oranges—\$26.692 million and \$24.345 million, respectively. A major factor in the small difference in total crop value is the processing value of the two fruits—prices for processing fruit during that period were generally higher for oranges than for grapefruit.

In fact, an excess supply of processed grapefruit juice following the 1981-82 season resulted in

processor-imposed quotas on the acceptance of grapefruit eliminations from packinghouse. It effectively closed the market for grapefruit deliveries directly from orchards to processors. Consequently, thousands of tons of grapefruit were not harvested in the 1982-83 season.

Demand

A shift has occurred in the utilization of citrus over the past 40 years in the U.S. The "market basket" has been changing with increased demands for convenience foods. Processing has become a larger outlet for those producing fruit because convenience aspects appeal to the more affluent consumers. At the same time, the fresh market has been declining in importance.

Past utilization trends provide the basis for examining changes in consumption patterns, which reflect the interaction of factors such as production, price, income, population, demand, consumer preference and taste. Table 4 reflects the changes in per capita consumption by product form.



The consumption of fresh citrus declined steadily from 1950 to 1960, remained fairly consistent to 1974 and then continued to decline through 1985. This decline has been offset by a steady increase in per capita consumption of frozen concentrated orange juice, which increased from 34.2 pounds in 1960 to 81.8 pounds by 1985. The fresh weight equivalent of chilled juice increased from 3.6 pounds per capita in 1960 to 11.9 pounds in 1975, and then declined to 6.5 pounds in 1985.

Changes in composition of per capita citrus consumption during the last 10 years can be traced to several factors. The substitution of processed fruit for fresh fruit is closely associated with changes in consumer tastes, lifestyles, more working wives, convenience in shopping and changes in kitchen appliances. Processed citrus is convenient and time-saving. As family income rises, consumers will pay higher prices for these services. The income elasticity of demand for these services is considerably higher than that of food itself. The shift from fresh to processed citrus also reflects urban population growth.

Changes in fresh citrus consumption were not uniform between 1972 and 1985. The data in Table 5 indicate that fresh lemon and lime consumption increased while fresh orange and grapefruit consumption declined. Fresh orange consumption declined 13.2 percent, from 14.4 pounds to 12.5 pounds. Grapefruit consumption changes were even more dramatic with a fresh

Table 4. Per capita citrus consumption in the U.S. by production form, 1973-84.

Year	Pounds Fresh Weight Equivalent				Total citrus
	Fresh	Canned juice	Frozen juice	Chilled juice	
1972-73	27.39	11.02	53.97	10.60	102.98
1973-74	27.43	10.72	58.40	10.47	107.02
1974-75	29.40	10.62	68.07	11.43	119.52
1975-76	29.02	10.35	68.44	12.36	117.77
1976-77	26.24	9.89	68.13	11.51	115.77
1977-78	26.55	11.08	58.14	12.28	100.05
1978-79	24.50	11.21	62.00	11.06	108.77
1979-80	28.66	10.27	62.06	11.88	113.07
1980-81	24.89	9.74	61.75	8.40	104.78
1981-82	24.67	7.92	70.28	7.11	109.58
1982-83	29.27	6.03	76.98	8.38	120.66
1983-84	23.91	5.70	66.11	7.45	103.17
1984-85	22.52	4.55	81.78	6.54	115.39

Source: *Fruit Situation and Outlook Yearbook*, USDA, ERS, TRS 238, July 1986.

*Canned and chilled fruit were discontinued from the report in 1983. They averaged approximately 0.9 pounds for the previous 10 years.

weight decline from 8.55 pounds in 1972 to 5.71 pounds in 1985, a 33.2 percent decline in fresh consumption.

While the data indicate a downward trend in fresh grapefruit and orange consumption, the statistics in Table 2 and Table 3 imply a greater proportion of the Texas crops being consumed as fresh fruit. Research into this aspect of the Texas citrus industry could prove beneficial to the growers, processors and to the Rio Grande Valley.

Table 5. Per capita consumption of fresh citrus by type, pounds per capita farm weight, 1972-73 to 1984-85.

Year	Oranges	Grapefruit	Tangerines	Lemons	Limes	Tangelos	Totals
1972-73	14.40	8.55	1.69	1.91	0.22	0.62	27.39
1973-74	14.41	8.24	1.89	1.99	0.22	0.68	27.43
1974-75	15.87	8.35	2.00	1.94	0.24	1.00	29.40
1975-76	14.71	9.25	1.98	1.89	0.25	0.94	29.02
1976-77	13.40	7.72	1.84	2.09	0.25	0.94	26.24
1977-78	13.42	8.34	1.61	2.12	0.24	0.82	26.55
1978-79	12.44	7.57	1.60	1.95	0.25	0.69	24.50
1979-80	15.82	8.02	1.98	1.95	0.37	0.72	28.86
1980-81	15.50	6.88	1.25	2.04	0.40	0.82	24.89
1981-82	12.66	7.51	1.31	2.11	0.39	0.69	24.67
1983-84	12.74	6.32	1.39	2.31	0.54	0.61	23.91
1984-85	12.50	5.71	0.82	2.40	0.63	0.56	22.42

Source: *Fruit Situation and Outlook Yearbook*, USDA, ERS, TFS, July 1986, p.27.

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