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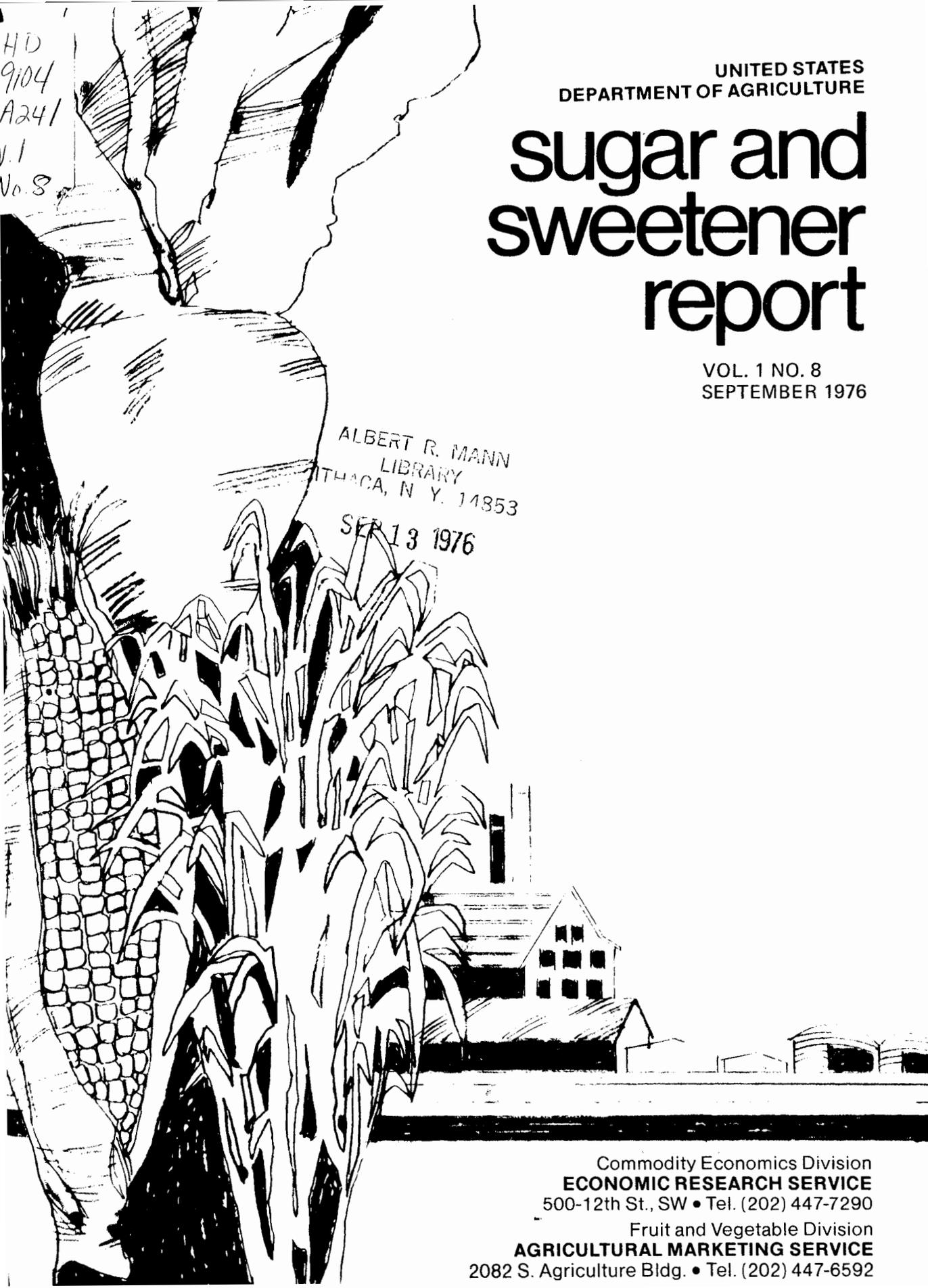
UNITED STATES
DEPARTMENT OF AGRICULTURE

sugar and sweetener report

VOL. 1 NO. 8
SEPTEMBER 1976

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**NATIONAL AGRICULTURAL OUTLOOK CONFERENCE
SCHEDULED FOR NOVEMBER 15-18**

The 1977 National Agricultural Outlook Conference will be held in Washington, D.C. at the U.S. Department of Agriculture's Jefferson Auditorium November 15-18. The Conference, sponsored by USDA's Economic Research, Agricultural Research and Extension Services, will feature presentations and panel discussions by leading authorities in agriculture and business on commodities and family living concerns. A session devoted to the outlook for sugar and other sweeteners is scheduled for the morning of November 18, 1976.

SITUATION AND OUTLOOK

Principal contributors: Fred Gray and Thomas W. Little

	<i>Page</i>
Summary	7
Sugar:	
The World Situation	8
The U.S. Situation	10
Production	10
Foreign Trade	13
Consumption	17
Stocks	18
Prices	18
Corn Sweeteners	22
Sweetener Containing Products	23
Other Sweeteners	26
Honey	26
Maple Sirup	26

MARKET NEWS

Principal contributors: James R. Thorpe and Robert F. Sweitzer

Sugar Market Highlights	33
Statistical Series	33

SPECIAL ARTICLE

The Florida Sugar Industry: Its Past, Present, and Future Prospects, by Glenn Zepp	45
---	----

SWEETENER PUBLICATIONS

Compiled by: Larry C. Larkin

Annotated Review	51
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The *Sugar and Sweetener Report* is published monthly and is approved by:
The Outlook and Situation Board

The Summary was released on
August 24, 1976

Prepared by

Commodity Economics Division
Economic Research Service

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Agricultural Marketing Service

U.S. Department of Agriculture
Washington, D.C. 20250

SITUATION AND OUTLOOK

TABLES

<i>Number</i>		<i>Page</i>
S- 1	Sugar: World production, consumption, and stocks, 1970/71 to 1975/76.	8
S- 2	Domestic sugar crops: Acres harvested, yield per acre, and production, 1974-76. State and area share of 1976 U.S. production, and change from 1975/76.	11
S- 3	U.S. sugar cane, sugarbeet, and sugar, raw value: Acres harvested, recovered sugar, yield per acre, and production, 1975-76	12
S- 4	U.S. imports by country, annual 1970, 1973-75 and six month totals, 1975-76	14
S- 5	Monthly, quarterly, and annual sugar deliveries to domestic users, change from year ago, previous month, and previous quarter, and 1976 compared with 1973-75.	16
S- 6	U.S. mainland sugar stocks held by primary distributors, August 1, 1960, 1965-70 and January 1-July 1, 1975-76.	18
S- 7	Monthly, quarterly, and annual sugar prices for Northeast refined cane, Chicago-West refined beet, and the New York spot and price change from year ago and previous month and quarter, 1975 to date.	19
S- 8	Soft drinks: Per capita consumption, manufacturers' shipments, sales, and value; with quantity, per capita consumption, and value, of sugar use, 1960-75	23
S- 9	Confectionery: Sales, value and supply and utilization, with quantity, per capita consumption, and value, of sugar use, 1960-75.	25
S-10	Sugar and products containing caloric sweeteners: Retail prices, U.S. average, 1960-75, and by month 1975 to date.	27
S-11	World centrifugal sugar production in specified countries, 1971/72 to 1975/76.	28
S-12	Caloric and noncaloric sweeteners: Per capita U.S. consumption, 1960-75	30
S-13	Recent value and quantity trends in corn refinery exports, annual 1970-75 and first six months, 1975-76.	31
S-14	Molasses: Blackstrap, beet, citrus, and corn (hydrol), annual average 1971-75; with first and second quarter averages 1976, prices f.o.b. tank car or tank truck.	31

CHARTS

S-1	Raw value beet sugar U.S. production possibilities, 1976 crop	13
S-2	U.S. sugar deliveries and prices raw value	15
S-3	Consumption of caloric sweeteners: By type.	17
S-4	U.S. raw sugar prices	19
S-5	U.S. sugar prices	20

MARKET NEWS

TABLES

<i>Number</i>		<i>Page</i>
1	U.S. Sugar supply and disposition by primary distributors, January-June 1976	33
2	Distribution of sugar by primary distributors, January-June 1976 and 1975	34
3	Stocks of sugar held by primary distributors in the continental United States, June 30, 1976 and 1975	34
4	Distribution of sugar by primary distributors in the continental United States, July and January-July 1976 and 1975	35
5	Stocks of sugar held by primary distributors in the continental United States, July 31, 1976 and 1975	35
6	Mainland sugar: Production and marketings, January-June 1976 and 1975	35
7	Refined sugar production and month end stocks	36
8	Sugar receipts of refiners and importers by source of supply, January-June 1976 and 1975	37
9	Primary distribution of sugar, continental United States, by states, June 1976	38
10	Primary distribution of sugar, continental United States, by states, January-June 1976	39
11	Primary distribution of sugar, continental United States, by states, January-June 1976 and 1975	40
12	World and U.S. raw sugar prices: Annual, 1965-75, and monthly 1975-76	41
13	U.S. cane and beet sugar prices: Various marketing territories, annual 1970-75 and monthly 1975-76	42
14	Wholesale price quotation for sugar, corn sirup, and dextrose.	43
15	Weekly spot prices and trading volume-1976.	44

SPECIAL ARTICLE

1	Florida raw sugar factories' production data, 1974 crop	47
2	Acreage, yield, and production of sugarcane and sugar in Florida, 1934, 1939, 1944, 1949, 1954, 1959-75	48
3	Florida production as a percent of domestic consumption of sugar, 1960-75 (raw value).	48
4	Distribution of sugarcane crop between hand cut and mechanically harvested in Florida, 1970 through 1975 crops	49

CHART

1	Location of Florida's raw sugar factories	46
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SITUATION AND OUTLOOK

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SUMMARY

Prospects Indicate Larger Sugar Supplies; Prices Lower

Prospects for 1976/77 world production in excess of consumption and a significant increase in ending stocks recently have exerted downward pressure on sugar prices.

Current estimates suggest the 1976/77 world sugar crop could be 3 to 6 million short tons larger than last year's record 89.6-million-short-ton crop, despite the drought in France and other Western European countries. Even though production in France may be down substantially, a 3.5-percent increase in European sugarbeet acreage, the potential for a 2 to 5-percent increase in harvested sugarcane acreage, and favorable weather in cane producing areas all indicate 1976/77 production could be another record.

While world consumption will likely increase 2 to 3 million tons from last year's 89-million-ton level, it is not likely to match the gain in output, and ending world stocks could represent 20 to 25 percent of annual consumption, in contrast to 20 percent in 1975/76. Ending stocks for 1975/76 totaled 18.0 million short tons. This level, up approximately 500,000 tons, represents a reversal of the 5-year trend of generally declining stocks.

World prices for sugar stowed at greater Caribbean ports including Brazil have remained under \$15.00 per cwt. (raw value) since last October. They averaged \$13.74 per cwt., ranging from a high of \$14.92 in March to a low of \$12.99 per cwt. in June. The world price increased slightly during the first week of July as apprehension about the European crop mounted. However, world sugar prices turned downward and have continued their decline.

In the United States, since the daily New York raw price peaked at \$16.60 per cwt. on July 6, it has fallen, reaching \$9.88 per cwt. on August 23. The weakening in the New York spot price since July 6 represents a significant decline from the relatively stable price levels of recent months. The monthly average for August seems likely to be below \$12.00 per cwt. The average price for January through July was \$15.35 per cwt., down sharply from the calendar 1975 average of \$22.47 per cwt.

U.S. and world prices are likely to remain at low levels until 1977/78 crop prospects are clearer and sugar markets once again assess the price levels which seem consistent with prospective supplies and anticipated demand.

U.S. sugarbeet acreage for harvest this fall is estimated to be 1.48 million acres, down 2 percent from a year ago. With a continuation of currently favorable growing conditions and a recovery rate of about 13 percent, raw value, this year's domestic beet sugar crop could total 3.65 to 3.85 million tons. Thus, the 1976/77 U.S. beet sugar crop would be about 350,000 tons (8 percent) short of last year, but still the second largest on record.

U.S. sugarcane acreage for harvest will likely total around 782,000 acres, up about 1 percent from 1975. Assuming normal growing conditions for the remainder of the season, total domestic sugarcane production should be about the same as last year's 28.5 million tons.

Domestic sugar consumption in calendar 1976 is expected to be up 750,000 tons, rebounding somewhat from the 10-million-ton level recorded in 1975 which was severely depressed by relatively high sugar prices.

U.S. sugar deliveries for the first 7 months of this year totaled 6.3 million tons, up nearly 800,000 tons (14 percent) from deliveries during the first 7 months of 1975. U.S. imports during the first 6 months totaled 2.1 million tons, up over half a million tons from the import level recorded during the same period in 1975. U.S. imports for July 1975 through June 1976 totaled 4.4 million tons.

Total manufacturers' shipments of corn sweeteners for domestic food use are expected to significantly exceed last year's shipments of 2.9 million tons (dry basis). However, the level for calendar 1976 appears likely to fall somewhat short of earlier expectations. The increase is now expected to range between 400,000 to 600,000 tons (dry basis). High-fructose corn sirup (HFCS) shipments, which totaled about 500,000 tons (dry basis) last year, may range between 850,000 and 1.0 million tons. High-fructose corn sirup, recently priced at around \$9.05 per cwt. in the Midwest—or \$12.75 per cwt., dry weight basis—continues to be priced below refined cane and beet sugar.

SUGAR

WORLD SITUATION

Large 1976/77 World Sugar Crop In Prospect¹

Acreeage and weather reports suggests the 1976/77 world crop may be 3 to 6 million tons larger than the record 89.6 (81.3) million ton 1975/76 crop despite the drought in France and other European countries (tables S-1 and S-2). Even though French production may be down substantially, a 3.5-percent increase in European sugarbeet acreage, an apparent 2 to 5 percent increase in sugarcane acreage for harvest, as well as generally favorable weather in cane-producing areas, all indicate 1976/77 world sugar production could be another record. Adverse weather, lower than expected sugar yields,

¹The crop year discussed here begins not earlier than May of 1 year, and ends not later than April of the following year, even though actual production may fall somewhat outside the May-April season.

All production and consumption data are expressed in raw equivalent value unless otherwise indicated. One hundred seven pounds of sugar, raw value, is equivalent to 100 pounds of refined sugar. Values shown in parentheses are metric values. Unless otherwise indicated, production data not in parantheses are short tons (2,000 pounds per ton). To convert short tons to metric tons, multiply short tons by .9072.

disease or other yield reducing factors could pull the final outturn down from these early estimates.

1976/77 European sugarbeet acreage of 19.5 million acres is up 3.5 percent over last year. Acreage increases varied from 2 percent in the European Community - (EC-9)² to 22 percent for Western European countries excluding the EC-9.³ The increase for Eastern Europe is nearly 5 percent⁴ while Turkey increased sugarbeet acreage 12 percent. Sugarbeet acreage in Chile is also up, Canadian acreage is about the same as a year ago and U.S. sugarbeet acreage is down 2 percent. Reports suggest 1976/77 world sugarcane acreage may be up 2 to 5 percent this year.

European Crop Potential Reduced by Severe Drought

While European sugarbeet acreage increased roughly 3½ percent this year, severe drought

²West Germany, France, Italy, the Netherlands, Belgium, Luxembourg, United Kingdom, Ireland, and Denmark.

³Austria, Switzerland, Greece, Spain, Finland, and Sweden.

⁴East Germany, Poland, Czechoslovakia, Hungary, Yugoslavia, Albania, Roumania, and Bulgaria.

Table S-1—Sugar: World production, consumption, and stocks, 1970/71 to 1975/76

Year beginning May 1	Production				Consumption		Ending stocks		Ending stocks as a percent of con- sumption
	Cane	Beet	Total	Change from pre- vious year	Total	Change from pre- vious year	Total	Change from pre- vious year	
	<i>1,000,000 short tons— raw value</i>	<i>Percent</i>							
1970	45.7	32.0	77.7	-1.7	80.2	2.1	22.9	-2.5	28.55
1971	44.1	33.7	77.8	.1	82.5	2.3	18.2	-4.7	22.06
1972	49.8	33.4	83.2	5.4	83.2	.7	18.2	.0	21.88
1973	52.7	36.0	88.7	5.5	87.2	4.0	19.7	1.5	22.59
1974	54.3	31.9	86.2	-2.5	88.2	1.0	17.7	-2.0	20.07
1975 ²	54.1	35.5	89.6	3.4	89.1	.9	18.2	0.5	20.43
	<i>1,000,000 metric tons— raw value</i>	<i>Percent</i>							
1970	41.5	29.0	70.5	-1.6	72.8	2.0	20.8	-2.3	28.57
1971	40.0	30.6	70.6	.1	74.9	2.1	16.5	-4.3	22.03
1972	45.2	30.3	75.5	4.9	75.5	.4	16.5	.0	21.85
1973	47.8	32.6	80.4	4.9	79.1	3.7	17.8	1.3	22.50
1974	49.3	28.9	78.2	-2.2	80.0	.9	16.0	-1.8	20.00
1975 ²	49.1	32.2	81.3	3.1	80.8	.8	16.5	0.5	20.42

¹Entire crop included for all harvests begun during the indicated May 1-April 30 crop year, regardless of when harvests is completed. ²Preliminary. ³Estimated.

Source: U.S. Department of Agriculture, Foreign Agricultural Service.

gripped much of Western Europe during the April-July period. Lack of moisture severely stunted sugarbeets in Northern France, while sugarbeets in England, Belgium, and the Po Valley in Italy, also suffered though less severely.

Production in England, Belgium, and Italy may not exceed last year's output and production in France is expected to be down substantially. As a result the European Community (EC-9) tonnage could fall somewhat short of the 1975/76 outturn of 11.2 (10.2) million tons (table S-11).

Even with ample showers during the remainder of the growing season *it may be too late* for a substantial portion of the beet crop in France and a portion of the crops in England and Belgium to recover. If frost comes before beets mature, the sugar content in severely damaged fields could be too low to economically justify processing beets for sugar. Immature beets would likely be used for cattle feed.

Outside the EC-9, sugarbeet production in Western Europe may not have suffered as much from the drought. Beet sugar production in Western European countries outside the EC-9 may match last year's 2.4 (2.2) million tons, though drought has reduced Spain's prospective 1976 beet sugar production significantly.

Growing conditions in Eastern Europe were also affected by poor weather. Yugoslavia's cropland has dried out after excessive rain earlier this year. Lack of rainfall has been reported in the Northern portion of Eastern Europe—East Germany, Poland, Czechoslovakia and Hungary. Overall, weather conditions in Eastern Europe suggest beet sugar output this year may total near last year's 5.7 (5.2) million tons, largely because of expanded acreage. The Polish crop is expected to fall significantly short of earlier expectations.

With plentiful rains in the Soviet Union a larger crop is anticipated. Cool weather early in the growing season retarded sugarbeet development by perhaps 10 to 15 days. However, with wider use of improved seeds in the Ukraine, and with normal weather during the rest of the growing season the Soviet Union may increase its beet sugar output 1 million tons or more over last year's 8.49 (7.70) million tons (table S-11).

Sugar Cane Crops Generally in Good Condition

Most of the increase in the 1976/77 world sugar crop is expected to be cane sugar. This contrasts with 1975/76, when the increase came from beet sugar. Cane crops are reported in relatively good shape around the world. African production is expected to exceed the 1975/76 crop of 6.1 (5.5) million tons, with slight increases in Kenya and Zaire,

and sharp increases in Mauritius and South Africa (table S-11).

Weather conditions have also been generally conducive to cane growth in other areas. Cane crops in Taiwan, the Philippines and Thailand look good. In India, Monsoon rains have been somewhat erratic but drought has not yet damaged the crop. Asian sugar production is expected to exceed last year's 19.1 (17.3) million tons. And expanded acreage is expected to provide Australia with a larger crop. Rains were reported somewhat less than normal but not enough to significantly reduce Australian cane yields.

Weather has also been favorable in most Caribbean Islands, except Cuba, which has not yet had enough rainfall to replenish its water reservoirs, in the large Eastern Province of Oriente. Even though Cuban output may be substantially reduced by drought in Oriente, total production in the Caribbean Islands in 1976/77 could increase slightly over last year's 8.6 (7.8) million-ton sugar crop.

Weather conditions are reported generally good in Central America, an area in which all countries expanded sugarcane acreage in 1976/77. While Mexico had only a minor expansion of acreage, older cane fields were replanted with new higher yielding varieties. Thus, 1976 production in Central America plus Mexico will likely be up significantly from 1975's 4.6 (4.2) million ton crop.

Cane sugar production in South America is likely to be up sharply over last year's 12.7 (11.5) million ton crop (table S-11). Weather has generally been good. The cold weather in July which threatened cane areas in southern Brazil and northern Argentina did no damage. Production in Brazil and Argentina is expected to be up sharply from last year's freeze-reduced level. Chile's 6-month old drought eased in late May and June and Chilean production is also likely to be up. The only South American country not expected to show an increase is Peru.

1976/77 World Consumption Expected to Lag Production Increase

Early estimates suggest that 1976/77 world consumption will likely increase 2 to 3 million tons (raw value) from last year's 89 (81) million ton level (table S-1). While world sugar consumption leveled off in 1974 and 1975 due to high sugar prices and market uncertainties, sharply lower sugar prices and a plateauing of prices of sugar-containing products have reestablished an upward trend in sugar consumption.

Should recent significantly lower world prices persist, world consumption could increase somewhat more than now anticipated. U.S. sugar con-

sumption alone in calendar 1976 is expected to increase about 750,000 tons, up significantly from the 10 (9.07) million ton level in calendar 1975, which was severely depressed by high sugar prices and high prices of sugar-containing products.

Continuation of relatively high internal prices despite significantly lower world sugar prices has slowed the consumption recovery in Western European countries. The same seems to be true in Japan, though consumption there may increase slightly this year. Turkey—a significant beet sugar producer—is also expected to register an increase this year.

Prospective increases of cane sugar supplies this year will make it possible for consumption in cane growing countries to increase significantly. Consumption increases could be particularly marked in countries like Brazil, Argentina, and India. And major oil exporting countries will also likely increase consumption as they continue to increase their level of living.

Exporting Countries Have More Cane Sugar Available for Export

With most of the prospective increase in 1976/77 world sugar production expected to come from cane sugar, traditional cane sugar exporting countries will have more cane sugar available. Countries (and areas) which appear to have significant quantities of cane sugar available for export include the Dominican Republic, Central America, most countries in South America (particularly Argentinian, Brazil and Columbia), South Africa, Mauritius, India, Taiwan, Thailand, the Philippines, and Australia. Brazil has reentered the export market and may export over 2 million short tons between July 1 this year and June 30, 1977.

Only Turkey now appears likely to be a significant net exporter of beet sugar. Exports within the European Community and the Eastern European Communist Bloc countries may match if not exceed last year's levels.

The United States, the World's largest importer, will likely import about 4.25 (3.86) million short tons this calendar year, up from 3.9 (3.5) million tons in calendar 1975. Soviet imports may reach 4.0 (3.6) million tons in calendar 1976 compared with 3.6 (3.2) million in 1975. Over 80 percent of total Soviet import requirements, is expected to be met by Cuba. However, if the current drought continues, Cuban exports may be limited, and the Soviet Union may need to rely on the world market.

Japan will likely import over 2.8 (2.6) million tons of sugar in calendar 1976, (vs. 2.7 (2.5) million tons in 1975) while attempting to renegotiate its long-term contract with Australia which requires significant purchases of Australian sugar at prices

substantially above current levels. Japan has entered into a 4-year agreement with Cuba for 1 million tons, the first 100,000 tons to be delivered to Japan in 1977 and 300,000 tons for each of the next 3 years. Other countries likely to import substantial quantities of sugar in 1976 include: Canada, the United Kingdom, Italy, Spain, Algeria, Morocco, and Peoples Republic of China.

World Sugar Stocks Beginning to Increase

World sugar stocks at the end of 1975/76 totaled 18.2 (16.5) million tons, up approximately 500,000 tons from the previous year (table S-1). This represented a reversal of the 5-year trend of generally declining global stocks. During 1976/77, world production seems likely to increase 3 to 6 million short tons while the world consumption increase will not likely exceed 3 million tons. Thus, world stocks could be significantly higher at the end of the 1976/77 season, reaching the equivalent of 20 to 25 percent of annual consumption. This potential increase could maintain considerable downward pressure on world sugar prices.

Much of the increase in world stocks will be cane sugar. With the recent drought in the European Community, world beet sugar stocks at end of 1976/77 are not expected to much exceed 1975/76.

World Sugar Prices Continue Low

World sugar prices (sugar stowed at Greater Caribbean ports including Brazil) have averaged about \$14 per cwt. During the last 10 months varying from a high of \$14.90 in March this year to a low of \$13 per cwt. in June (table 12). The world price increased slightly during the first week of July as apprehension mounted about European crops. However world sugar prices then turned downward and have continued to decline.

The current low level of world sugar prices appears consistent with an easing in the supply-use balance and a world stock increase of half a million tons at end of 1975/76 and a potential further significant increase in world stocks at end of 1976/77.

U.S. SITUATION

Production

1976 U.S. Sugarbeet Crop Down Slightly

U.S. sugarbeet acreage for harvest this fall is estimated at 1.48 million acres, down 2 percent from a year ago (table S-2 and figure S-1). Acreage is down in the following important high-yielding

States: California (4 percent); Colorado (23 percent); Idaho (12 percent); Nebraska, (14 percent); and Washington, (5 percent). Lower-yielding acreage expanded sharply (up 21 percent) in Minnesota and North Dakota.

Sugarbeet plantings were down this year, in the Great Plains and Northwest and to a lesser extent in the Great Lakes and Southwest, *since alternative crops seemed more profitable!* In Colorado negotiations between a beet sugar company and its growers were not completed until nearly midway during the planting season. As a result, many beet growers committed some of their acreage usually planted to beets to other crops. Sugarbeet acreage contracted by processors was reduced in California plus a few other areas since capacity to process the

1976/77 crop in a "normal" length of campaign was limited.

Sugarbeet yields this year are expected to average slightly less than the 1975 level of 19.6 tons per acre (tables S-2 and S-3). Growing conditions are not quite as good as a year ago. As a result sugarbeet production will likely be down slightly in most States. Sugarbeet production is expected to increase 14 percent this year in the Red River Valley, a smaller increase than earlier anticipated with a 21-percent increase in acreage. This is because its sugarbeet yields will likely slip somewhat below last year due to drought in the southern part of this region.

Total U.S. sugarbeet production this year will likely fall 4 percent below last year's level. The

Table S-2—Domestic sugar crops: Acres harvested, yield per acre, and production, 1974-76, State and area share of 1976 U.S. production, and change from 1975/76¹

State and area	Acres harvested			Yield per acre			Production			Share of production	Change from 1975/76	
	1974	1975	1976 ²	1974	1975	1976 ²	1974	1975	1976 ²		1,000 tons	Percent
	,000 acres	1,000 acres	1,000 acres	Tons	Tons	Tons	1,000 tons	1,000 tons	1,000 tons	Percent	1,000 tons	Percent
CANE												
Florida	273.3	298.0	314.0	27.8	35.9	34.0	7,598	10,698	10,676	37.4	-22	99.8
Louisiana	331.0	329.0	325.0	21.3	21.0	22.0	1,048	6,909	7,150	25.0	241	103.5
Texas	28.5	35.5	35.9	32.4	35.6	37.0	924	1,264	1,328	4.7	64	105.1
Total mainland	632.8	662.5	674.9	24.6	28.5	28.4	15,570	18,871	19,154	67.1	283	101.5
Hawaii	101.3	111.5	107.5	91.2	86.7	87.4	9,242	9,666	9,396	32.9	-270	97.2
Total U.S. cane	734.1	774.0	782.4	33.8	36.9	36.5	24,812	28,537	28,550	100.0	13	100.0
BEEET												
Maine	—	—	10.0	—	—	12.5	—	—	125	.4	125	100.0
Michigan	80.4	91.4	90.0	17.0	19.2	18.0	1,364	1,755	1,620	5.7	-135	92.3
Ohio	32.7	39.2	38.0	15.9	19.8	18.5	519	777	703	2.5	-74	90.5
Great Lakes ³	113.1	130.6	138.0	16.6	19.4	17.7	1,883	2,532	2,448	8.6	-84	96.7
Minnesota	182.7	196.0	246.0	11.6	14.2	13.0	2,116	2,783	3,198	11.2	415	114.9
North Dakota	139.9	130.9	151.0	11.2	13.9	13.5	1,562	1,820	2,039	7.2	219	112.0
Red River Valley	322.6	326.9	397.0	11.4	14.1	13.2	3,678	4,603	5,237	18.4	634	113.8
Colorado	125.7	154.9	120.0	18.0	17.2	17.5	2,261	2,661	2,100	7.4	-561	78.9
Kansas	35.1	43.0	38.0	17.2	15.5	17.0	602	667	646	2.3	-21	96.9
Nebraska	75.5	96.0	83.0	18.3	18.5	19.0	1,382	1,776	1,577	5.5	-199	88.8
Wyoming	53.5	57.7	56.0	18.4	18.4	19.5	983	1,060	1,092	3.8	32	103.0
Montana	43.9	48.5	45.8	18.7	17.1	18.0	820	829	824	2.9	-5	99.4
Texas	19.7	33.7	24.9	17.7	13.1	20.0	349	440	498	1.7	58	113.2
New Mexico4	.9	1.1	19.8	16.7	18.2	8	15	20	.1	5	133.3
Great Plains	353.8	434.7	368.8	18.1	17.1	18.3	6,405	7,448	6,757	23.7	-691	90.7
Oregon	11.6	17.9	16.0	23.0	23.8	23.0	267	426	368	1.3	-58	86.4
Washington	63.3	82.4	78.0	24.5	26.0	25.0	1,554	2,142	1,950	6.8	-192	91.0
Idaho	90.8	158.3	139.0	20.3	18.6	20.0	1,845	2,942	2,780	9.8	-162	94.5
Utah	17.0	22.5	17.0	17.4	15.7	17.5	296	353	298	1.0	-55	84.4
Northwest	182.7	281.1	250.0	21.7	20.9	21.6	3,962	5,863	5,396	18.9	-467	92.0
Arizona	10.4	17.0	17.0	23.8	21.5	23.0	247	366	391	1.4	25	106.8
California	230.0	326.4	312.0	25.9	27.2	26.5	5,948	8,890	8,268	29.0	-622	93.0
Southwest	240.4	343.4	329.0	25.8	27.0	26.3	6,195	9,256	8,659	30.4	-597	93.6
Total U.S. Beet	1,212.6	1,516.7	1,482.8	18.2	19.6	19.2	22,123	29,702	28,497	100.0	-1,205	95.9

¹ Crop year. ² Intentions based on August 1 growing conditions. ³ Includes Maine.

Source: Crop production, SRS, USDA.

Table S-3—U.S. sugarcane, sugarbeets, and sugar, raw value: Acres harvested, recovered sugar, yield per acre, and production, 1975-76

Year	Sugarcane and sugarbeets		Sugar, raw value	
	1975	1976 ¹	1975	1976 ²
	ACRES HARVESTED		RECOVERED SUGAR	
	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>Percent</i>	<i>Percent</i>
Cane ³				
Florida	287.5	303.5	10.3	10.3
Louisiana	308.0	304.0	9.9	9.0
Texas	35.0	35.4	10.0	10.0
Total mainland	630.5	642.9	10.2	9.8
Hawaii	105.1	101.1	11.7	11.4
Total cane	735.6	744.0	10.7	10.3
Total beet	1,516.7	1,482.8	13.8	13.2
	YIELD PER ACRE			
	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
Cane ³				
Florida	35.7	33.7	3.7	3.5
Louisiana	21.0	32.9	2.1	2.0
Texas	35.7	37.1	3.6	3.7
Total mainland	28.5	28.4	2.9	2.8
Hawaii	90.2	91.1	10.5	10.4
Total cane	37.3	36.9	4.0	3.9
Total beet	19.6	19.2	2.7	2.5
	PRODUCTION			
	<i>1,000 short tons</i>	<i>1,000 short tons</i>	<i>1,000 short tons</i>	<i>1,000 short tons</i>
Cane ³				
Florida	10,264	10,242	1,061	1,050
Louisiana	6,468	6,709	640	605
Texas	1,250	1,314	125	131
Total mainland	17,982	18,265	1,826	1,786
Hawaii	9,485	9,215	1,107	1,050
Total cane	27,467	27,480	2,933	2,836
Total beet	29,702	28,497	4,099	3,750

¹ Intended for harvest. Based on August 1 growing conditions. ² Estimate. Yield per acre and production based on recovery patterns during 1973-75 for mainland cane. Hawaiian data based on production during January-June 1976. ³ Excludes sugarcane for seed.

Source: Crop Production, SRS, USDA.

largest decline will likely be in the Great Plains States⁵, down 9 percent, and the Pacific Northwest,⁶ down 8 percent. Production is expected to decline 6 percent in California and Arizona and 3 percent overall in Ohio, Michigan, and Maine.

With a normal overall sugar recovery (about 13 percent, raw value), this year's beet sugar crop could total around 3.65 to 3.85 million tons, about 350,000 tons (about 8 percent) short of last year (table S-3 and figure S-1). This would still be the second largest on record. A smaller sugarbeet crop would reduce pressure on processing capacity this fall in many areas, and should shorten the processing campaigns in some areas.

⁵Colorado, Kansas, Nebraska, Wyoming, Montana, Texas, and New Mexico.

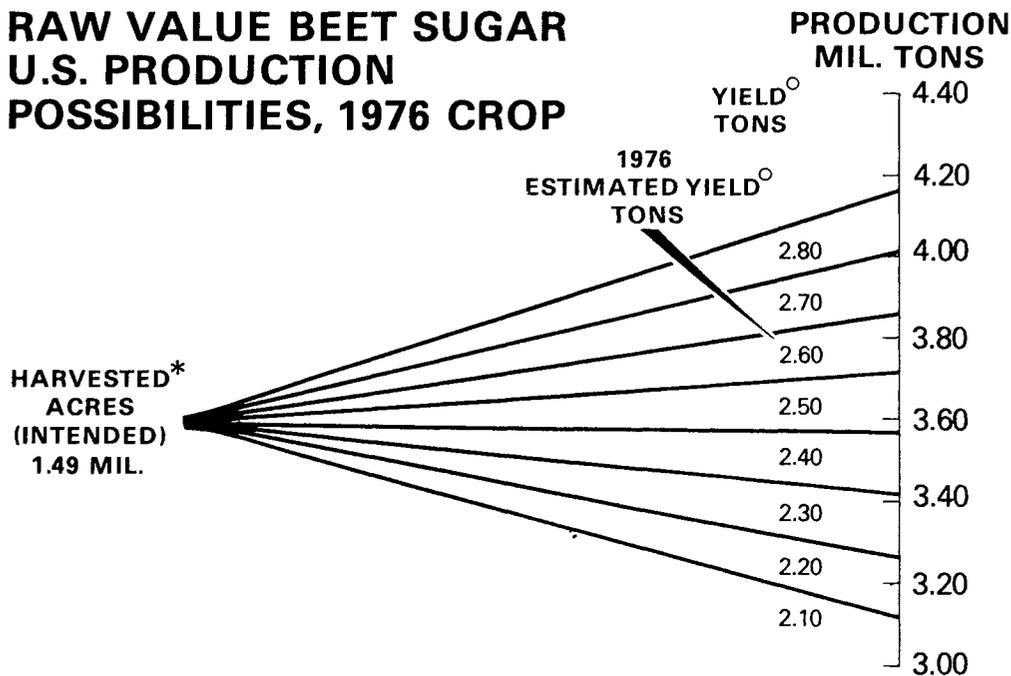
⁶Oregon, Washington, Idaho, and Utah.

1976 U.S. Cane Crop To Approach Last Year's Level

U.S. sugarcane acreage for harvest will likely total around 782,000 acres, up about 1 percent from 1975 (table S-2). Acreage for harvest expanded in Florida, remained about the same in Texas, and declined slightly in Hawaii and in Louisiana.

While Louisiana's crop yields were below normal last year (though recovery rates were well above normal) they seem back on trend this year. Texas yields are about the same as last year. In Florida cane tonnage per acre will likely fall short of the above normal yields experienced last year (36 tons per acre). Cane yields in Hawaii are expected to total about the same as last year's 87 tons per acre since there has been a shortage of water for irrigation.

RAW VALUE BEET SUGAR U.S. PRODUCTION POSSIBILITIES, 1976 CROP



*BASED ON JUNE 30, 1976 ACREAGE REPORT. ○ PER ACRE.

USDA

NEG. ERS 2549-76 (8)

Figure S-1

Assuming normal growing conditions for the remainder of the season, total domestic sugarcane production would total about 28.5 million tons, (including cane for seed use) about the same level as a year ago (tables S-2 and S-3). Production in Lou-

isiana this year is expected to exceed last year's 6.9 million short tons. Production in Florida, Texas, and Hawaii this year will likely total around the same level as in 1975/76.

Sugarcane acreage currently indicated for harvest (less deductions for seed cane), with normal sugar recovery rates, would result in the production of 2.7 to 2.9 million tons of cane sugar, about 100,000 tons (about 3 percent) less than last year's U.S. cane sugar crop (table S-3).

U.S. sugar production, 1972-75

Source	Crop years			
	1972	1973	1974	1975 ¹
<i>1,000 short tons, raw value</i>				
Cane sugar:				
Florida	961	824	803	1,061
Louisiana	660	558	594	640
Texas	---	38	74	125
Total mainland	1,621	1,420	1,471	1,826
Hawaii	1,119	1,129	1,041	1,107
Total cane sugar	2,740	2,549	2,512	2,933
Continental:				
Beet sugar	3,624	3,200	2,916	4,099
Total cane and beet sugar	6,364	5,749	5,428	7,032

¹ Preliminary.

Source: Crop Production, SRS.

Foreign Trade

U.S. Sugar Imports Up

U.S. imports for the first 6 months this year totaled 2.1 million tons, over half a million tons more (33 percent) than imported during the first 6 months of 1975 (table S-4). Imports for calendar year 1976 are expected to total between 4.0 and 4.5 million tons. U.S. imports for July 1975 through June 1976 totaled 4.4 million tons.

Imports from Central America and the Eastern Hemisphere are each running more than 250,000 tons above last year's levels for the first 6 months (table S-4). U.S. sugar imports from South America for first half 1976 fell slightly short of increasing

Table S-4—U.S. imports by country, annual 1970, 1973-75 and six month totals, 1975-76

Country	Calendar year				Six month totals	
	1970	1973	1974	1975	1975	1976
	<i>1,000 short tons, raw value</i>					
Western Hemisphere:						
Caribbean Islands:						
Bahamas	10	---	---	---	---	---
Dominican Republic	727	745	818	775	455	252
French West Indies	68	---	---	---	---	---
Haiti	22	15	19	12	9	6
West Indies	215	41	282	238	139	173
Netherlands Antilles	---	---	---	---	---	---
Total ¹	1,042	801	1,119	1,026	604	431
Central America:						
Belize (British Honduras)	16	48	63	46	30	3
Costa Rica	75	100	79	56	32	48
El Salvador	47	60	65	107	76	94
Guatemala	69	63	96	61	35	202
Honduras	11	---	8	6	---	5
Nicaragua	76	76	53	58	52	121
Panama	37	52	66	98	73	79
Total ¹	331	398	429	432	298	552
North America:						
Canada	---	---	---	40	13	25
Mexico	650	637	538	41	41	(²)
Total ¹	650	637	538	81	54	25
South America:						
Argentina	80	85	110	112	6	57
Brazil	667	652	783	197	38	---
Colombia	69	75	105	159	47	28
Ecuador	90	93	60	47	1	28
Peru	455	407	471	215	38	180
Venezuela	34	32	---	---	---	---
Other	8	15	14	7	---	26
Total ¹	1,402	1,359	1,543	737	130	319
Total Western Hemisphere ¹	3,424	3,195	3,629	2,276	1,086	1,327
Eastern Hemisphere:						
Australia	211	265	242	464	130	119
China, Republic of	86	86	90	140	88	58
Fiji Islands	44	45	46	---	---	117
India	79	81	85	188	---	---
Korea	---	---	---	11	---	1
Malagasy, Republic of	10	12	13	13	---	13
Malawi	---	16	10	27	6	---
Mauritius	18	45	46	27	13	---
Mozambique	---	---	---	15	---	12
South Africa	78	74	69	134	65	62
Swaziland	7	30	41	36	---	---
Thailand	20	19	26	124	12	45
Other	21	6	---	---	---	4
Total Eastern Hemisphere excluding Philippines ¹	574	679	669	1,179	314	491
Philippines	1,298	1,454	1,472	413	169	282
Total Eastern Hemisphere ¹	1,872	2,134	2,141	1,592	483	773
Total U.S. Imports ¹	5,296	5,329	5,770	3,867	1,569	2,100

¹ May not add due to rounding. ² Less than 5.

Source: Fruit and Vegetable Division, AMS, USDA.

200,000 tons over first half 1975. Imports from the Caribbean Islands were down over 200,000 tons, primarily because of smaller shipments from the Dominican Republic which early this year declared a moratorium on exports until the raw price improved. Since then, the raw price has further declined.

Among our 10 normally largest supplying areas, U.S. imports for the first 6 months this year were up from last year for Central America (254,000 short tons); India (177,000 tons); Peru (142,000 tons); the Philippines (113,000 tons); and the West Indies (34,000 tons). Conversely, imports from the Dominican Republic (-203,000 tons), Mexico (-41,000 tons), Brazil (-38,000 tons), Columbia (-19,000 tons) and Australia (-11,000 tons) were all down for the first 6 months this year from the corresponding level of a year ago.

Some traditional U.S. suppliers have sugar available for export but have held back hoping sugar prices would increase. In contrast, Brazilian authorities announced they had little sugar for export during the first half of this year but later would be exporting heavily. Mexico appears to have little sugar available for export. A low price policy for sugar consumed domestically in Mexico

and Brazil has resulted in rapid increases in domestic consumption in both countries, and depleted potential exports.

U.S. Sugar Exports Running Behind 1975 Pace

U.S. refined sugar exports for the first half of calendar 1976 totaled about 31,000 tons, less than half of the 74,000 tons exported during the first half of 1975 (Bureau of Census data). Reports from primary distributors (which are less inclusive than Census data), showed refined sugar exports of slightly over 27,000 tons. Trends for the first 6 months indicate U.S. exports may not total 100,000 tons for the year, down sharply from the more than 200,000 tons exported in calendar 1975.

Canada our most consistent important foreign market, received nearly 30,000 tons of sugar from the United States, in the first half of 1976, nearly 80 percent of our sugar exports. Canada took virtually all of our liquid sugar exports and about three-fourths of our crystalline exports. In calendar 1975, Canada imported nearly 40 percent of our total refined sugar exports of nearly 216,000 tons.

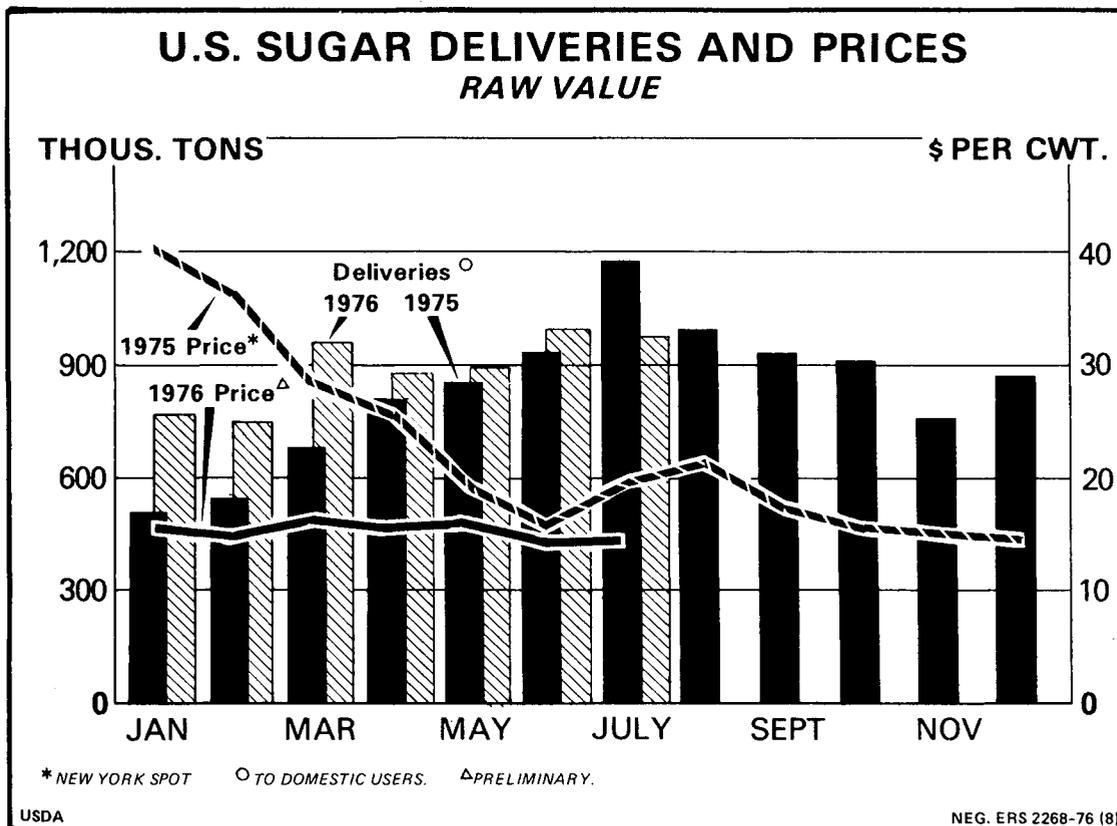


Figure S-2

Table S-5—Monthly, quarterly, and annual sugar deliveries to domestic users, change from year ago, previous month, and previous quarter, and 1976 compared with 1973-75¹

Month and quarter	Deliveries ²						1976 compared with					
	1973	1974	1975	1976	Change from		Cumulative			Monthly		
					Year ago	Previous month & quarter	1973	1974	1975	1973	1974	1975
	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons	Percent	Percent	Percent	Percent	Percent	Percent
BEET												
January	268	249	152	275	123	-9	102.6	110.4	180.9	102.6	110.4	180.9
February	266	226	165	268	103	-7	101.7	114.3	171.3	100.8	118.6	162.4
March	329	214	208	366	158	98	105.3	131.9	173.1	111.2	171.0	176.0
1st quarter	863	689	525	909	384	175	---	---	---	105.3	131.9	173.1
April	278	224	279	334	55	-32	108.9	136.1	154.6	120.1	149.1	119.7
May	318	255	292	³ 333	41	-1	108.0	134.9	143.8	104.7	130.6	114.0
June	366	228	313	³ 365	52	32	106.4	139.0	137.8	99.7	160.1	116.6
2nd quarter	962	707	884	1,032	148	123	---	---	---	107.3	146.0	116.7
July	338	306	446									
August	401	341	365									
September	305	292	319									
3rd quarter	1,044	939	1,130									
October	269	309	257									
November	246	254	193									
December	253	122	284									
4th quarter	768	685	734									
January-June	1,825	1,396	1,409	1,941	532	---	106.4	139.0	137.8	---	---	---
Annual	3,637	3,020	3,273	---	---	---	---	---	---	---	---	---
CANE ⁴												
January	585	715	366	488	122	-106	83.4	68.3	133.3	83.4	68.3	133.3
February	535	644	390	509	119	21	89.0	73.4	131.9	95.1	79.0	130.5
March	724	711	478	611	133	102	87.2	77.7	130.3	84.4	85.9	127.8
1st quarter	1,844	2,070	1,234	1,608	374	-209	---	---	---	87.2	77.7	130.3
April	611	678	533	549	16	-62	87.9	78.5	122.1	89.9	81.0	103.0
May	669	785	563	³ 602	39	53	88.3	78.1	118.4	90.0	76.7	106.9
June	697	763	622	³ 636	14	34	88.9	79.0	115.0	91.2	83.3	102.2
2nd quarter	1,977	2,226	1,718	1,787	69	179	---	---	---	90.4	80.3	104.0
July	691	756	732									
August	801	795	635									
September	721	709	614									
3rd quarter	2,213	2,260	1,981									
October	671	736	655									
November	645	625	568									
December	662	336	594									
4th quarter	1,978	1,697	1,817									
January-June	3,821	4,296	2,952	3,395	443	---	88.9	79.0	115.0	---	---	---
Annual	8,012	8,253	6,750	---	---	---	---	---	---	---	---	---
TOTAL ⁴												
January	853	964	518	763	245	-115	89.4	79.1	147.3	89.4	79.1	147.3
February	801	870	555	777	222	14	93.1	84.0	143.5	97.0	89.3	140.0
March	1,053	925	686	977	291	200	93.0	91.2	143.1	92.8	105.6	142.4
1st quarter	2,707	2,759	1,759	2,517	758	-34	---	---	---	93.0	91.2	143.1
April	889	902	812	883	71	-94	94.5	92.9	132.2	99.3	97.9	108.7
May	987	1,040	855	³ 935	80	52	94.6	92.2	126.5	94.7	89.9	109.4
June	1,063	991	935	³ 1,001	66	66	94.5	93.7	122.4	94.2	101.0	107.1
2nd quarter	2,939	2,933	2,602	2,819	217	302	---	---	---	95.9	96.1	108.3
July	1,029	1,062	1,178									
August	1,202	1,136	1,000									
September	1,026	1,001	933									
3rd quarter	3,257	3,199	3,111									
October	940	1,045	912									
November	891	879	761									
December	915	458	878									
4th quarter	2,746	2,382	2,551									
January-June	5,646	5,692	4,361	5,336	975	---	94.5	93.7	122.4	---	---	---
Annual	11,649	11,273	10,023	---	---	---	---	---	---	---	---	---

¹ Raw value. ² Deliveries in December, 1972-74, excludes some sales contracted for at a later date and are included in January and February of the following year. ³ Preliminary. ⁴ Includes Hawaii.

Source: Fruit and Vegetable Division, AMS, USDA.

Two important export markets in calendar 1975 failed to materialize in 1976. The EC-9 (which took over 50,000 tons last year) and Japan (which took nearly 46,000 tons) have largely refrained from buying U.S. sugar in 1976.

Domestic Utilization

1976 U.S. Sugar Deliveries Ahead of Last Year's Pace

U.S. sugar deliveries for the first 7 months this year totaled 6.3 million tons, up nearly 14 percent from the first 7 months of 1975 (table S-5 and figure S-2). Most of the increase came in the first quarter. However, July deliveries of 1 million tons were down 174,000 tons from July of last year.

Beet sugar deliveries for the first 7 months totaled 2.3 million tons up 25 percent from January-July 1975. Based on the pattern of deliveries for the first 7 months, calendar 1976 beet sugar deliveries will probably range between 3.7 to 4.0 million tons. This would exceed the previous high of 3.58 million tons in 1970.

Cane sugar deliveries for the first 7 months totaled 4 million tons, up 300,000 tons (8 percent)

from the first 7 months of 1975. Cane sugar deliveries for calendar 1976 seem likely to total between 7.0 and 7.3 million tons. Record beet sugar deliveries have limited the increase in cane sugar deliveries this year.

U.S. Consumption To Increase

With U.S. deliveries bouncing back this year from the low levels of last year, per capita refined sugar consumption will probably total between 92 and 96 pounds. Last year's consumption level of nearly 90 pounds was the lowest since the sugar short war years of 1942-46 (table S-12 and figure S-3).

With first quarter 1976 refined sugar consumption totaling 22 pounds, per person, and second quarter consumption 24.4 pounds, first half 1976 consumption was about 6 pounds higher than a year ago. Third quarter consumption may fall 1 to 3 pounds short of last year's 27.5 pounds, while fourth quarter consumption will probably match last year's 22.2 pound level. Per capita consumption for the most recent four quarters (third quarter 1975 through second quarter 1976) totaled 96 pounds.

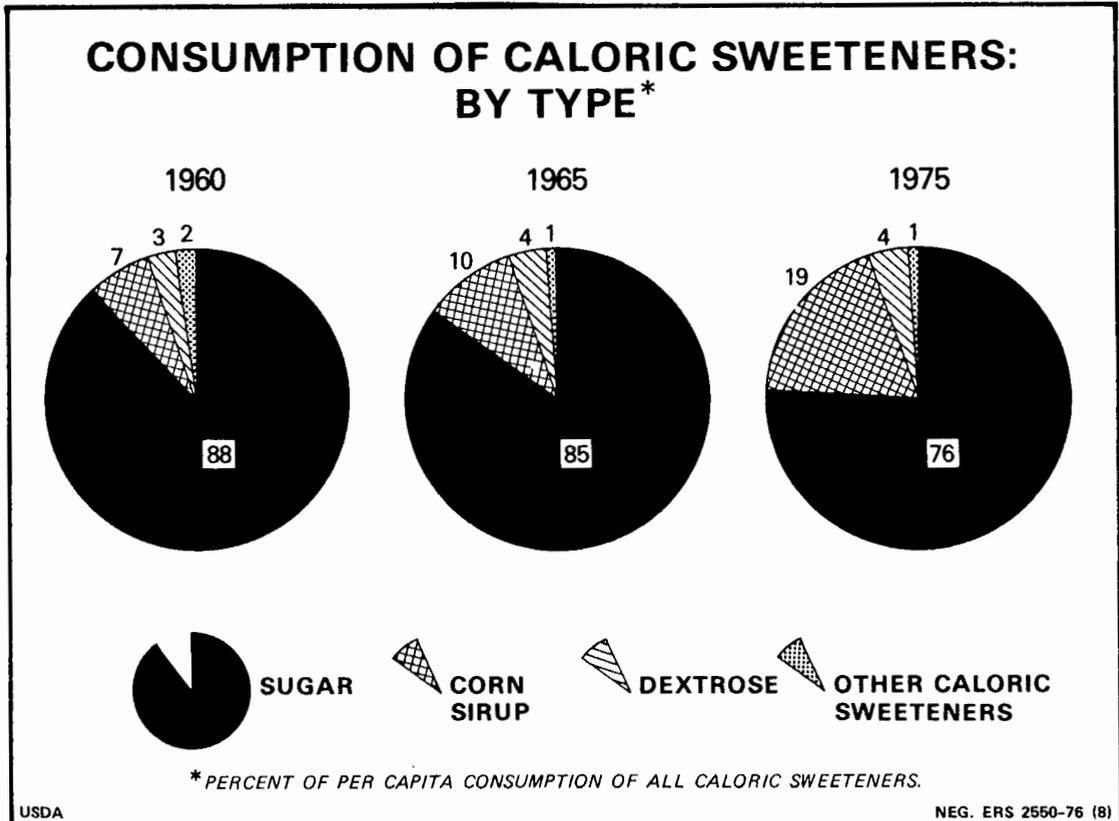


Figure S-3

Quarterly per capita consumption of refined sugar

Quarter	1973	1974	1975 ¹	1976 ²
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
I	22.3	24.2	16.0	21.9
II	26.4	25.1	23.0	24.4
III	28.4	27.0	27.5	—
IV	24.4	20.3	22.2	—
Annual	101.5	96.6	88.7	—

¹ Preliminary. ² Estimate.

Source: Economic Research Service.

U.S. Stock Levels

August 1 Stocks Up From Last Year,
But Down Seasonally from July

On August 1, total mainland sugar stocks of nearly 2 million tons were up over 700,000 tons from last year's August 1 level (table S-6). Nearly 60 percent of the increase was larger cane sugar stocks.

While domestic sugar stocks on August 1 this year were up sharply from a year ago, they were also down seasonally over 300,000 tons from July 1. Nearly 80 percent of the decline was in beet sugar. U.S. beet sugar companies are aggressively marketing sugar from last year's record crop to make room for 1976/77 output.

U.S. SUGAR PRICES—SITUATION
AND OUTLOOK

U.S. Raw Sugar Prices Trending
Down Recently

The U.S. raw price (New York spot raw) averaged \$15.25 per cwt. during October 1975 through July 1976 ranging from a monthly high of \$16.25 per cwt. in March to a low of \$14.40 per cwt. in June (table S-7 and figure S-4). The largest difference between the 10-month average and individual months was \$1.00 in March, indicating relatively stable monthly raw prices for the last 10 months.

Table S-6—U.S. mainland sugar stocks held by primary distributors, August 1, 1960, 1965-76 and January 1-July 1, 1976-76¹

Year and month	Cane sugar						Beet processors	Total mainland ²
	Refiners			Mainland cane mills	Importers refined	Total		
	Refined	Raw	Total ²					
--- 1,000 short tons, raw value ---								
AUGUST 1, BEGINNING STOCKS								
1960	246	532	778	18	117	913	483	1,396
1965	268	454	722	102	20	844	1,084	1,928
1970	225	515	740	130	14	884	842	1,726
1971	356	478	834	166	15	1,015	916	1,931
1972	326	723	1,049	155	5	1,209	823	2,032
1973	303	626	929	364	3	1,296	996	2,292
1974	271	420	691	128	2	821	792	1,613
1975	211	272	484	139	---	623	652	1,275
1976	280	555	835	220	---	1,055	941	1,996
JANUARY 1-JULY 1, BEGINNING STOCKS								
1975:								
January	295	886	1,181	211	1	1,394	1,406	2,800
February	288	756	1,044	373	1	1,418	1,649	3,067
March	279	600	879	513	1	1,393	1,578	2,971
April	262	601	863	552	(³)	1,415	1,421	2,836
May	274	494	768	437	---	1,205	1,316	2,521
June	259	491	750	330	---	1,080	1,219	2,299
July	275	423	698	238	---	936	1,010	1,946
1976:								
January	236	431	667	449	---	1,116	1,596	2,712
February	280	461	741	515	---	1,256	1,915	3,171
March	277	421	698	596	---	1,294	1,907	3,201
April	362	237	599	684	---	1,233	1,700	2,933
May	261	410	671	545	---	1,216	1,562	2,778
June	286	429	715	419	---	1,134	1,435	2,569
July	298	522	820	299	---	1,119	1,195	2,314

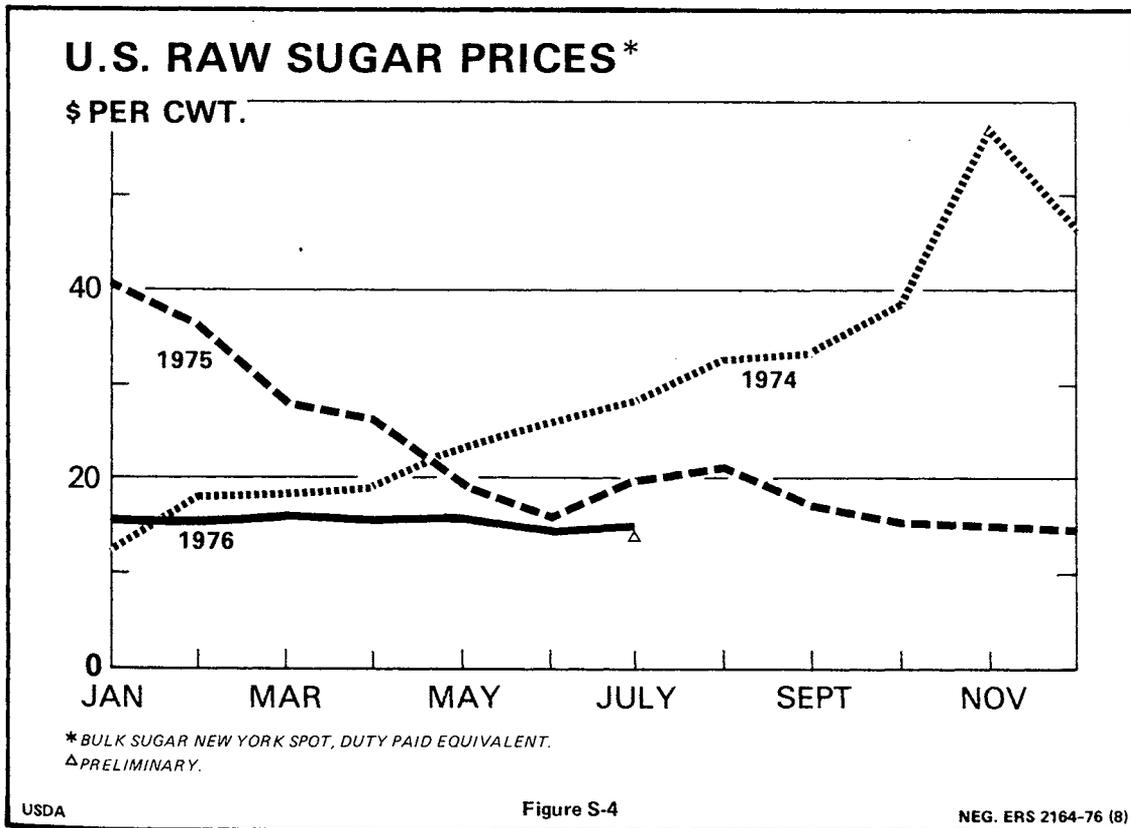
¹ Beginning stocks approximately first day of the month. ² May not add due to rounding. ³ Less than 500 short tons.

Source: Fruit and Vegetable Division, AMS, USDA.

Table S-7—Monthly, quarterly, and annual sugar prices for Northeast refined cane, Chicago-West refined beet and the New York spot and price change from year ago and previous month and quarter, 1975 to date

Month, quarter, and year	Northeast			Chicago-West			New York spot		
	Refined cane sugar	Change from		Refined beet sugar	Change from		Raw	Change from	
		Year ago	Previous month & quarter		Year ago	Previous month & quarter		Year ago	Previous month & quarter
	---Cents per lb.---						---Dollars per cwt.---		
1975:									
January	52.95	37.30	-7.46	46.69	31.82	-13.72	40.15	27.52	-6.59
February	48.96	30.47	-3.99	41.99	23.90	-4.70	36.07	18.98	-4.08
March	40.50	19.60	-8.46	33.88	11.76	-8.11	28.52	10.41	-7.55
1st quarter .	47.47	29.12	-7.43	40.85	23.31	-9.44	34.91	18.97	-12.71
April	37.01	13.23	-3.47	30.80	7.07	-3.08	26.07	6.82	-2.45
May	32.23	4.62	-4.78	25.33	-1.74	-5.47	19.27	-3.78	-6.80
June	25.57	-5.47	-6.66	21.14	-10.02	-4.19	15.96	-10.34	-3.31
2nd quarter	31.60	4.12	-15.87	25.76	-5.59	-15.09	20.43	-2.44	-14.78
July	26.89	-5.61	1.32	22.17	-10.08	1.03	19.89	-8.46	3.93
August	27.05	-9.78	-.16	26.18	-10.12	4.01	21.11	-11.49	1.22
September ...	23.30	-17.44	-3.75	25.35	-15.39	-.83	17.36	-16.35	-3.75
3rd quarter .	25.75	-10.94	-5.85	24.57	-9.52	-1.19	19.45	-12.10	-.98
October	21.15	-22.44	-2.15	20.44	-23.15	-4.91	15.45	-23.38	-1.91
November ...	20.84	-39.85	-.31	18.98	-41.92	-1.46	15.03	-42.27	-.42
December ...	20.53	-39.88	-.31	18.42	-41.99	-.56	14.80	-31.94	-.23
4th quarter .	20.84	-34.06	-4.91	19.28	-31.01	-5.29	15.09	-32.53	-4.36
Annual	31.42	-2.93	—	27.61	-6.66	—	22.47	-7.03	—
1976:									
January	21.31	-31.64	.78	18.30	-28.39	-.12	15.42	-25.73	.62
February	20.86	-28.10	-.45	18.30	-23.69	0	15.04	-21.03	-.38
March	22.20	-18.30	1.34	18.30	-15.58	0	16.27	-12.25	1.23
1st quarter .	21.46	-26.01	.62	18.30	-22.55	-.98	15.58	-19.33	
April	21.41	-15.60	-.79	18.30	-12.50	0	15.58	-10.49	-.69
May	21.87	-10.36	.46	18.68	-6.65	-.38	15.97	-3.30	-.39
June	20.22	-5.35	-1.65	18.47	-2.67	-.21	14.40	-1.56	-1.57
2nd quarter	21.17	-10.43	-.29	18.48	-7.28	.18	15.32	-5.11	-.26
July	20.46	-6.43	.24	18.76	-3.41	.29	14.59	-5.30	.19

Source: Fruit and Vegetable Division, AMS, USDA.



However, prices weakened in recent trading. Since the daily New York raw price hit \$16.60 per cwt. on July 6, it fell to \$9.88 per cwt. on August 23. The monthly New York spot raw price for August seems likely to average below \$12.00 per cwt. The average price for January through July is \$15.30 per cwt., down sharply from the calendar 1975 average of \$22.50 per cwt.

Trends in U.S. Wholesale Refined Sugar Prices

U.S. wholesale refined cane sugar prices tended to parallel changes in the U.S. raw price (New York spot) during November 1975 through July 1976 (table S-7 and figure S-5). For example, changes in the refined cane sugar price followed monthly movements in the U.S. raw price very closely, ranging from a high of \$22.20 per cwt. in March to a low of \$20.20 in June.

Beet sugar prices are not as closely related to the New York spot raw price as are refined cane sugar prices (table S-7). While wholesale refined cane sugar prices have generally moved with raw sugar prices, wholesale refined beet sugar prices

Selected raw and retail sugar price comparisons

Year and month	World sugar Price stowed Caribbean ¹	World price New York basis	U.S. sugar price (New York spot)	U.S. average retail
	Cents per pound	Cents per pound	Cents per pound	Cents per pound
1973	9.61	10.99	10.29	15.10
1974	29.99	31.62	29.50	32.34
1975	20.49	21.92	22.47	37.16
1975:				
October	14.09	15.49	15.45	30.32
November ..	13.40	14.80	15.03	27.24
December ...	13.29	14.69	14.80	26.34
1976:				
January	14.04	15.52	15.42	25.54
February ...	13.52	14.90	15.04	25.38
March	14.92	16.37	16.27	25.04
April	14.06	15.51	15.58	25.06
May	14.58	15.30	15.97	24.80
June	12.99	14.42	14.40	24.90
July	13.21	14.64	14.59	24.48

¹ Sugar stowed at greater Caribbean ports including Brazil.

Source: U.S. average retail, BLS; all other prices, Agricultural Marketing Service.

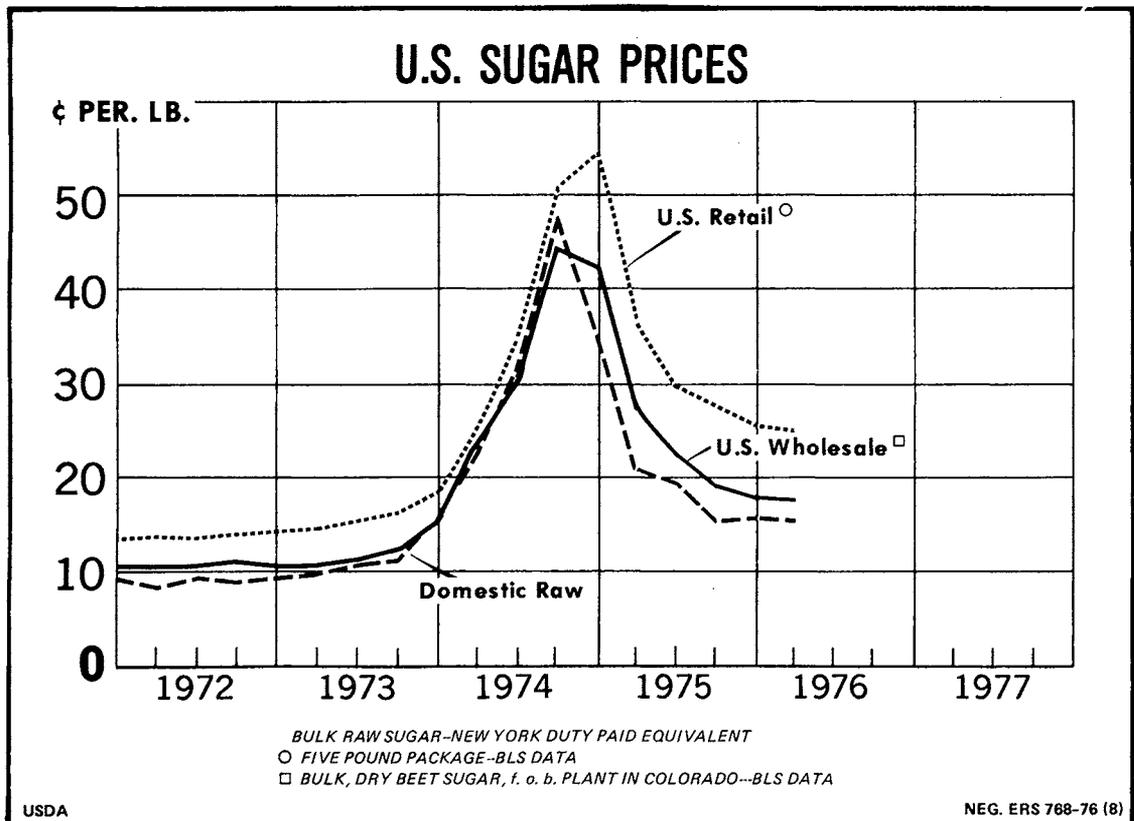


Figure S-5

changed little since November 1975, until they recently weakened in August. Chicago-West beet sugar averaged \$3.35 per cwt. higher than U.S. raw sugar prices (New York spot) during the most recent 9-month period. The widest difference was \$4.17 per cwt. in July and the smallest was \$2.03 per cwt. in March. However, beet sugar prices weakened in August, apparently responding to the sharp declines in raw cane sugar prices in recent weeks.

Refined sugar: Selected wholesale price comparisons¹

Year and month	Cane Sugar		Beet Sugar		
	Northeast	Chicago-West	Pacific Coast	Bulk dry	
				Cents per pound	Cents per pound
1973	14.07	12.38	12.38	11.40	28.46
1974	34.35	32.07	31.90	28.46	27.47
1975	31.42	27.61	27.87	27.47	
1975:					
October	21.15	20.44	20.77	19.75	
November	20.84	18.98	20.13	19.53	
December	20.53	18.42	19.55	18.29	
1976:					
January	21.31	18.30	19.45	18.28	
February	20.86	18.30	18.95	17.86	
March	22.20	18.30	18.95	18.19	
April	21.41	18.30	18.95	17.82	
May	21.87	18.68	19.37	17.85	
June	20.22	18.47	18.71	17.61	
July	20.46	18.76	19.11	17.84	

¹These are basis prices in 100-pound paper bags, not delivered prices. To obtain delivered prices, add "Freight Prepays" deduct discounts and allowances.

Source: Bulk dry beet sugar, BLS, all other prices, Agricultural Marketing Services.

U.S. Average Retail Price Changing Little

The U.S. average sugar retail price declined slowly from 25.90 cents per pound in January to a low of 24.50 cents per pound in July (table S-10). The U.S. average retail price tends to follow changes in wholesale refined sugar prices, but the wholesale-retail refined sugar spreads are less predictable than raw-wholesale refined sugar spreads. Since the raw price has recently declined, retail sugar prices can be expected to decline further, but there may be a lag. Also, retail price reductions may also be relatively less than reductions in raw and wholesale refined sugar prices.

The U.S. average retail price for a 5-pound package of sugar in July was \$1.22 (24.50 cents per pound), with considerable variation among areas of the country and by type of sugar—beet or cane. Moreover, the current price doesn't reflect the fre-

quent "loss-leader" sales throughout the country—5 pounds of sugar may sell for 39, 49, or 59 cents per package tied to a minimum \$5.00 or \$10.00 consumer purchase.

Factors Influencing Sugar Prices

Several factors help explain current sugar price levels.

(1) The 1975/76 world crop of 89.6 (81.3) million tons (raw value) was about half a million tons larger than 1975/76 consumption.

(2) A substantial portion of the increase in 1975/76 production was in countries which normally import sugar, disproportionately lowering demand for sugar imports and increasing sugar availability of export stocks.

(3) Despite reports of drought damage to European sugarbeet crops, the 1976/77 world sugar crop may still be 3 to 6 million tons larger than last year's crop.

(4) Since the increase in 1976/77 world consumption is not likely to exceed 3 million tons, global stocks at the end of 1976/77 may be up significantly.

(5) The Southern Hemisphere is in the middle of harvesting a substantially larger 1976/77 crop. Thus, countries "down under" have been able to export new-crop sugar beginning in July.

(6) The 1975/76 4.1 million ton (raw value) U.S. beet sugar crop was a record. Aggressive domestic marketing of the domestic crop has tended to keep U.S. prices from rising much.

(7) The 1976/77 U.S. beet sugar crop now appears likely to total 3.65 to 3.85 million tons. This output level will continue to keep pressure on U.S. processors to market beet sugar aggressively until there is some indication of the prospective size of the 1977/78 crop.

(8) The Dominican Republic and the Philippines reportedly held back several hundred thousand tons of sugar earlier this year. Sugar held over from the 1975/76 crop is presently competing with new crop sugar in the world market as well as for storage.

(9) Sugar consumption in West European countries as well as in Japan has been slower to return to previous higher consumption levels.

(10) Some 350,000 to 500,000 tons (dry basis) more high-fructose corn sirup will be sold in the United States this year than last. Part of the increased HFCS shipments may be competing with sugar.

Outlook for U.S. Sugar Prices

U.S. and world raw prices are likely to remain at low levels until 1977/78 crop prospects are

clearer and world sugar markets once again assess price levels which seem consistent with prospective supplies and anticipated demand.

CORN SWEETENERS

Domestic Shipments Increasing

Total domestic shipments of corn sweeteners for food use are expected to increase significantly this year over last year's approximately 2.9 million tons (dry basis). However, the overall level for calendar 1976 appears likely to fall somewhat short of earlier industry expectations, because of recent low sugar prices. The total increase this year may range between 400,000 to 600,000 tons (dry basis). Corn sirup (other than high-fructose) shipments for domestic food use will probably increase to around 2 million tons (dry basis), while dextrose shipments will likely total near last year's 600,000 ton level (dry basis).

High-fructose corn sirup (HFCS) shipments totaled about 500,000 tons (dry basis) last year. The corn sweetener industry had earlier expected

to market 1 to 1.2 million tons of HFCS this year, but it now appears that calendar 1976 HFCS shipments will range between 850,000 to 1.0 million tons. Relatively low sugar prices in the Chicago-West and Pacific Coast marketing territories have slowed prospective increases in high-fructose corn sirup sales. HFCS is reported to be selling 10 to 15 percent under sugar prices in the Chicago-West area. The discount is less in the Pacific Coast marketing territory.

While capacity figures are guarded, HFCS processing capacity appears adequate to have achieved earlier production plans. By yearend, HFCS capacity will be more than twice that available at the beginning of the year. Two new producers are expected to begin production early next year, and additional capacity is being built in current producers' plants. However, two firms which earlier announced intentions to produce HFCS have deferred their plans, because of recent low HFCS prices and reduced prospective profits.

New HFCS Product Commercially Available for Food Use Later This Year

A new high-fructose corn sirup which contains more than twice the fructose of the existing commercial formulations—90 percent vs. 42 percent (dry basis)—is scheduled for commercial production later this year. Depending on its application, the new product is rated 20 to 60 percent sweeter than sucrose. When commercially available it will sell for about 50 percent more per pound than

Selected price comparisons: Corn and corn refiner by-products

Year or quarter	No. 2 yellow corn	By-products		
		Corn gluten		Crude Corn oil ³
		Feed ¹	Meal ²	
Chicago, Illinois			Decatur, Illinois	
	Dollars per bu.	Dollars per ton	Dollars per ton	Dollars per cwt.
1970	1.38	49.07	138.07	16.56
1971	1.39	47.11	130.29	19.81
1972	1.30	50.97	139.11	16.37
1973	2.20	84.54	259.19	22.72
1974	3.20	90.50	229.93	41.30
1975	2.91	86.01	215.60	32.53
Quarters:				
1975:				
I	3.02	82.58	190.42	40.54
II	2.94	83.33	210.87	30.87
III	3.01	90.00	222.13	29.89
IV	2.66	88.12	239.00	28.81
1976:				
I	2.69	87.58	250.93	28.84
II	2.87	90.20	200.97	21.31
III	—	—	—	—
IV	—	—	—	—

¹ 21 percent protein. ² 60 percent protein. ³ Tank car, f.o.b. plant.

Source: No. 2 yellow corn, Chicago Board of Trade; Corn gluten feed and meal, *Feed Market News*; Crude corn oil, National Provisioner.

Corn sweetener price comparisons (dry basis)

Year, quarter or month	Corn sirup		High-fructose corn sirup	Dextrose
	Chicago	New York	Decatur, Illinois	New York
	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.	Dollars per cwt.
1970	6.78	8.46	(¹)	10.20
1971	6.43	8.77	(¹)	10.71
1972	4.52	5.78	(¹)	10.07
1973	7.06	8.53	(¹)	10.79
1974	11.43	13.21	(¹)	25.50
1975	15.39	18.07	23.11	22.44
1976				
Quarters:				
I	12.45	15.56	15.14	16.84
II	12.04	15.05	15.04	16.96
III	—	—	—	—
IV	—	—	—	—

¹ Price data on high-fructose corn sirup not available before 1975.

Source: Corn Sirup, Chicago, from BLS; all other data from *Journal of Commerce*

sugar. Its greatest potential would appear to be in combination with saccharin for sweetening low calorie foods and beverages. Less saccharin can be used with the 90 percent fructose product, thus reducing the after-taste often associated with saccharin.

Corn Sweetener Prices Declining

U.S. corn sweetener prices are declining in the third quarter this year. The decline was related to softening wholesale sugar prices plus increased competition in regular corn sirup and high-fructose corn sirup sales resulting from expanded production capacity. High-fructose corn sirup in mid-August was selling for around \$9.05 per cwt. in the Midwest; \$12.75 per cwt., dry basis. Regular corn sirup was reported available for about \$12.00 (dry basis) per cwt. in the Midwest and about \$14.75 per cwt. in the Northeast. Both prices were down nearly 50 cents from first quarter levels.

SWEETENER-CONTAINING PRODUCTS

Soft Drink Consumption Increased Slightly in 1975

The beverage industry, receiving 22 percent of total U.S. sugar deliveries in calendar 1975, was the second largest U.S. market for sugar, trailing only household use. Soft drink sales totaled \$9.4 billion in 1975. Per capita consumption of soft drinks last year was nearly 28 gallons, (equivalent to 221 16-oz. containers), a level higher than recorded in 1974 or 1973 (table S-8). This increase was partly in response to soft drink prices stabilizing and then declining slightly during the year in contrast to a nearly 50-percent price increase from January to December in 1974.

Over 85 percent of soft drink sales were in containers, with the remainder in bulk (over the counter and vending sales). Cola was the dominant flavor—64 percent of total sales; lemon-lime, a dis-

Table S-8—Soft Drinks: Per capita consumption, manufacturers' shipments, sales, and value; with quantity, per capita consumption, and value, of sugar use, 1960-75

Calendar year	Soft drinks								
	Manufacturers ¹			Per capita consumption		Sugar use ²			
	Sales	Average value	Shipments			Quantity	Per capita consumption	Total value ³	Unit value ⁴
Million dollars	Dollars per gallon	Million gallons	16-ounces	Gallons	Thousand tons	Pounds	Million dollars	Dollars per cwt.	
1960	1,857	0.77	2,422	109	13.6	1,018	11.3	188	9.22
1961	2,080	.80	2,600	115	14.4	1,081	11.8	195	9.01
1962	2,362	.80	2,952	129	16.1	1,215	13.1	223	9.16
1963	2,865	.87	3,306	142	17.7	1,346	14.3	270	10.04
1964	3,030	.87	3,496	148	18.5	1,410	14.7	279	9.90
1965	3,195	.87	3,867	154	19.2	1,472	15.2	274	9.31
1966	3,621	.90	4,023	166	20.8	1,590	16.3	305	9.59
1967	3,841	.93	4,116	169	21.1	1,614	16.4	321	9.95
1968	4,536	1.00	4,536	184	23.0	1,770	17.8	361	10.20
1969	4,662	1.00	4,662	187	23.4	1,812	18.0	374	10.31
1970	5,016	1.03	4,854	193	24.1	1,954	19.2	420	10.75
1971	5,475	1.06	5,151	202	25.2	2,073	20.1	481	11.60
1972	5,703	1.07	5,330	206	25.8	2,119	20.4	473	11.17
1973	6,241	1.10	5,674	218	27.3	2,258	21.5	561	12.43
1974	7,850	1.37	5,714	216	27.0	2,292	21.7	1,235	26.95
1975	9,426	1.60	5,891	221	27.6	2,288	21.5	1,218	26.61

¹Data on U.S. soft drink shipments, sales, and unit values, computed from "Products and Product Classes—Quantity and Value of Shipments by all All Producers (Including soft drinks, carbonated waters, and single strength equivalent of flavoring extracts and sirups)" reported in the 1958, 1963, 1967, and 1972 *Census of Manufacturers*, "Beverages," SIC Industry Groups 2086, Soft Drinks and Carbonated Waters, and 2087, Flavoring Extracts and Sirups, Not Elsewhere Classified, MC-20H Series, published infrequently by the U.S. Dept. of Commerce, Bureau of the Census, Washington, D.C., Data for noncensus years keyed to trend of soft drink production reported in *NSDA/1975 Sales Survey of the Soft Drink Industry*,

National Soft Drink Association, Washington, D.C., June 1976, p. 16. ²Quantity estimated by Economic Research Service, based on data from Fruit and Vegetable Division, Agricultural Marketing Service, U.S. Dept. of Agriculture. ³Unit value times total use. ⁴Annual average price of sugar delivered to U.S. confectionery manufacturers, from "Total Consumption of Selected Ingredients by the U.S. Confectionery Industry," reported annually in *Confectionery Manufacturers' Sales and Distribution (Surveys)*, U.S. Dept. of Commerce, Domestic and International Business Administration, Washington, D.C., It is believed that this price paid by U.S. confectioners is a reasonable estimate of the average annual price of sugar used in soft drinks.

tant second, accounted for 14 percent. Caloric-sweetened soft drinks accounted for 90 percent of total container sales.

Sugar use in beverages totaled a relatively stable 2.3 million short tons in 1973-75 (table S-8). Per capita sugar consumption in beverages was nearly 22 pounds. The estimated dollar value of sugar used by soft drink manufacturers was \$1.2 billion in 1974 and 1975. Both soft drink consumption and sugar use in beverages may further increase this year as both consumer incomes and employment rises.

Confectionery Consumption Down in Calendar 1975

Manufacturer shipments of confectionery totaled 3.4 billion pounds in calendar 1975, down 8 percent from 1974. Confectionery imports, exports, and total consumption were down as well (see table S-9).

The total manufacturer dollar value of sales was nearly \$3 billion. The manufacturer unit value of sales last year was 84 cents per pound, up from 76 cents in 1974 and 56 cents in 1973.

Per capita consumption of confectionery was nearly 17 pounds last year, down about a pound from 1974. Per capita consumption peaked at over 19 pounds in 1969 and has been declining since, partly reflecting the declining share of young people who eat the most confectionery. But the big factor in the decline in consumption last year was sharply higher prices for ingredients, including sugar and cocoa and chocolate (about 70 percent of U.S. confectionery contains cocoa or chocolate).

Sugar use in confectionery—the third largest industrial market after the beverage, and cereal and bakery product industries, totaled 916,000 tons last year down from about 1.1 million tons annually used during 1970-74 (table S-9). Per capita consumption of sugar used in confectionery totaled 8.6 pounds, down 1.7 pounds from 1974. There are indications that total consumption of confectionery (if not per capita) may match or perhaps exceed the 1975 level.

Cocoa and Chocolate Supplies Tightening

Early season prospects of a 6-percent increase in world cocoa bean production failed to materialize. The 1975/76 crop is now estimated at 1.52 million metric tons, down 1 percent from last year. The shortfall in production relative to earlier optimistic prospects occurred mostly in West Africa. Production in South America was higher than earlier expected, but still short of the 1974/75 crop.

World grindings for calendar 1976 are expected to run ahead of 1975, reflecting increased demand due to lower cocoa (and sugar) prices earlier this year. For calendar 1976, world supply and consumption are expected to be in near balance following an inventory buildup of nearly 100,000 tons in 1975.

Because of tightening supply prospects, cocoa prices increased to \$1.07 per pound in June and July. And cocoa butter prices have been near \$1.90 per pound since May. Cocoa prices are expected to remain firm until the size of the upcoming 1976/77 crop is indicated. Harvesting normally begins in October, but new crop supplies don't usually reach importing countries in large quantities before the first of the following year.

Cocoa and chocolate: Selected comparisons for U.S. imports, grind, and consumption (bean equivalent)

Description	1974	1975	First 6 months	
			1975	1976
	Million pounds	Million pounds	Million pounds	Million pounds
U.S. Imports:				
Cocoa beans	495	522	254	319
Minus reexports . . .	-51	-14	-11	-10
Net imports	444	508	243	309
Semiprocessed ¹				
Unsweetened chocolate	33	27	9	25
Cocoa butter	49	45	19	39
Unsweetened cocoa	167	167	72	99
Other products	3	3	2	1
Total	252	242	102	164
Consumer products ¹	18	11	6	6
TOTAL IMPORTS	714	761	351	479
U.S. grind	506	455	210	255
U.S. consumption	781	690	---	---
Per capita (pounds)	3.7	3.3	---	---

¹ Reexports of semiprocessed and consumer products are relatively insignificant.

Source: Import and grind data, Bureau of Census; Consumption data, Economic Research Service, U.S.D.A.

The U.S. grind totaled 255 million pounds in first half 1976, up over a fifth from first half 1975. U.S. imports of cocoa beans totaled 309 million pounds in first half 1976 compared to 243 million pounds for January-June 1974. Imports of semiprocessed cocoa and chocolate totaled 164 million

Table S-9—Confectionery: Sales, value, and supply and utilization; with quantity, per capita consumption, and value, of sugar use, 1960-75

Calendar year	Confectionery												
	U.S. manufacturers ¹		Supply and utilization							Sugar use ⁶			
			U.S. shipments	Imports ²	Total supply and utilization	Exports ³	Net change in "invisible" stocks ⁴	Domestic Disappearance ⁵		Quantity	Per capita consumption	Total value ⁷	Unit value ⁸
	Total	Per capita											
Million dollars	Cents per pound	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Pounds	Thousand tons	Pounds	Million dollars	Cents per pounds
1960	1,212	40.1	3,022	59	3,081	12	-11	3,080	17.0	938	10.4	173	9.22
1961	1,239	39.6	3,130	67	3,197	13	31	3,153	17.2	952	10.4	172	9.01
1962	1,259	40.1	3,140	76	3,216	11	-42	3,247	17.4	958	10.3	176	9.16
1963	1,321	40.4	3,269	96	3,365	13	-10	3,362	17.8	965	10.2	194	10.04
1964	1,412	41.0	3,443	101	3,544	15	39	3,490	18.2	979	10.2	194	9.90
1965	1,444	41.1	3,514	93	3,607	17	-43	3,633	18.7	992	10.2	185	9.31
1966	1,562	42.1	3,710	86	3,796	15	40	3,741	19.0	1,004	10.2	193	9.59
1967	1,647	43.7	3,769	100	3,869	16	-56	3,909	19.6	1,016	10.2	202	9.95
1968	1,791	44.9	3,989	119	4,108	16	87	4,005	19.9	1,070	10.6	218	10.20
1969	1,885	47.5	3,969	118	4,087	16	-27	4,098	20.2	1,008	9.9	208	10.31
1970	1,950	48.5	4,020	125	4,145	15	46	4,084	19.9	1,086	10.6	233	10.75
1971	2,014	51.0	3,950	121	4,071	19	-7	4,059	19.6	1,108	10.7	257	11.60
1972	2,024	52.1	3,885	136	4,021	26	-19	4,014	19.2	1,101	10.5	246	11.17
1973	2,186	56.2	3,889	139	4,028	34	46	3,948	18.8	1,120	10.6	278	12.43
1974	2,839	75.9	3,740	153	3,893	39	59	3,795	17.9	1,093	10.3	589	26.95
1975	2,898	84.3	3,438	132	3,570	34	-64	3,600	16.9	916	8.6	487	26.61

¹Data on U.S. Confectionery shipments, compiled from "Products and Product Classes-Quantity and Value of Shipments by all Producers (including confectionery and chocolate-type confectionery for retail sale by chocolate manufacturers)" reported in the 1958, 1963, 1967 and 1972 *Census of Manufacturers, "Sugar and Confectionery Products."* SIC Industry Groups 2065, and 2066, MC-20F series, published infrequently by U.S. Dept of Commerce, Bureau of the Census, Washington, D.C. Data for noncensus years keyed to trend of confectionery shipments reported in "Confectionery Shipments, Sales, Average

Value and Per Capita Consumption, 1927-75," *Confectionery Manufacturers' (Annual) Sales and Distribution (Surveys) 1975*, U.S. Dept of Commerce, Domestic and International Business Administration, Washington, D.C., June 1976, p. 14 ²Data from U.S. Dept of Commerce, *U.S. Imports*, FT-246, Statistical Classes, 156.3020, 157.1020, and 157.1040. ³Data from U.S. Dept of Commerce, *U.S. Exports*, FT-410, Statistical Classes, 062.0015, and 073.0020. ⁴Calculated as a residual. Negatives indicate increases in stock level during year, positives signify net withdrawals,

⁵Domestic disappearance for food use. ⁶Quantity estimated by Economic Research Service, based on data from Fruit and Vegetable Division, Agricultural Marketing Service, U.S. Dept. of Agriculture. ⁷Unit value times total use. ⁸Calculated from "Total Consumption of Selected Ingredients by the U.S. Confectionery Industry," reported annually in *Confectionery Manufacturers' (Annual) Sales and Distribution (Survey)*, U.S. Dept of Commerce, Domestic and International Business Administration, Washington, D.C.

Imported cocoa beans, and butter prices

Year, quarter, or month	Cocoa beans		Imported
	"Bahia"	"Accra" ¹	Cocoa butter
	<i>Cents per pound</i>		
1972	31.1	32.3	72.2
1973	61.1	64.4	140.2
1974	88.1	98.3	187.6
1975	65.0	74.9	140.2
1974:			
III	60.9	77.2	132.4
IV	63.9	74.9	140.1
1975:			
I	71.6	75.6	147.5
II	93.6	97.1	187.6
July	99.5	107.0	189.2
August ²	101.5	109.0	206

¹ New York Spot. ² Through August 13, only.

Source: New York Journal of Commerce.

pounds, up from 102 million pounds in first half 1975. Imports of unsweetened chocolate, cocoa butter, and unsweetened cocoa powder were all up from a year ago in first half 1976.

The outlook for the rest of the year suggests that imports of cocoa beans, semiprocessed cocoa and chocolate, consumer products as well as the U.S. grind will all total higher in calendar 1976 than in 1975. Given normal lags between delivery and use the full impact of currently much higher cocoa and cocoa butter prices may not be fully felt by either the confectionery industry or consumers until at least later this year. Future cocoa bean prices will be largely determined by both prospects and the actual size of the 1976/77 world cocoa crop

OTHER SWEETENERS

HONEY

U.S. Honey Supplies Nearly Equal to Last Year's Level

While weather has generally been good in the United States for producing sugar crops and corn (raw material for corn sweeteners), it has not been exceptionally good for producing honey. Trade sources believe that 1976 honey production may fall slightly short of last year's level of 197 million pounds.

While 1976 U.S. production will likely be down, U.S. imports are expanding, and could total 60 million pounds in calendar 1976 if average monthly shipments continue at their record pace of more

than 5 million pounds per month. U.S. exports appear likely to total little more than 5 million pounds in calendar 1976.

If the present indications for U.S. production, imports, and exports turn out about as now expected, total domestic disappearance for calendar 1976 would total about the same or a little larger than last year's 240 million pounds.

U.S. International Trade Commission Finding

On June 29 the U.S. International Trade Commission recommended to the President that a 30-percent ad valorem tariff (an additional tax of 30 percent of the market value of honey for U.S. imports in the exporting country) be assessed on honey imports in calendar years 1976, 1977, and 1978. The tariff would apply to imports exceeding the first 30 million pounds.⁷

The Commission's recommendation was based on a determination that honey "is being imported into the United States in such increased quantities to be a substantial cause of threat of serious injury to the domestic industry producing a like or directly competitive product."⁸ A Presidential decision on the recommendation of the International Trade Commission, unavailable at this time, may be forthcoming prior to publication of this report.

MAPLE SIRUP

U.S. maple sirup production in 1976 totaled 927,000 gallons, down 23 percent from the 1.20 million gallon level of 1975. Production declined in all States except Wisconsin. The decline resulted mostly from unseasonably warm weather coming earlier than normal thereby shortening the production season. Production was less than half last year's level in Pennsylvania and Ohio, down only slightly in Vermont, and roughly about three-quarters of last year's level in other States.

U.S. maple sirup producers received a record price of \$10.81 per gallon this season. The 1975 price was \$10.60 per gallon. Maple sirup is the highest priced natural caloric sweetener produced in the United States in commercial quantities.

⁷ For more information see: *Honey*, Report to the President on Investigation No. TA-201-14, under Section 201 of the Trade Act of 1974. USITC publication 781, U.S. International Trade Commission, Washington, D.C., June 29, 1976, 26 pp. Accompanying information obtained in the Investigation, 156 pp.

⁸ *Ibid.*, p. 6.

Table S-10—Sugar and products containing caloric sweeteners: Retail prices, U.S. average 1960-75, and by month 1975 to date

Year and month	Sugar, granulated 5-pounds	Bread, white, 1-pound	Cookies, cream sandwich, 1-pound	Ice cream, ½-gallon	Chocolate bar, 1-ounce	Chocolate syrup, 16-ounces	Cola drink, 72-ounces	Carbonated fruit drink, 72-ounces	Lemonade concentrate, frozen, 6-ounces	Fruit ¹ drink, canned, 46-ounces	Fruit cocktail, canned, 303 can	Pears, canned, 2½ can	Peaches, canned, 2½ can	Grape ² jelly, 10-ounces	Relish sweet pickle, 12-ounces
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1960	58.2	20.3	³ 24.4	86.8	5.0	—	⁴ 29.8	—	13.4	—	27.0	—	33.6	28.8	—
1961	58.9	20.9	51.8	86.4	4.5	—	⁴ 30.7	—	13.7	—	26.6	—	33.2	29.2	—
1962	58.5	21.2	52.2	85.8	4.5	—	n.a.	—	13.6	—	25.8	—	32.6	29.6	—
1963	67.9	21.6	52.1	85.0	4.6	—	52.7	—	14.3	—	25.7	—	32.8	30.3	—
1964	64.0	20.7	51.0	80.4	5.1	23.0	54.2	53.4	13.9	34.4	27.3	49.2	33.2	31.1	31.3
1965	59.0	20.9	50.7	78.7	5.1	23.0	54.8	53.6	12.8	34.1	26.1	47.0	31.9	31.2	31.5
1966	60.2	22.2	51.2	80.6	4.6	23.1	56.6	54.8	12.5	33.2	26.9	48.6	34.1	⁵ 31.5	32.5
1967	60.5	22.2	51.8	80.9	5.0	22.7	60.8	57.0	12.3	32.0	26.1	45.3	32.1	26.2	33.1
1968	60.9	22.4	50.9	80.7	5.3	23.2	65.1	60.5	12.4	32.2	28.3	53.4	35.2	26.6	33.9
1969	62.0	23.0	49.9	81.3	5.9	24.1	68.9	63.1	12.7	33.8	27.8	50.3	34.4	27.9	35.0
1970	64.8	24.3	52.2	84.5	6.5	25.1	72.6	69.1	13.2	35.3	28.3	49.5	35.2	29.9	36.9
1971	68.1	25.0	54.5	85.4	6.7	25.5	75.8	72.6	13.9	36.2	30.7	52.9	36.7	31.4	39.1
1972	69.5	24.7	55.2	85.8	6.7	25.2	83.3	73.2	14.4	36.8	31.6	53.5	37.5	32.9	41.8
1973	75.5	27.6	57.8	91.0	7.0	26.6	86.1	75.5	14.7	38.0	33.8	56.6	41.0	35.3	44.0
1974	161.7	34.5	73.5	107.6	9.8	36.5	108.9	93.7	17.2	43.7	40.8	65.2	52.2	45.2	48.9
1975	186.2	36.0	94.0	122.3	12.5	48.0	132.8	115.2	23.0	54.3	46.2	74.8	59.2	61.2	57.7
1975															
January	299.1	37.2	92.7	121.6	11.9	47.3	134.0	116.4	21.4	52.0	46.3	75.2	59.5	58.0	55.9
February	268.0	37.4	96.2	122.3	12.2	47.7	137.9	118.2	22.7	52.9	46.4	75.6	59.1	60.3	57.0
March	247.6	37.3	100.6	123.0	12.5	48.3	139.2	118.9	23.1	53.8	46.6	75.8	59.2	61.5	58.2
April	209.0	36.8	99.8	122.0	12.5	48.3	139.0	118.6	23.8	54.4	46.3	76.0	59.8	61.8	58.6
May	184.3	36.2	95.2	121.5	12.5	47.9	134.3	116.6	23.9	53.7	46.1	75.1	59.5	61.7	57.6
June	157.2	35.6	92.1	121.3	12.6	48.1	132.5	115.2	23.6	54.4	46.1	75.2	59.7	61.9	57.2
July	134.4	35.6	92.8	121.3	12.6	48.0	132.7	114.1	22.6	54.9	46.3	75.3	59.5	62.4	56.8
August	154.5	35.1	93.4	121.1	12.6	47.9	129.9	113.4	22.8	55.3	46.2	74.2	59.9	62.3	57.2
September	160.4	35.0	89.8	120.8	12.6	48.2	129.4	113.0	22.9	54.7	46.5	74.3	58.2	61.8	57.3
October	151.6	35.2	92.5	123.3	12.7	48.1	128.6	113.0	23.0	55.6	45.9	73.9	56.6	61.7	58.4
November	136.2	35.3	90.3	123.8	12.6	48.0	128.8	112.6	23.3	54.7	46.0	73.9	60.4	60.6	59.1
December	131.7	35.1	92.6	126.0	12.7	47.9	127.7	112.5	23.4	55.1	45.9	73.7	59.0	60.0	59.5
1976															
January	127.7	35.5	93.2	124.8	12.7	48.1	129.8	116.0	23.6	55.3	45.7	73.0	57.9	59.6	60.4
February	126.9	35.2	95.6	126.8	12.7	48.1	129.6	116.8	23.5	54.9	45.5	72.4	58.7	59.5	61.2
March	125.2	35.2	95.0	125.6	12.6	47.7	129.0	116.0	23.6	55.2	45.3	71.7	58.6	59.1	61.7
April	125.3	35.1	95.1	125.8	12.3	47.8	129.4	115.9	23.3	55.3	45.3	71.4	58.6	59.0	61.4
May	124.0	35.3	96.0	125.3	12.2	47.7	129.9	116.2	23.0	54.9	45.1	70.8	58.1	58.8	60.0
June	124.5	35.6	96.2	126.7	12.1	47.7	131.0	116.7	22.3	55.4	45.9	70.8	58.6	58.8	59.3
July	122.4	35.4	96.4	125.2	12.1	47.6	130.8	116.2	21.9	55.6	45.9	71.1	59.1	58.3	58.7

¹ Pineapple-grapefruit. ² 12-ounces through 1966. ³ Vanilla cookies. ⁴ 36-ounces. ⁵ 9 month average. n.a.—not available.

Source: Bureau of Labor Statistics.

Table S-11--World centrifugal sugar production in specified countries,
1971/72 to 1975/76¹

Region and country	1971/72	1972/73	1973/74	1974/75	1975/76 ²
	<i>1,000 short tons— raw value</i>				
North America:					
United States:					
Mainland cane	1,206	1,620	1,420	1,470	1,734
Hawaii	1,119	1,129	1,041	1,105	1,145
Puerto Rico	298	255	290	300	295
Total U.S. cane	2,623	3,004	2,751	2,875	3,174
Sugarbeets	3,512	3,663	3,197	3,006	3,840
Total U.S.	6,135	6,667	5,948	5,881	7,014
Caribbean:					
Cuba	4,837	5,787	6,393	6,283	6,283
Dominican Republic	1,256	1,259	1,316	1,251	1,300
Other countries	1,015	957	973	917	974
Total Caribbean	7,108	8,003	8,682	8,451	8,557
Other Mainland:					
Mexico	2,778	3,053	3,125	3,004	3,031
Canada	164	161	126	111	141
Central America	1,085	1,092	1,269	1,451	1,606
Total Other Mainland	4,027	4,306	4,520	4,566	4,778
Total North America ³	17,270	18,976	19,150	18,899	20,351
South America:					
Argentina	1,092	1,426	1,819	1,689	1,487
Brazil	6,227	6,795	7,672	8,157	6,944
Colombia	871	898	937	1,001	1,090
Peru	1,015	1,014	1,125	1,091	1,069
Venezuela	570	571	637	568	531
Other countries	1,085	1,031	1,159	1,290	1,528
Total South America ³	10,860	11,735	13,349	13,796	12,651
Europe:					
Western Europe:					
E.C.-9					
Belgium-Luxemburg	927	758	865	683	783
Denmark	358	377	405	466	531
France	3,530	3,289	3,492	3,250	3,562
West Germany	2,584	2,690	2,707	2,687	2,792
Ireland	201	186	208	158	219
Italy	1,367	1,381	1,250	1,113	1,545
Netherlands	923	833	917	856	1,008
United Kingdom	1,301	1,062	1,154	681	766
Total E.C.-9 ³	11,189	10,577	10,999	9,895	11,206
Non E.C.					
Austria	325	428	408	438	551
Greece	170	142	177	206	338
Spain	1,070	915	899	659	1,019
Sweden	294	322	291	336	305
Other countries	173	196	208	189	185
Total Non E.C. ³	2,033	2,002	1,983	1,829	2,398
Total Western Europe ³	13,222	12,579	12,982	11,724	13,604
Eastern Europe:					
Czechoslovakia	772	859	947	937	827
East Germany	573	794	777	772	716
Poland	1,887	2,016	2,003	1,716	2,149
Romania	490	636	753	618	617
Yugoslavia	464	471	532	611	539
Other countries	600	639	672	656	839
Total Eastern Europe ³	4,786	5,413	5,685	5,310	5,688
Total Europe ³	18,008	17,993	18,666	17,034	19,292
U.S.S.R.	8,813	8,984	10,549	8,521	8,488

See footnotes at end of table.

**Table S-11—World centrifugal sugar production in specified countries,
1971/72 to 1975/76¹—Continued**

Region and country	1971/72	1972/73	1973/74	1974/75	1975/76 ²
	<i>1,000 short tons— raw value</i>				
Africa:					
Egypt	500	650	658	595	683
Mauritius	688	756	768	767	547
Mozambique	357	402	430	441	268
South Africa	2,056	2,111	1,909	2,076	1,986
Other countries	2,075	2,081	2,274	2,391	2,623
Total Africa ³	5,677	6,002	6,041	6,270	6,108
Asia:					
China-Peoples Republic	2,115	2,708	2,899	2,646	2,756
China-Rep. of Taiwan	822	860	983	828	948
India	4,222	5,040	5,456	6,387	6,063
Indonesia	750	981	1,047	1,102	1,157
Iran	639	689	734	711	755
Japan	639	716	720	527	526
Pakistan	392	518	701	614	678
Philippines	2,061	2,673	2,772	2,717	3,086
Thailand	694	716	1,025	1,142	1,532
Turkey	1,003	894	811	919	1,087
Other countries	461	333	464	476	489
Total Asia ³	13,800	16,129	17,614	18,069	19,078
Oceania:					
Australia	3,015	3,015	2,923	3,226	3,263
Fiji Islands	376	413	386	397	408
Total Oceania ³	3,391	3,428	3,309	3,623	3,671
TOTAL WORLD³	77,818	83,247	88,679	86,212	89,639

¹ Crop-year basis. All campaigns which begin not earlier than May of one year nor later than April of the following year, are included in the same crop year. Each country's total annual production is credited to the May/April year in which sugar production began. ² Preliminary. ³ May not add due to rounding.

E.C. Economic Community.

Source: Foreign Agricultural Circular, FAS, USDA.

Table S-12—Caloric and noncaloric sweeteners: Per capita U.S. consumption, 1960-75

Calendar year	Refined cane and beet sugar						Corn sweeteners ¹			Minor caloric ¹			Total caloric	Noncaloric sweeteners ²		
	U.S. grown sugar			Cane sugar		Total	Corn sirup	Dex-trose	Total	Honey	Edible sirups	Total		Sacc-harin	Cyclamate	Total non-caloric
	Beet sugar	Cane sugar	Total	Im-ported	Total											
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
1960	25.2	28.1	53.3	44.3	72.4	97.6	8.2	3.4	11.6	1.2	0.8	2.0	111.2	1.9	0.3	2.2
1961	26.1	28.7	54.8	43.0	71.7	97.8	8.6	3.4	12.0	1.1	.8	1.9	111.7	2.1	.4	2.5
1962	23.9	28.0	51.9	45.4	73.4	97.3	9.3	3.6	12.9	1.1	.9	2.0	112.2	2.5	.4	2.9
1963	27.2	27.8	55.0	41.7	69.5	96.7	9.9	4.3	14.2	1.1	.7	1.8	112.7	3.0	.7	3.7
1964	28.5	30.3	58.8	37.9	68.2	96.7	10.9	4.1	15.0	1.0	.7	1.7	113.4	3.5	1.3	4.8
1965	29.4	30.3	59.7	37.1	66.4	96.8	11.0	4.1	15.1	1.1	.7	1.8	113.7	4.0	1.7	5.7
1966	28.3	28.6	56.9	40.3	69.2	97.2	11.2	4.2	15.4	1.0	.7	1.7	114.3	4.5	1.9	6.4
1967	26.6	29.9	56.5	41.8	71.7	98.3	11.3	4.2	15.5	.9	.5	1.4	115.2	4.8	2.1	6.9
1968	27.8	26.5	54.3	44.7	71.2	99.0	11.8	4.3	16.1	.9	.7	1.6	116.7	5.0	2.2	7.2
1969	30.1	25.2	55.3	45.4	70.6	100.7	12.3	4.5	16.8	1.0	.6	1.6	119.1	5.3	1.6	6.9
1970	31.4	25.0	56.4	45.5	70.5	101.9	12.7	4.6	17.3	1.0	.5	1.5	120.7	6.2	(³)	6.2
1971	31.1	22.8	53.9	48.5	71.3	102.4	13.0	5.0	18.0	.9	.5	1.4	121.8	5.7	(³)	5.7
1972	30.4	25.4	55.8	47.0	72.4	102.8	15.0	4.4	19.4	1.0	.5	1.5	123.7	5.7	(³)	5.7
1973	30.4	24.9	55.3	46.2	71.1	101.5	17.4	4.8	22.2	.9	.5	1.4	125.1	5.7	(³)	5.7
1974 ⁴	26.1	21.0	47.1	49.5	70.5	96.6	18.5	4.9	23.4	.8	.4	1.2	121.2	7.0	(³)	7.0
1975 ⁵	28.6	26.2	54.8	33.9	60.1	88.7	19.3	5.1	24.4	.9	.4	1.3	114.4	6.0	(³)	6.0

¹ Dry basis. Recent corn sweetener consumption may be under stated due to incomplete data. ² Sugar sweetened equivalent—assumes saccharin is 300 times as sweet as sugar, and cyclamate is 30 times as sweet as sugar. ³ Cyclamate food use was banned by the Food and Drug Administration, effective in 1970. ⁴ Preliminary. ⁵ Estimate.

Table S-13—Trends in corn refinery exports, annual 1970-75 and first six months, 1975-76

Year	Primary products			By-products					Total corn refiners exports
	Corn starch	Glucose	Dextrose	Corn oil	Corn oil, cake and meal	Corn, by products			
						Gluten feed	Other	Total	
Quantity									
	<i>Thousand pounds</i>								
Calendar year									
1970	52,163	15,468	28,802	12,715	6,536	N.A.	N.A.	1,329,332	1,445,016
1971	46,311	15,469	24,968	15,551	7,090	N.A.	N.A.	1,244,548	1,353,937
1972	56,150	14,068	52,608	25,870	5,312	1,556,296	157,520	1,723,816	1,877,824
1973	69,221	16,080	66,032	20,608	78,306	1,761,582	230,362	1,991,944	2,242,191
1974	93,686	20,343	65,953	61,717	15,388	1,426,260	83,690	1,509,950	1,767,037
1975	70,730	12,543	64,876	45,422	2,799	2,210,500	163,988	2,374,488	2,570,858
First 6 months									
1975	36,169	7,750	29,899	26,550	2,000	870,000	60,000	930,000	1,032,367
1976	36,013	5,521	27,789	40,660	2,000	1,128,000	168,000	1,296,000	1,407,983
Value									
	<i>Thousand dollars</i>								
Calendar year									
1970	6,015	1,171	2,605	2,923	233	N.A.	N.A.	37,137	50,084
1971	5,343	1,104	2,311	4,213	223	N.A.	N.A.	35,010	48,204
1972	6,364	927	4,622	5,799	165	48,000	5,344	53,344	71,221
1973	8,676	1,445	6,608	5,471	5,330	84,837	9,537	94,374	121,904
1974	15,355	2,604	9,395	27,418	953	73,131	4,391	77,522	113,247
1975	14,652	2,063	12,590	22,920	197	97,985	9,347	107,332	159,754
First 6 months									
1975	7,554	1,289	6,586	14,108	171	44,245	3,705	47,950	77,658
1976	7,934	863	4,545	14,308	121	59,733	8,749	68,482	96,253

N.A.—Not available.

Source: U.S. Department of Commerce.

Table S-14 Molasses: Blackstrap, beet, citrus, and corn (hydrol), annual average 1971-75, with first and second quarter averages 1976, price f.o.b. tank car or tank truck¹

Year	Blackstrap			Beet molasses		Citrus molasses	Corn molasses
	New Orleans	Baltimore	California Ports	Colo., Mont., and Wyom.	Ore., Utah, and Idaho	Florida	Chicago
	<i>Dollars per ton</i>	<i>Dollars per ton</i>	<i>Dollars per ton</i>	<i>Dollars per ton</i>	<i>Dollars per ton</i>	<i>Dollars per ton</i>	<i>Dollars per ton</i>
1971	25.56	28.13	28.13	37.00	37.00	19.00	32.05
1972	27.10	29.67	29.50	36.55	37.00	21.75	32.80
1973	57.30	60.62	58.31	50.85	45.25	30.00	50.45
1974	68.40	72.15	70.80	78.70	71.25	45.90	66.25
1975 ²	45.40	51.35	50.00	58.80	59.70	41.95	47.45
1976 ³							
Quarter:							
I	53.58	58.38	52.77	64.77	61.81	32.00	51.23
II	49.46	54.96	48.31	64.31	59.27	36.85	48.46
III	—	—	—	—	—	—	—
IV	—	—	—	—	—	—	—

¹ Per ton prices are based on 171 gallons for blackstrap, beet and corn molasses and on 175 gallons for citrus molasses. Prices represent sales f.o.b. terminal to the general feed trade and do not include sales made under various pricing arrangements above or below prices generally available to the ultimate user. Ton - 2,000 lbs; Gallon - U.S. gallon. ² Preliminary. ³ Estimated.

Molasses Market News, Annual Summary, AMS, U.S.D.A. Denver, Colorado, various issues. Molasses Market News, Weekly, various issues, 1975 and 1976.

MARKET NEWS

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Fruit and Vegetable Division

Agricultural Marketing Service

SUGAR MARKET HIGHLIGHTS

Deliveries

July—Sugar deliveries in July were 17 percent lower than in July 1975 according to preliminary data. However, January-July deliveries were 14 percent ahead of the same period of 1975.

tons, raw value, down 14 percent from the previous month end, but about 57 percent greater than July 31, 1975 stocks.

Inventories

Month-End Stocks—Sugar stocks held by primary distributors on July 31 were 2 million short

Domestic Production

Total sugar production in the United States was 2.2 million tons, raw value, through June 1976, 41 percent ahead of production in the first half of 1975. Hawaiian sugar production for the first 31 weeks of 1976 was 563,259 short tons, down 16 percent from the five year average for the period.

Table 1—Sugar supply and disposition by primary distributors, January-June 1976

Item (1)	Beet processors (2)	Importers (3)	Mainland cane processors ¹ (4)	Refiners		Net total (7)
				Raw (5)	Refined (6)	
<i>(Short tons, raw value)</i>						
SUPPLY						
Inventory Jan. 1, 1976	1,595,783	0	457,749	427,540	249,742	2,730,814
Production and movement						
Received direct-consumption sugar	0	48,627	0	0	5,236	53,863
Produced from beets or cane	1,546,108	0	649,030	50,286	0	
Less deliveries to refiners	0	0	815,805	0	0	1,429,619 ²
Receipts of raws by refiners	0	0	0	³ 3,473,128	0	
Less raws melted	0	0	0	3,421,545	0	⁴ 51,583
Refined from raws melted	0	0	0	0	3,377,452	3,377,452
Adjustments	-1,090	0	+15,397	-1,033	-9,793	+3,481
Sub-total	1,545,018	48,627	-151,378	100,836	3,372,895	4,915,998
Net total supply	3,140,801	48,627	306,371	528,376	3,622,637	7,646,812
DISPOSITION						
Distribution for						
Continental consumption ⁵	1,939,583	48,627	7,419	6,604	3,298,212	5,300,445
Export	6,100	0	106	0	26,396	32,602
Livestock feed	0	0	0	0	0	0
Alcohol	0	0	0	0	0	0
Sub-total	1,945,683	48,627	7,525	6,604	3,324,608	5,333,047
Inventory June 30, 1976	1,195,118	0	298,846	521,772	298,029	2,313,765
Total Distribution and Inventory *.....	3,140,801	48,627	306,371	528,376	3,622,637	7,646,812

¹ Establishments that acquire no raw sugar from others for refining. Processor-refiners are included with refiners.
² Production less deliveries of raw sugar to refiners.

³ Includes 815,805 tons received from mainland cane processors.
⁴ Receipts of raw sugar by refiners less melt.
⁵ Includes deliveries for United States Military forces at home and abroad.

Imports

Imported sugar receipts for January-June were 2.1 million short tons, raw value, compared with 1.5 million tons in the same period in 1975. Refined sugar imports were 75 percent ahead of 1975.

In June, Australia and Nicaragua joined the group of countries that have each shipped over 100,000 tons to the United States in 1976, increasing the number to 8 countries. Notably absent from first half year raw shipments were Brazil, Malawi, Mauritius and Mexico. Domestic offshore receipts from Hawaii and Puerto Rico were 44 percent above first-half 1975.

Raw Sugar Prices

World—Compared with June, volume on the New York Coffee and Sugar Exchange advanced nearly 14 percent in July with total volume of 127,991. The July average spot price was slightly higher at 13.21 cents per pound. Prices averaged higher during the first half of the month, but were

lower during the second half. The decline continued in August at pre-1974 levels averaging 10.78 cents per pound through the first two weeks.

Domestic—Trading volume in July increased by 46 percent with a total of 1,120. The July average spot price was 14.59 up 19 points from June. However in August prices continued a downward trend which began in mid-July. The average spot price for the first two weeks in August was 12.21 cents per pound, the lowest price level since December 1973.

Refined Sugar Prices

Wholesale—Prices in July averaged about 1 to 2 percent higher in the East, South, Chicago West and Gulf Regions, and were about unchanged in the Northwest. Prices on the Pacific coast were about 2 to 4 percent higher. Eastern beet prices averaged less than one percent below the June level.

Retail—The average U.S. retail price for a 5-pound bag of granulated sugar was 24.5 cents per pound.

Table 2—Distribution of sugar by primary distributors, January-June 1976 and 1975

Item	1976	1975	Change 1975 to 1976
(Short tons, raw value)			
Continental United States			
Refiners' raw	6,604	4,789	+1,815
Refiners' refined	3,324,608	2,946,799	+377,809
Sub-total	3,331,212	2,951,588	+379,624
Beet processors' refined	1,945,683	1,403,987	+541,696
Importers' direct consumption	48,627	30,007	+18,620
Mainland sugarcane processors'	7,525	35,616	-28,091
Total	5,333,047	4,421,198	+911,849
For:			
Alcohol	0	2,785	-2,785
Export	32,602	78,927	-46,325
Livestock feed	0	2,597	-2,597
Continental consumption	5,300,445	4,336,889	+963,556
Puerto Rico	¹ 70,000	66,781	+3,219
Hawaii	35,190	15,761	+19,429

¹ Includes deliveries for United States Military forces at home and abroad. ² Estimated.

Table 3—Stocks of sugar held by primary distributors in the continental United States, June 30, 1976 and 1975

Item	1976	1975	Change 1975 to 1976
(Short tons, raw value)			
Refiners' raw	521,772	423,356	+98,416
Refiners' refined	298,029	274,469	+23,560
Sub-total	819,801	697,825	+121,976
Beet processors' refined	1,195,118	1,010,419	+184,699
Importers' direct consumption	0	0	0
Mainland sugarcane processors'	298,846	237,830	+61,016
Total	2,313,765	1,946,074	+367,691

Table 4—Distribution of sugar by primary distributors in the continental United States, July and January-July 1976 and 1975

Item	1976 ¹		1975	
	July	Jan.-July	July	Jan.-July
	<i>(Short tons, raw value)</i>			
Refiners	606,422	3,937,634	743,132	3,694,720
Beet Processors' refined	365,363	2,311,046	450,245	1,854,232
Importers' direct consumption	² 4,000	52,627	4,214	34,221
Mainland sugarcane processors'	² 1,000	8,525	7,353	42,969
Total	976,785	6,309,822	1,204,944	5,626,142
For:				
Alcohol	N.A.	0	0	2,785
Export	N.A.	32,602	30,990	109,917
Livestock feed	N.A.	0	0	2,597
Continental consumption ³	976,785	6,277,230	1,173,954	5,510,843

¹ Preliminary. ² Estimated. ³ Includes deliveries for U.S. military forces at home and abroad.

Table 5—Stocks of sugar held by primary distributors in the continental United States, July 31, 1976 and July 31, 1975

Item	1976 ¹	1975	Change 1975 to 1976
	<i>(Short tons, raw value)</i>		
Refiners' raw	555,216	272,491	+282,725
Refiners' refined	279,737	211,042	+68,695
Sub-total	834,953	483,533	+351,420
Beet processors' refined	940,730	652,381	+288,349
Importers' direct consumption	0	0	0
Mainland sugarcane processors	² 220,000	139,041	+80,959
Total	1,995,683	1,274,955	+720,728

¹ Preliminary. ² Estimated.

Table 6—Mainland Sugar: Production and marketings January-June 1976 and 1975

Item	1976	1975	Change 1975 to 1976
	<i>(Short tons, raw value)</i>		
Production			
Cane			
Florida	620,336	524,236	+96,100
Louisiana	0	4,784	-4,784
Texas	78,695	51,384	+27,311
Sub-total	699,031	580,404	+118,627
Domestic Beet	1,545,018	1,008,204	+536,814
Total	2,244,049	1,588,608	+655,441
Marketings			
Mainland cane			
Florida	589,100	438,052	+151,048
Louisiana	207,144	81,509	+125,635
Texas	109,583	62,194	+47,389
Sub-total	905,827	581,755	+324,072
Beet Processors ¹	1,945,683	1,403,987	+541,696
Total	2,851,510	1,985,742	+865,768

¹ Marketing includes 6,100 tons marketed for export in 1976 and 3,219 tons in 1975.

Table 7—Refined sugar production and month-end stocks

Period	Production				Month-end stocks	
	Cane Sugar Refiners	Beet Sugar Processors			Cane Sugar Refiners	Beet Sugar Processors
		Old Crop ¹	New Crop	Total		
<i>1,000 short tons, raw value</i>						
1971-75 average	638			283	285	1,075
1974 monthly average	678			268	272	987
1975 monthly average	551			268	261	1,066
1975						
August	661	35	85	120	251	400
September	615	2	164	166	265	246
October	622	--	629	629	262	617
November	570	--	659	659	275	1,082
December	541	--	799	799	236	1,596
1976						
January	517	595	--	595	280	1,915
February	484	261	--	261	277	1,906
March	562	161	--	161	237	1,700
April	563	196	--	196	261	1,562
May	612	207	--	207	285	1,435
June ²	635	125	--	125	298	1,195
July ³	588	71	40	111	280	941
Last 12-month average	581	--	--	336	267	1,216

¹ Beet sugar made from sugarbeets of the prior crop year in the month and year shown. ² Revised. ³ Preliminary.

Table 8—Sugar receipts of refiners and importers by source of supply
January-June 1976 and 1975

Source of supply	Raw Sugar		Direct Consumption Sugar		Total	
	1976	1975	1976	1975	1976	1975
	<i>Short tons, raw value</i>					
OFFSHORE						
Foreign						
Argentina	56,735	5,932	—	—	56,735	5,932
Australia	119,307	129,700	—	9	119,307	129,709
Belize	3,292	29,867	—	—	3,292	29,867
Belgium	—	—	623	—	623	—
Bolivia	18,404	—	—	—	18,404	—
Brazil	—	37,782	—	—	—	37,782
Canada	—	—	24,731	13,435	24,731	13,435
China, Republic of	57,777	88,022	—	—	57,777	88,022
Colombia	27,647	43,039	198	4,285	27,845	47,324
Costa Rica	48,408	31,826	50	—	48,458	31,826
Dominican Republic	251,894	454,608	—	—	251,894	454,608
Ecuador	28,440	1,396	—	—	28,440	1,396
El Salvador	93,759	75,808	—	—	93,759	75,808
Fiji Islands	—	—	—	1	—	1
France	—	—	2,317	—	2,317	—
Germany, West	—	—	730	1	730	1
Guatemala	201,718	35,355	—	—	201,718	35,355
Haiti	6,218	8,648	—	—	6,218	8,648
Honduras	4,571	—	—	—	4,571	—
India	163,061	29	13,918	2	176,979	31
Korea	—	—	590	—	590	—
Malagasy Republic	13,400	—	—	—	13,400	—
Mauritius	—	13,137	—	—	—	13,137
Malawi	—	5,661	—	—	—	5,661
Mexico	—	35,633	320	5,846	320	41,479
Mozambique	11,979	—	—	—	11,979	—
Netherlands	—	—	1,283	23	1,283	23
Netherlands Antilles	—	—	—	1,279	—	1,279
Nicaragua	121,156	52,378	59	1	121,215	52,379
Panama	78,699	72,315	—	534	78,699	72,849
Paraguay	7,569	—	—	—	7,569	—
Peru	179,647	37,570	—	—	179,647	37,570
Philippines	281,757	169,146	—	—	281,757	169,146
South Africa	61,585	64,695	1	—	61,586	64,695
Sweden	—	—	—	2	—	2
Thailand	44,520	12,011	—	—	44,520	12,011
United Kingdom	—	—	12	21	12	21
Venezuela	—	—	—	24	—	24
West Indies	173,230	139,261	—	132	173,230	139,393
Total Foreign	2,054,773	1,543,819	44,832	25,595	2,099,605	1,569,414
Domestic						
Hawaii	464,345	396,863	¹ 5,236	¹ 2,592	469,581	399,455
Puerto Rico	136,507	20,990	3,795	542	140,302	21,532
Total Domestic	600,852	417,853	9,031	3,134	609,883	420,987
Total Offshore	2,655,625	1,961,672	53,863	28,729	2,709,488	1,990,401
Mainland cane area	866,091	518,401	² 0	² 0	866,091	518,401
Acquired for repro- cessing and samples	1,697	1,444	0	0	1,697	1,444
GRAND TOTAL	3,523,413	2,481,517	53,863	28,729	3,577,276	2,510,246

¹ Refined sugar received by refiners. ² Refined sugar produced direct from cane by processors - refiner.

Table 9—Primary distribution of sugar, continental United States, by States, June 1976

State and region	Cane sugar refiners	Beet sugar processors	Mainland cane sugar mills	Total
<i>Hundredweights¹</i>				
New England				
Connecticut	84,497			84,497
Maine	37,906			37,906
Massachusetts	485,291	2,400		487,691
New Hampshire	92,235			92,235
Rhode Island	31,511			31,511
Vermont	10,295			10,295
Sub-total	741,735	2,400		744,135
Mid-Atlantic				
New Jersey	715,472	10,195		725,667
New York	1,033,894	65,663	1,360	1,100,917
Pennsylvania	1,015,119	43,633		1,058,752
Sub-total	2,764,485	119,491	1,360	2,885,336
North Central				
Illinois	508,770	1,478,927	18,000	2,005,697
Indiana	266,385	230,260		496,645
Iowa	61,990	114,647		176,637
Kansas	58,630	116,584		175,214
Michigan	227,409	249,437		476,846
Minnesota	44,106	179,900		224,006
Missouri	291,276	186,640		477,916
Nebraska	14,690	179,900		146,475
North Dakota	876	32,319		33,195
Ohio	721,493	337,390		1,058,883
South Dakota	2,435	23,532		25,967
Wisconsin	113,832	266,912		380,744
Sub-total	2,311,892	3,348,333	18,000	5,678,225
Southern				
Alabama	260,245	13,420		260,245
Arkansas	94,570			107,990
Delaware	231,418	0		231,418
District of Columbia	31,275	9		31,284
Florida	574,761			574,761
Georgia	570,604	-637		569,967
Kentucky	164,980	13,581		178,561
Louisiana	364,269		1,700	365,969
Maryland	414,715	5,950		420,665
Mississippi	127,873			127,873
North Carolina	457,040			457,040
Oklahoma	96,217	44,974		141,191
South Carolina	223,356			223,356
Tennessee	416,388	10,376		426,764
Texas	807,587	259,811		1,067,398
Virginia	265,860	6,950		272,810
West Virginia	65,274	1,250		66,524
Sub-total	5,166,432	355,684	1,700	5,523,816
Western				
Alaska	1,831	400		2,231
Arizona	26,144	59,927		86,071
California	504,068	1,375,553		1,879,621
Colorado	14,338	148,235		162,573
Idaho	4,200	10,080		14,280
Montana	4,693	32,259		36,952
Nevada	3,401	7,942		11,343
New Mexico	9,305	28,136		37,441
Oregon	66,279	140,074		206,353
Utah	11,569	69,420		80,989
Washington	60,140	157,579		217,719
Wyoming	1,382	20,190		21,572
Sub-total	707,350	2,049,795		2,757,145
Unspecified	—	943,283		943,283
GRAND TOTAL	11,691,894	6,818,986	21,060	18,531,940

¹ Reported as produced or imported and delivered except liquid sugar which is on a sugar solids content basis.

Table 10—Primary distribution of sugar, Continental United States, by States, January-June 1976

State and Region	Cane sugar refiners	Beet sugar processors	Mainland cane sugar mills	Total
<i>Hundredweight¹</i>				
New England				
Connecticut	481,165	12,473		493,638
Maine	195,240			195,240
Massachusetts	2,262,471	56,300		2,318,771
New Hampshire	438,039			438,039
Rhode Island	143,979	15,000		158,979
Vermont	37,902			37,902
Sub-total	3,558,796	83,773		3,642,569
Mid-Atlantic				
New Jersey	4,022,656	125,178		4,147,834
New York	5,499,080	971,987	6,350	6,477,417
Pennsylvania	5,572,412	363,996	3,810	5,940,218
Sub-total	15,094,148	1,461,161	10,160	16,565,469
North Central				
Illinois	3,077,250	8,126,824	121,077	11,325,151
Indiana	1,640,076	1,111,550		2,751,626
Iowa	315,933	666,904		982,837
Kansas	301,466	556,945		858,411
Michigan	1,343,865	1,568,035		2,911,900
Minnesota	186,016	915,671		1,101,687
Missouri	1,366,712	839,821		2,206,533
Nebraska	127,877	757,536		885,413
North Dakota	4,845	142,699		147,544
Ohio	3,553,118	1,834,905		5,388,023
South Dakota	14,923	111,414		126,337
Wisconsin	455,921	1,417,838		1,873,759
Sub-total	12,388,002	18,050,142	121,077	30,559,221
Southern				
Alabama	1,284,819	-5		1,284,814
Arkansas	489,401	83,446		572,847
Delaware	1,066,548	800		1,067,348
Dist. of Columbia	143,344	2,437		145,781
Florida	3,008,511	800		3,009,311
Georgia	3,333,893	65,060		3,398,953
Kentucky	941,357	63,901		1,005,258
Louisiana	1,883,765		8,593	1,892,358
Maryland	2,259,933	17,639		2,277,572
Mississippi	737,245	100	450	737,795
North Carolina	2,035,896	16,003		2,051,899
Oklahoma	515,749	239,430		755,179
South Carolina	1,110,253			1,110,253
Tennessee	2,100,009	93,202		2,193,211
Texas	4,115,681	1,166,689	430	5,282,800
Virginia	1,522,488	33,926		1,556,414
West Virginia	362,655	6,850		369,505
Sub-total	26,911,547	1,790,278	9,473	28,711,298
Western				
Alaska	14,102	3,665		17,767
Arizona	176,844	314,480		491,324
California	3,010,856	6,536,741		9,547,597
Colorado	101,262	759,743		861,005
Idaho	19,487	42,683		62,170
Montana	30,941	148,283		179,224
Nevada	18,802	38,460		57,262
New Mexico	52,299	145,196		197,495
Oregon	311,442	431,431		742,873
Utah	73,252	285,950		359,202
Washington	329,530	772,534		1,102,064
Wyoming	10,161	82,112		92,273
Sub-total	4,148,978	9,561,278		13,710,256
Unspecified	—	5,307,252	—	5,307,252
GRAND TOTAL	62,101,471	36,253,884	140,710	98,496,065

¹ Reported as produced or imported and delivered except liquid sugar is on a sugar solids content basis.

Table 11—Primary distribution of sugar, Continental United States, by States, January-June 1976 and 1975

State and Region	Cane Sugar refiners		Beet processors		Total all Primary Distributors ¹	
	1976	1975	1976	1975	1976	1975
	<i>Thousands of hundredweights²</i>					
New England						
Connecticut	481	425	13	13	494	438
Maine	195	183			195	183
Massachusetts	2,263	1,705	56	99	2,319	1,853
New Hampshire	438	385			438	385
Rhode Island	144	111	15		159	111
Vermont	38	77		3	38	80
Sub-total	3,559	2,886	84	115	3,643	3,050
Mid-Atlantic						
New Jersey	4,023	3,274	125	114	4,148	3,414
New York	5,499	4,884	972	886	6,478	5,828
Pennsylvania	5,572	4,797	364	370	5,940	5,198
Sub-total	15,094	12,955	1,461	1,370	16,566	14,440
North Central						
Illinois	3,077	3,276	8,127	5,612	11,325	8,963
Indiana	1,640	1,544	1,111	551	2,751	2,095
Iowa	316	397	667	528	983	925
Kansas	301	235	557	462	858	697
Michigan	1,344	1,551	1,568	2,147	2,912	3,699
Minnesota	186	172	916	750	1,102	922
Missouri	1,367	1,305	840	654	2,207	1,959
Nebraska	128	101	757	613	885	714
North Dakota	5	5	143	114	148	119
Ohio	3,553	3,335	1,835	1,560	5,388	4,896
South Dakota	15	15	111	85	126	100
Wisconsin	456	389	1,418	896	1,874	1,285
Sub-total	12,388	12,325	18,050	13,972	30,559	26,374
Southern						
Alabama	1,285	990	*		1,285	990
Arkansas	490	434	83	51	573	485
Delaware	1,066	764	1		1,067	764
District of Columbia	143	140	3	4	146	144
Florida	3,008	2,158	1	13	3,009 ^s	2,610
Georgia	3,334	2,872	65	118	3,399	2,990
Kentucky	941	812	64	20	1,005	833
Louisiana	1,884	1,584			1,892	1,586
Maryland	2,260	2,164	18	12	2,278	2,177
Mississippi	737	484	*	13	738	497
North Carolina	2,036	1,655	16	9	2,052	1,666
Oklahoma	516	455	239	188	755	643
South Carolina	1,110	913		13	1,110	928
Tennessee	2,100	1,614	93	40	2,193	1,654
Texas	4,116	3,677	1,167	700	5,283	4,383
Virginia	1,522	1,181	34	48	1,556	1,229
West Virginia	363	272	7	14	370	286
Sub-total	26,911	22,169	1,791	1,243	28,711	23,865
Western						
Alaska	14	12	4	*	18	12
Arizona	177	179	315	231	492	409
California	3,011	2,595	6,537	5,033	9,548	7,637
Colorado	101	80	760	598	861	678
Idaho	20	15	42	43	62	59
Montana	31	31	148	87	179	118
Nevada	19	16	38	32	57	48
New Mexico	52	39	145	94	197	133
Oregon	311	273	432	317	743	590
Utah	73	46	286	194	359	240
Washington	330	245	772	548	1,102	793
Wyoming	10	14	82	61	92	75
Sub-total	4,149	3,545	9,561	7,238	13,710	10,792
Unspecified	—	—	5,307	2,244	5,307	2,244
Grand total	62,101	53,880	36,254	26,182	98,496	80,765

¹ Includes deliveries by mainland cane sugar mills. ² Reported as produced or imported and delivered except liquid sugar which is on a sugar solids content basis.

*Less than 500 hundredweight.

Table 12—World and U.S. raw sugar prices: Annual, 1965-75, and monthly 1975-76

	World sugar price stowed Caribbean ¹	Transportation, Insurance and duty to New York ²	World price New York basis	U.S. sugar price (New York spot)	Difference ³ between U.S. and world prices New York basis
	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>
1965	2.12	.95	3.07	6.75	3.68
1966	1.86	.96	2.82	6.99	4.17
1967	1.99	.96	2.95	7.28	4.33
1968	1.98	.98	2.96	7.52	4.56
1969	3.37	1.00	4.37	7.75	3.38
1970	3.75	1.13	4.88	8.07	3.19
1971	4.52	1.13	5.65	8.52	2.87
1972	7.43	1.11	8.54	9.09	.55
1973	9.61	1.38	10.99	10.29	-.70
1974	29.99	1.63	31.62	29.50	-2.12
1975	20.49	1.43	21.92	22.47	.55
1975:					
January	38.32	1.47	39.79	40.15	.36
February	33.72	1.50	35.22	36.07	.85
March	26.50	1.50	28.00	28.52	.52
April	24.06	1.50	25.56	26.07	.51
May	17.38	1.43	18.81	19.27	.46
June	13.83	1.42	15.25	15.96	.71
July	17.06	1.42	18.48	19.89	1.41
August	18.73	1.37	20.10	21.11	1.01
September	15.45	1.39	16.84	17.36	.52
October	14.09	1.40	15.49	15.45	-.04
November	13.40	1.40	14.80	15.03	.23
December	13.29	1.40	14.69	14.80	.11
1976:					
January	14.04	1.38	15.42	15.42	—
February	13.52	1.38	14.90	15.04	.14
March	14.92	1.45	16.37	16.27	-.10
April	14.06	1.45	15.51	15.58	.07
May	14.58	1.45	16.03	15.97	-.06
June	12.99	1.43	14.42	14.40	-.02
July	13.21	1.43	14.64	14.59	-.05
August					
September					
October					
November					
December					

¹Sugar stowed at a greater Caribbean ports including Brazil. ²Includes duty of .625 cent per pound. ³Positive values indicate U.S. price is higher than World price.

Table 13—U.S. cane and beet sugar prices: Various marketing territories, annual 1970-75 and monthly 1975-76

Year and Month	Retail U.S.	Refined cane sugar ¹ (Wholesale)					Refined beet sugar ¹ (Wholesale)			
		Northeast	Southeast	Gulf	Chicago-West	Pacific Coast	Eastern	Chicago-West	Pacific Coast	North-West
	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>	<i>Cents per pound</i>
1970	12.97	11.97	11.41	11.04	11.08	10.79	11.08	11.08	10.80	10.78
1971	13.61	12.48	12.07	11.57	11.59	11.37	11.59	11.59	11.37	11.32
1972	13.91	13.09	12.74	12.14	11.82	11.65	11.81	11.82	11.65	11.68
1973	15.10	14.07	13.78	13.14	12.48	12.38	12.36	12.38	12.38	12.47
1974	32.34	34.35	34.34	34.16	34.27	32.12	32.19	32.07	31.90	30.64
1975	37.16	31.42	31.03	31.44	31.58	27.97	27.48	27.61	27.87	27.82
1975:										
January ...	58.92	52.95	52.95	52.95	52.95	46.35	46.69	46.69	46.35	47.26
February ..	53.60	48.96	48.96	48.96	48.96	41.68	41.99	41.99	41.68	41.99
March	49.52	40.50	40.50	40.50	40.50	34.30	33.88	33.88	34.30	33.88
April	41.80	37.01	36.70	37.01	37.01	31.80	30.80	30.80	31.80	30.88
May	36.86	32.23	29.40	32.23	32.23	26.73	25.33	25.33	26.73	25.73
June	31.44	25.57	24.37	25.57	25.57	21.64	21.14	21.14	21.64	21.64
July	26.88	26.89	26.46	27.18	26.89	23.28	22.17	22.17	22.02	22.02
August	30.90	27.05	27.31	27.10	28.19	25.95	26.09	26.18	25.95	26.28
September .	32.08	23.30	23.41	23.28	26.38	23.47	23.73	25.35	23.47	23.97
October ...	30.32	21.15	21.14	21.15	21.80	20.77	20.50	20.44	20.77	21.31
November .	27.24	20.84	20.68	20.79	19.75	20.13	19.76	18.98	20.13	19.16
December ..	26.34	20.53	20.47	20.53	18.71	19.55	18.42	18.42	19.55	19.17
1976:										
January ...	25.88	21.31	21.33	21.31	18.30	19.45	18.30	18.30	19.45	19.05
February ..	25.38	20.86	20.61	20.86	18.30	18.95	18.30	18.30	18.95	19.05
March	25.04	22.20	21.87	22.20	18.30	18.95	18.65	18.30	18.95	19.05
April	25.06	21.41	21.01	21.41	18.30	18.95	18.46	18.30	18.95	19.05
May	24.80	21.87	21.55	21.87	18.70	19.37	18.68	18.68	19.37	19.40
June	24.90	20.22	19.82	20.22	18.51	18.86	18.55	18.47	18.71	18.80
July	24.48 ¹	20.46	20.19	20.46	18.72	19.56	18.48	18.76	19.11	18.83
August										
September .										
October ...										
November .										
December ..										

¹ These are basis prices in 100-pound paper bags, not delivered prices. To obtain delivered prices, add "Freight Prepays" and deduct discounts and allowances.

Table 14—Wholesale price quotations for sugar, corn sirup and dextrose
(Source of dextrose and corn sirup prices—Journal of Commerce)

Period Wholesale	Refined Sugar wholesale Northeast ¹	Corn sirup New York ³		Corn sirup relative to refined sugar		Dextrose New York ⁴		Dextrose relative to refined sugar	
		Quoted	Dry Basis ²	Quoted	Dry Basis	Quoted	Dry Basis ²	Quoted	Dry Basis
		<i>Cents per pound</i>		<i>Percent</i>		<i>Cents per pound</i>		<i>Percent</i>	
Average 1970-73	12.90	6.33	7.89	40	61	9.60	10.43	74	81
1974 average*	34.35	10.61	13.21	31	38	11.26	12.24	46	50
1975 average*	31.42	14.48	18.03	46	57	19.35	21.03	74	81
1975									
August	27.05	14.49	18.04	54	67	18.85	20.49	70	76
September	23.30	15.39	19.17	66	82	18.20	19.78	78	85
October	21.15	15.42	19.20	73	91	17.19	18.68	81	88
November	20.84	14.54	18.11	70	87	16.55	17.99	79	86
December	20.53	13.66	17.01	67	83	15.61	16.97	76	83
1976									
January	21.31	13.11	16.33	62	77	15.37	16.71	72	78
February	20.86	12.19	15.18	58	73	15.55	16.90	75	81
March	22.20	12.19	15.18	55	68	15.55	16.90	70	76
April	21.41	12.19	15.18	57	71	15.55	16.90	73	79
May	21.87	12.19	15.18	56	69	15.55	16.90	71	77
June	20.22	15.05	18.74	74	93	15.72	17.09	78	85
July	20.46	11.83	14.73	58	72	15.75	17.11	77	84
Last 12-month average ..	21.77	13.52	16.84	62	77	16.29	17.71	75	81

¹ Gross basis price in 100-pound bags subject to a 2 percent cash discount. ² Assumes price is for 80.3 percent solids for corn sirup and 92 percent solids for dextrose. Thus dry basis price is quoted price divided by 0.803 for corn sirup and divided by 0.92 for dextrose. ³ For regular conversion sirup (38-49 D.E.) in tank

cars, N.Y. quoted 43 degree baume unmixed. ⁴Hydrate: commercial 600-bag carload F.O.B. New York City.

*Annual data incomplete for dextrose.

Table 15—Weekly spot prices*and trading volume - 1976. Source: (New York Coffee and Sugar Exchange)

Week	Trading volume		Average spot price	
	World sugar contract no. 11	U.S. sugar contract no. 12	World sugar contract no. 11	U.S. sugar contract no. 12
April:				
1-2	5,895	74	14.15	15.55
5-9	13,757	276	14.14	15.60
12-15	11,297	25	14.03	15.54
19-23	18,267	40	14.06	15.60
26-30	22,277	121	13.99	15.58
Total April	71,493	536		
May:				
3-7	20,419	30	14.75	16.27
10-14	26,214	12	15.11	16.45
17-21	16,810	33	14.33	15.67
24-28	18,810	20	14.11	15.48
Total May	82,253	95		
June:				
1-4	26,338	180	12.91	14.29
7-11	24,979	220	12.77	14.17
14-18	24,970	0	13.15	14.56
21-25	19,837	324	12.90	14.33
28-30	16,507	43	13.32	14.77
Total June	112,631	767		
July:				
1-2	21,182	53	14.08	15.55
6-9	32,050	42	14.44	15.94
12-16	29,769	130	13.50	14.88
19-23	22,142	670	12.72	14.05
26-30	22,848	225	12.09	13.36
Total July	127,991	1,120		

*U.S. sugar - No. 12 bulk contract of the New York Coffee and Sugar Exchange, duty paid and delivered to New York. World

Sugar - No. 11 bulk contract of the New York Coffee and Sugar Exchange - F.O.B. and stowed at greater Caribbean Ports.

THE FLORIDA SUGAR INDUSTRY: ITS PAST, PRESENT AND FUTURE PROSPECTS

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ABSTRACT: Sugarcane production has had a long history in Florida, but the present Florida cane sugar industry had its beginning in the 1920's. Today Florida is a major supplier of domestic sugar. However, due to subsidence of its organic soils and uncertainty about the profitability of moving the industry to sandy soils, the direction the industry will take in the future is not clear.

KEYWORDS: Florida, sugarcane, Florida sugar industry, cane sugar.

Past

The Modern Industry's Beginning

Florida's modern sugar industry had its beginning in 1920 when Florida Sugar and Food Products Company initiated sugarcane production on muck soils near Canal Point on the southeastern shore of Lake Okeechobee in the Everglades (figure 1). A sugar factory which could mill 400 tons of cane daily began processing several hundred acres of cane there in 1923. Due to inadequate water control and deficiencies of copper and other trace elements in the soil, this operation proved unprofitable.

In 1925 the Southern Sugar Company acquired the Florida Sugar and Food Products Company's land plus land on the southern and eastern shore of Lake Okeechobee and erected a used sugar factory at Clewiston. The U.S. Sugar Corporation acquired these properties in 1931, expanded, and today has Florida's largest sugar holdings.

In 1933, the Fellsmere Sugar Producers' Association erected a raw sugar factory at Fellsmere, about 80 miles northeast of the Everglades cane area, and in 1935 added facilities for refining sugar. Annual output of this enterprise reached 9,643 tons of refined sugar by the 1952-53 season. Nine grower members had 6,589 acres under cultivation for that season's crop.

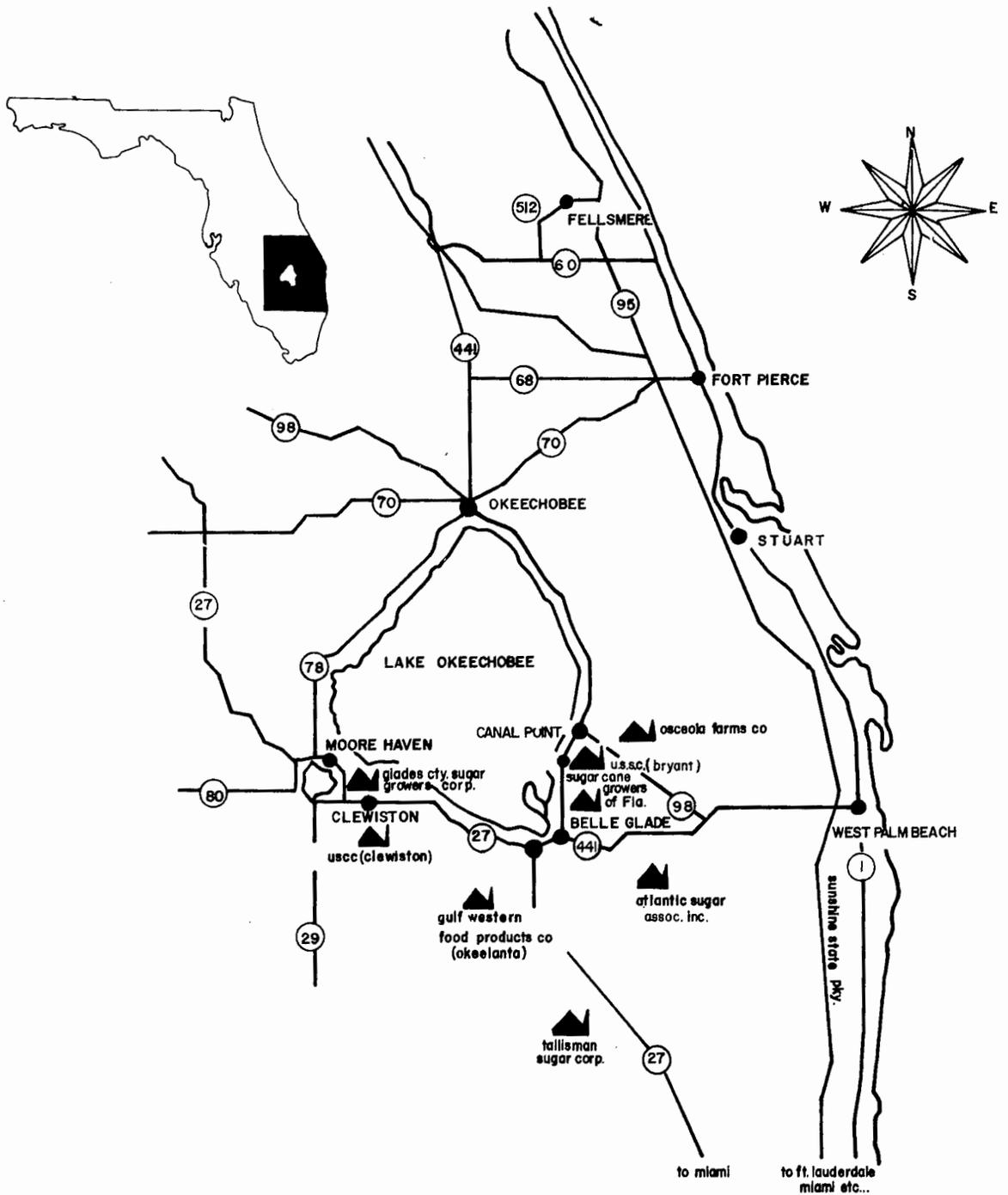
Prior to 1960, there was one other major sugar venture in Florida. It was the Okeelanta Sugar Company whose factory had a crushing capacity of 3,000 tons per day. The factory was located about eight miles south of Lake Okeechobee. Thus, by 1960, three raw sugar factories were operating in the State, producing up to 175,000 tons of raw sugar annually from about 50,000 acres of sugarcane.

Recent Expansion

When the U.S. stopped importing Cuban sugar and lifted acreage restrictions on domestic cane in 1960. The Florida industry really began to flourish. Between 1960 and 1964, the State's sugar factories grew from three to 11 (all concentrated around the southern end of Lake Okeechobee) acreage jumped from 51,000 acres to 223,000 acres, and sugar production correspondingly shot up from 158,000 to 572,000 tons.

In 1965, acreage restrictions were again imposed by the Government to obtain a balance between supply and consumption, and growth of the Florida sugar industry was temporarily halted. Three factories were subsequently closed and the sugarcane production diverted to the remaining factories. During 1965-74, Florida's sugarcane acreage was limited by the size of its acreage allotments. During the 1974/1975 season, eight mills

Figure 1. Location of Florida's Raw Sugar Factories



USDA

NEG. ERS 2554 - 76(8)

Figure 1

processed 8.05 million tons of sugarcane, producing 781,000 tons of raw sugar and 50.3 million gallons of molasses (table 1).

When Congress permitted specific sugar legislation to expire at the end of the 1974 sugar crop, the Florida industry quickly expanded acreage in response to very high sugar prices during 1974 and early 1975. The industry increased its acreage from 273,300 in 1974/75 to 298,000 in 1975/76. Raw sugar production for the 1975/76 season was 1,061,000 tons. Growth of the Florida sugar industry to its present size is further illustrated by the data on acreage and production of sugarcane, raw sugar, and molasses, (table 2).

Florida is second only to Hawaii in U.S. sugarcane production. Florida accounts for a significant share of domestic sugar production and is an increasingly important supplier of domestically consumed sugar (table 3). During 1960 only 2 percent of U.S. sugar consumption and 3 percent of U.S. production was produced in Florida. But by 1975, Florida production represented 16 percent of the total U.S. production and 11 percent of domestic consumption.

Present

Industry Size

Florida's 1974 sugarcane crop was grown by 135 farms ranging in size from one of less than 10 acres to the largest which had over 60,000 acres. The average was 2,200 acres. All the sugarcane harvested for sugar in Florida is processed by eight

factories. Most production is vertically integrated from production of the sugarcane through processing into raw sugar. This includes grower-owned cooperatives, which produce and process 37 percent of the Florida crop. Only about a tenth of the 1974 crop was produced by independent growers.

Florida's eight raw sugar factories tend to be newer and larger than factories in Louisiana and Hawaii. Six of the present factories were built during the 1961-63 expansion. Three mills processed over 1 million tons of cane each during the 1974-75 season (table 1).

Although some of Florida's raw sugar production is refined in the State, most is shipped to refineries in other areas. Of that shipped out-of-State for refining, most goes to Savannah, Ga. The remainder is transported to refineries in New Orleans, La.

Area Characteristics

Two geographic features characterize and contribute to sugarcane production in southern Florida. The first is the highly fertile organic soils at the southern end of Lake Okeechobee where most of the cane is grown. Only about 10 percent of the 300,000 acres grown in the State are on sandy soils located at the periphery of the organic soils. The second feature is the climate which is highly favorable to sugarcane production. A southern latitude along with the moderating effects of Lake Okeechobee on cold winter weather help minimize the danger of crop losses due to freezing. During some seasons sugarcane can grow year round.

Table 1—Florida raw sugar factories' production data, 1974 crop¹

Name of mill	Gross tons cane ground	Tons 96° raw sugar	Gallons of molasses
Atlantic Sugar Association	718,731	63,362	4,455,783
Glades County Sugar Growers Coop. Association, Inc. (Moore Haven)	662,033	58,054	5,458,407
Osceloa Farms Company (Vermillion Sugar Factory)	972,059	90,579	6,009,343
Gulf & Western Food Products Co. (Okeelanta)	933,107	86,885	4,716,286
Sugarcane Growers Coop. of Fla. (Glades Sugar House-Belle Glade)	1,651,261	165,246	10,130,226
Talism Sugar Corporation	650,047	46,558	4,753,360
U.S. Sugar Corporation (Bryant and Clewiston) ...	2,462,852	270,399	14,824,041
TOTAL, 1974 crop	8,050,090	781,083	50,347,446
TOTAL, 1975 crop ²	10,807,496	1,042,142	75,943,870

¹ Production by mills for the 1975 crop not released at time of this writing. ² Estimates for 1975.

Source: SUGAR JOURNAL; 1975, Florida Sugar Cane League, Inc.

Table 2—Acreage, yield, and production of sugarcane and sugar in Florida, 1934, 1939, 1944, 1949, 1954, 1959-1975

Year	Area harvested		Yield per acre	Sugarcane production for sugar (net)	Sugar produced (raw value)			Molasses produced	
	Sugar	Total ¹			Total	Per acre harvested	Per ton of cane	Total	Per ton of cane
	1,000 acres	1,000 acres	Tons	1,000 tons	1,000 tons	Tons	Pounds	1,000 gallons	Gallons
1934	13.8	15.6	27.8	383	28	2.03	148	2,921	7.6
1939	20.1	21.0	35.5	714	70	3.48	197	4,207	5.9
1944	27.1	28.3	28.8	780	69	2.55	176	5,545	7.1
1949	36.6	37.8	30.8	1,126	105	2.87	186	6,877	6.1
1954	38.6	39.3	32.6	1,258	132	3.42	210	8,348	6.6
1959	46.4	47.1	38.2	1,771	174	3.76	196	10,907	6.2
1960	48.9	50.7	31.8	1,554	158	3.23	203	9,015	5.8
1961	56.1	60.0	36.3	2,036	206	3.67	202	12,768	6.6
1962	114.3	116.8	35.4	4,050	379	3.32	187	26,819	6.6
1963	139.9	148.2	31.8	4,446	423	3.02	190	29,397	6.6
1964	219.8	222.9	29.3	6,439	572	2.60	178	47,237	7.3
1965	185.4	190.8	29.7	5,505	552	2.98	201	38,367	7.0
1966	190.7	197.2	31.8	6,057	647	3.39	214	39,961	6.6
1967	190.6	196.3	34.3	6,542	714	3.75	218	42,546	6.5
1968	182.1	187.1	29.5	5,368	543	2.98	202	36,501	6.8
1969	153.5	160.1	33.8	5,197	532	3.47	205	34,754	6.7
1970	170.0	178.5	33.4	5,671	649	3.82	229	37,722	6.6
1971	189.9	199.6	31.7	6,022	634	3.34	211	42,216	7.0
1972	243.8	249.7	38.1	9,288	958	3.93	206	68,427	7.4
1973	257.6	265.5	31.4	8,089	824	3.17	204	62,498	7.7
1974	258.4	273.3	27.8	7,184	803	3.07	224	53,479	6.6
1975	286.7	298.0	37.5	10,264	1,061	3.70	207	75,944	7.4

¹ Difference between area harvested for sugar and total area was that harvested for seed.

Source: Crop production, SRS, USDA.

Table 3—Florida production as a percent of domestic consumption of sugar, 1960-75 (raw value)

Year	Domestic ¹		Florida production	Florida's percent of	
	Consumption	Production		Domestic consumption	Domestic production
	1,000 short tons	1,000 short tons	1,000 short tons	Percent	Percent
1960	9,261	5,045	174	2	3
1961	9,611	5,388	173	2	3
1962	9,752	5,413	258	3	5
1963	9,989	5,889	414	4	7
1964	9,671	6,578	464	5	7
1965	10,020	6,273	560	6	9
1966	10,299	6,170	621	6	10
1867	10,245	6,103	648	6	11
1968	10,927	6,273	680	6	11
1969	10,655	5,981	514	5	9
1970	11,311	6,321	597	5	9
1971	11,288	6,140	614	5	10
1972	11,415	6,309	725	6	11
1973	11,482	6,313	976	8	15
1974	11,237	5,953	742	7	12
1975	9,980	6,828	1,061	11	16

¹ Difference between domestic production and domestic consumption is provided by imported sugar.

Source: Sugar Market News, August 1975, AMS; Sugar Statistics and Related Data Statistical Bulletin No. 244 and No. 293.

Cane is planted during the late summer and fall months for harvest the following fall and winter—the harvest season normally extends from November through April. Usually three to five crops of sugarcane are harvested from one planting in Florida. A new crop (ratoon) grows from the below ground buds or the roots from the previous year's crop. Average yields for Florida are about 33 tons of sugarcane and 6,500 pounds of raw sugar per acre.

Mechanization

Most operations in growing sugarcane are mechanized, the exceptions being planting and harvesting. The Florida sugarcane harvest is in a transition from hand cutting to mechanical harvesting. In the past, most of the sugarcane was hand cut by British West Indian workers who traveled to Florida for the sugarcane harvest. Research, development, and experimentation with mechanical harvesting in Florida have been conducted sporadically since 1930. During the 1970/71 season, several mills experimented with mechanical harvesting on a commercial scale with 2 percent of the crop cut by machine. In 1972 one mill harvested all of its cane mechanically. The use of harvesters has increased such that over 30 percent of the 1975/76 crop was mechanically harvested (table 4).

Table 4—Distribution of sugarcane crop between hand cut and mechanically harvested in Florida, 1970 through 1975 crops

Season	Hand cut	Mechanically harvested
	<i>Percent of total crop</i>	
1970-71	98.0	2.0
1971-72	97.4	2.6
1972-73	84.8	15.2
1973-74	81.5	18.5
1974-75	76.0	24.0
1975-76	68.7	31.3

Production Costs

The estimated average total cost for growing and processing raw sugar in Florida during 1975 was \$10.51 per cwt. (10). Costs differ within the Florida cane area due to differences in fertilizer requirements, sugarcane yield per acre, and differences in raw sugar yield per ton of cane among soil types. For example, sandy soils have a higher fertilizer requirement than organic soils, while sugarcane yield is usually lower. Partially offsetting this

lower tonnage is a higher sugar yield per ton for cane grown on sandy soil. The estimated average cost for 274,000 tons of raw sugar produced on the area's muck soils was \$10.06 per cwt., while for 702,000 tons produced on peat soils and 77,000 tons produced on sandy soils, estimated costs were \$10.67 and \$10.77 per cwt., respectively.

The Future

Organic soils, on which most of the sugarcane in Florida is grown, oxidize when exposed to the air, resulting in the soil's subsidence or disappearance. Present subsidence rates of soils in the Everglades vary, but average about 1 foot every 10 years, or just over an inch per year. In 1970 an estimated 560,000 acres of cropland in the Lake Okeechobee area (mostly in Hendry and Palm Beach Counties) had organic soil depths greater than 1 foot. Projections for the year 2000 are only 356,000 acres to have soil depths greater than 1 foot and by 2020, only an estimated 80,900 acres will have depth greater than 1 foot (9). One to 2 feet of organic soil is generally considered the minimum depth needed to maintain adequate water control for sugarcane production.

Although some of the recent acreage expansion in Florida has taken place on the sandy soils, most has been on organic soils. Expansion for the next decade also is expected to be on organic soils. About 290,000 acres of additional lands have the potential for sugarcane production. Of this, 140,000 acres are currently undeveloped, 100,000 acres are in pasture and sod production, and 50,000 acres are in vegetables (3).

The amount of land which eventually is planted to sugarcane depends, of course, on long-term price expectations which Florida producers hold for sugar and other crops. Returns from sugar production must be adequate to justify producers risking the long-term investment in clearing and draining land, in planting cane, and in constructing additional milling capacity needed to expand production. While in the near future there may be some expansion of sugarcane acreage on the organic soils around Lake Okeechobee, the long-term trend would seem to be one of decreasing acreage due to soil subsidence.

The unanswered question at this time is to what extent will production expand onto sandy soils. Some sand land cane could be easily hauled to existing mill sites and processed. Other mill sites are long distances from sandy growing areas, and hauling would be expensive. In addition, production costs tend to be higher on the sandy soils than on the highly fertile organic soils.

Water availability also may be a constraint to expansion on sandy land. About 1.5 acre feet of irrigation water per acre are needed in Florida to provide good sugarcane growth between February and May. Fresh water for irrigation has not been a limiting factor so far. However, as population growth in south Florida increases water needs for residential use, irrigation water for additional sugarcane production may become restrictive.

Changes in labor needs for Florida's sugar industry in the future will depend on the extent of mechanical harvesting. Some industry members predict that all hand cutting will be eliminated by 1980 or 1985. Others claim that some hand cutting will be necessary for many years to come. With increased mechanical harvesting, there will be a reduced need for cane cutters but an increased need for mechanics and machinery operators. Changes in skilled worker and technicians in the milling operation will be in proportion to changes in the tonnage of sugarcane processed.

Summary

Although sugarcane has a long history in Florida, it was not until recently that a commercial industry became firmly established. The present industry had its beginning in the 1920's when drainage of wet lands permitted growing of cane on the organic soils around the lower end of Lake Okeechobee. However, growth was most dramatic between 1961 and 1964 when Florida acreage expanded to help fill the supply void caused by termination of trade with Cuba.

Presently, most of the best Florida sugarcane land is devoted to that use and the amount of prime sugarland is declining due to soil oxidation. Growers are hesitant about expanding onto the more abundant acreage of sandy soils on the periphery of the present cane area. Important factors in determining whether sugarcane acreage continues expanding in Florida is its prospective profitability and availability of additional irrigation water.

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RECENT SWEETENER PUBLICATIONS*

*The following is a list of recent publications relevant to the sweetener industry. Listing of these articles does not necessarily constitute an endorsement by the USDA. Copies of these articles are not available from this office but should be obtained from your library or the publisher.

Readers who have articles concerning sweetener economics and wish to have them noted in this publication should submit an abstract and two copies of the article to the Sweetener Group, Economic Research Service, Room 200, 500 12 Street, S.W., Washington, D.C. 20250.

1. Andres, Cal., *NEW NATURAL SUGAR SUBSTITUTE*, Food Processing, 37(4): 100, April 1976.
A new sweetener, Xylitol, has potential for specialty, confectionery, and dietary foods. It is as sweet as sucrose and has identical caloric content. In most food product formulations sucrose may be replaced with an equal amount of Xylitol. It has unusual taste, metabolic, and cariogenic properties.
2. Baker, B. P., *COMPOSITION, PROPERTIES, AND USES OF MOLASSES AND RELATED PRODUCTS*, 80 pp., 1975, (United Molasses Trading Co. Ltd., Bowater House East, 68 Knightsbridge, London, England SW1X 7LP).
Contents include: sugar in molasses; composition of cane molasses and beet molasses; properties of molasses; energy value of molasses; molasses mixing; plus cane molasses in animal feeding.
3. Barrington, John, *ASSESSMENT OF EFFECTS OF CORN SYRUP ON OUR MARKETS*, The Australian Sugar Journal, 67(12):572-573, 620, March 1976.
The author states that of Australia's main export markets only the United States, Japan, and Canada have the capacity and right conditions for the production of substantial quantities of fructose glucose syrups (HFCS). Information is provided on offsetting factors; corn syrup disadvantages; the product and how it is made; markets for HFCS; price and raw material costs. Factors which may limit the future prospects of HFCS as a competitor of sucrose are also discussed.
4. Batstone, D. B., *SUGAR AND THE COMPUTER*, Producer's Review, 65(6):39-42, 1975.
The possible application of computers in the cane sugar industry are discussed; with particular reference to cane reception, sampling, and payment. Factory process control is briefly mentioned.
5. Beverage Industry, *NCI SAYS CYCLAMATE CARCINOGENICITY UNPROVEN*, 60(8):4, April 6, 1976.
The National Cancer Institute delivered its final report to the FDA declaring that present evidence does not establish the carcinogenicity of cyclamate or its principal metabolic in experimental animals. The report, however, does raise "concern" over the statistically significant increase in tumors in cyclamate-treated animals and the presence of tumors in the urinary tracts in some animals demonstrated by several studies.
6. Beverage Industry, *SWEET SORGHUM TESTED AS SUGAR SOURCE*, 60(7):7, 8, April 2, 1976.
The article states that sweet sorghum may be an alternative to existing sucrose sweeteners. In recent tests 2 to 2½ tons of sugar were produced per acre. The influx of sor-

ghum upon the sweetener market will depend on several factors: the speed, efficiency, and economics of new equipment, growth of artificial sweeteners, the balance of American and world demand for sugar, and the concern of stabilizing the price of sugar.

7. Blok, J. and Van Der Poel, P. W., *SUGAR AND NON-SUGARS EXTRACTION*, La Sucrierie Belge, 95(4):131-41, April 1976.

This article discusses the optimization of the parameters: draft and sugar losses. Two methods are compared: a linear programming model and a model perfected by the authors.

8. Bookers Agricultural and Technical Services Ltd., *HAITA: PRELIMINARY SURVEY OF THE SUGAR INDUSTRY*, Ministry of Overseas Development, London, September 1975.

The following items are discussed in the report: cane production; production of centrifugal sugar; byproducts and other uses of cane; research; administration; semi-industrial processing of cane.

9. Canner/Packer. Special Report, *INGREDIENTS FOR CANNERS AND PACKERS-SWEETENERS AND STARCHES FOR PROCESSED FOODS*, pp. 52-54, 56, March 1976.

Sweeteners and starches selected from the full product lines of several companies are listed in a series of tables. Products were selected for their special application to the processed food market; for functionability in heat-processed systems; for freeze-thaw stability; for fast solubility; and for other functions needed by canners and packers.

10. Chatterjee, Anil and Dutt, B. M., *ECONOMY IN SUGAR INDUSTRY BY-PRODUCTS*, Sugar y Azucar, 71(4): 18-19, April 1976.

The authors state that there has been a gradual decrease in the number of people employed in the industry and a relative slow increase in the capital assets per plantation. To balance this the natural incentive should be to develop the byproducts of the industry. The authors further state that the important economic factors in the successful utilization of sugar cane byproducts are: a market, an existing industrial base, availability of local technicians, industry sophistication, and availability of foreign exchange.

11. Chemical and Engineering News, *BRIGHT FUTURE FOR HIGH-FRUCTOSE CORN SYRUP*, p. 13, April 19, 1976.

Industry sources indicate that HFCS could more than double its share of the nutritive sweetener market by 1980. In 1973 its share was 6 percent. HFCS will account for all of the 1976 sweetener market growth and in 1976 shipments will increase 38 percent to 20 million hundredweight. The factors that helped this growth will continue to exert an influence in the future; namely; concentration of young people in the population mix; more time for travel and recreation, more meals eaten away from home, and new sugar-based convenience and packaged foods.

12. Chemical Economics Newsletter, *GLYCERIN—REPORT ABSTRACT*, Chemical Information Services. Stanford Research Institute. Melo Park, California, 94025. March-April 1976.

Twelve percent of the 1974 glycerine production (approximately 43 million pounds) was used in the production of various foods and beverages, 23 percent in drugs and cosmetics, and 15 percent in tobacco. Modest increases in U.S. consumption are anticipated in drugs, cosmetics, and food and beverages in 1976/77.

13. Council on Wage and Price Stability, *INTERIM REPORT ON BAKED GOODS AND CEREALS*, 11 pp. Washington, D.C., January 1976.

This report analyzes price, cost, and profit changes in the cereals and baking products industries over the 1973-75 period and explains why further investigation is warranted in the areas of cereals and breads.

14. Gray, Fred, *WHAT'S THE WORD ON SUBSTITUTES?*, Sugar Beet Grower, pp. 14, 16, 18, March 1976.

Trends in sweetener consumption are reviewed. The interrelationships of sweetener uses are evaluated. Statistical measures of demand for sweeteners are reported. Future prospects of world sugar production/consumption balance are assessed. The author also evaluates the potential impact of high fructose corn syrup on future U.S. sugar consumption.

15. Guha, S. R. D., *RAW MATERIALS FOR PAPER*, Indian Forester, 101(3):192-198. 1975.

The suitability of softwoods, grasses, bamboo, straw, bagasse, and hardwoods for use in paper making in India is discussed.

16. Hawaiian Sugar Planter's Association, *HSPA SUGAR MANUAL 1975*, Washington, D.C., 43 pp.
A handbook of* statistical information relating to the sugar industry of the Hawaiian Islands. Contents: Hawaii's sugar industry; United States sugar industry. United States sugar laws; world trade.
17. Houssian, J. and Pieck, R. *ON THE USE OF ELECTRODIALYSIS IN THE SUGAR INDUSTRY*, LaSuceie Belge, 95(4):143-155. April 1976.
This article explains how electrodialysis may be applied for the de-ashing of sugar solutions, such as juices or syrups.
18. Karalazos, A. and Swan, H. *MOLASSES AND ITS BYPRODUCTS*, Feed Energy Sources for Livestock. Studies in Agricultural and Food Sciences, Butherenorth, London, pp. 19-26, 1976.
The use of molasses and condensed molasses solubles in rations for reinants is reviewed (43 referances).
19. Knowles, W. D., *IS SUGARBEET TOP SILAGE WORTHWHILE?*
, British Sugarbeet Review, 43:91-92, 1975.
The author describes the practices used in the production of beet top silage to feed beef cattle.
20. Kujala, Paul et. al., *ALCOHOL FROM MOLASSES AS A POSSIBLE FUEL*, Sugar y Azucar, 71(3):28-29, 32-35, 37-39, March 1976.
Describes the change that has occurred since 1973 in the production of alcohol from sugarcane molasses and the reasons for the change.
21. Li, K. Y., *AN INTRODUCTION TO THE MALAYSIAN SUGAR INDUSTRY*, Taiwan Sugar, 22:58-65, 1975.
Details are given of four major cane projects in Malaysia, of which three involve an area of more than 80,000 acres. Agricultural practices are described and information is given on cane research activities.
22. Major, J. N., Jr., *HIGH FRUCTOSE CORN SYRUP IN PRESERVES*, 1976 Corn Annual, Corn Refiners Association, Inc., Washington, D.C., pp. 24-26.
The author discusses the use of high fructose syrup by the preserve industry now that the industry is allowed its choice of nutritive sweeteners with no stipulation as to the amount of any given type.
23. Materials Handling News, *STEPPING UP A PLANT'S CAPACITY BY 50 PERCENT*, No. 207, (February):44-46, 1975.
The beet unloading and piling system recently installed at the York factory of the British Sugar Corporation is briefly described with diagrams. The capacity of the new system is 400 tons per hour (T/H) compared with 260 T/H for the old one.
24. Maxwell, John C., *MAXWELL BEVERAGE SEMINAR*, Beverage Industry, 60(10):8, 19, 25, 28-29, 36, May 21, 1976.
The article discusses the near-term scenario based on the possibility of low sugar prices. The author points out that while announcements for increased expansions have been made, grains in world production might be eliminated if prices fall below 11 cents per pound for raw sugar. Incentive for production would be blunted; high cost producers would go out of business; the refining industry would not achieve the necessary capital for planned expansion; and 6.7 million tons of sugar would be lost through cancellation of proposed expansion over the next 5 years.
25. McKay, C. M., *THE GILMORE LOUISIANA—FLORIDA—TEXAS—HAWAII—PUERTO RICO SUGAR MANUAL 1975*, 222 pp., (Sugar Publications, Gilmore Sugar Manual Division, 503 Broadway, Fargo, North Dakota 58102).
The publication is a guide to sugar factories and their chief personnel, with details of equipment and performance data for 1973 and 1974 as well as general information about each factory.
26. Moraghan, J., *THE SUGARBEET IN THE SOVIET UNION*, Sugar y Azucar, 70(8):34-35, August 1975.
The beet sugar industry of the USSR is outlined.
27. Munir, Mohammad, *MOLASSES SUGAR RECOVERY BY LIQUID DISTRIBUTION CHROMATOGRAPHY*
, The International Sugar Journal, 78(928):100-106, April 1976.
A new process is described for the separation of beet or cane molasses into sugar

and non-sugar fractions. Results obtained with a pilot plant are presented.

28. National Academy of Sciences, *SWEETENER ISSUES AND UNCERTAINTIES*, Academy Forum, Fourth of a series, Washington, D.C., 260 pp., 1975.

Main points of discussion during the forum centered on perspectives on sugar, saccharin, and other sweeteners. Multiple aspects of the taste for sweeteners and its consequences are discussed.

(Note: Copies are available from: Printing and Publishing Office, National Academy of Sciences, 2101 Constitution Avenue N.W., Washington, D.C. 20418)

29. Ocampo, G., *BAGASSE IN THE PRODUCTION OF CELLULOSE AND ITS DERIVATIVES*, ATAC, 34 (2):55-65, 1975.

The merits of bagasse as a source of cellulose are discussed and an account is given of pilot plant and laboratory work done in Cuba on cellulose produced from bagasse, bagasse characteristics, and bagasse derivatives.

30. Pike, Edward, C., *THE SUGAR REVOLUTION*, Finance, 94(5):27-31, May 1976.

The author states that the worldwide shift from long-term surpluses to long-term shortages of sugar has been triggered by large increases in consumption among the less developed countries, and that the United States should become more nearly self-sufficient in sugar in the coming years.

31. Russo, James R., *HIGH FRUCTOSE CORN SYRUP AT 4 MILLION POUNDS/DAY*, Food Engineering, 48(5):37-40, May 1976.

Going on stream in May 1976 is the world's largest high fructose corn syrup plant. This article describes changes that are taking place in the wet corn milling industry.

32. Sturgess, O. W., *FURROW IRRIGATION IS WATER WASTER*, Producer's Rev., 65(6):18, 1975.

While the solid set and trickle irrigation systems are more expensive to install, they reduce labor and water requirements for sugarcane. This article points out that furrow irrigation is an inefficient method, since about half of the water applied is not used by the sugarcane being irrigated.

33. Sugar y Azucar, *SAVANNAH SUGAR REFINERY*, 70(6):34-35, 40, May 1975.

Information is given on the history of this refinery (th largest in the southeastern United States with a daily melt capacity of 2,200 tons), the equipment and processes used and its products.

34. Sugar y Azucar, *AN OVERVIEW OF THE CANADIAN SUGAR REFINING INDUSTRY*, 71(5):31, 34-35, May 1976.

Discusses the historic corporate development of the Canadian sugar industry.

35. Sugar y Azucar, *SUGARCANE GROWERS' COOPERATIVE OF FLORIDA—GLADES SUGAR HOUSE*, 71(6): 62-64, 66, June 1976.

A description of the operations of the largest cane sugar mill in the United States is presented.

36. Sugarbeet, *WHAT PROBLEMS ARE CAUSED BY TRASH IN THE SUGAR FACTORIES*, No. 79 (fall), pp. 13-15, 1975.

Sugar losses caused by trash in beets include losses due to increased respiration in storage, insufficient topping, and delays when flumes are blocked with dirt or slicer knives are damaged by rocks.

37. Thielen, P. J., *CANE GRINDING AND THE CHANGING TIMES IN THE EVERGLADES*, Proc. Amer. Soc. Sugarcane Tech., pp. 19-21, 1972.

A brief history is presented of the Everglades cane sugar industry in Florida.

38. U. S. Dept. of Agriculture, *Foreign Agriculture Circular*, Foreign Agricultural Service, FS1-76, April 1976, Washington, D.C. 20250.

Lists world centrifugal sugar production and stocks at the beginning of the grinding season in selected countries 1971/72-1975/76. (Copies may be obtained from: Foreign Agricultural Service, Room 5918, South Bldg., USDA, Washington, D.C. 20250.)

39. U.S. Dept. of Agriculture, *MAPLE SYRUP*, Crop Reporting Board, Cr. Pr. 2-5 (5-76), Statistical Reporting Service, Washington, D.C. 20250. May 20, 1976.

Maple sirup production—U.S. and States 1974-76; farm use, sales and value 1975; production and value 1976. (Copies may be obtained from: SRS Publications—USDA, Room 0005, South Bldg., Washington, D.C. 20250, (202) 447-7687.)

40. U.S. Dept. of Agriculture, *ACREAGE*, Crop Reporting Board, Statistical Reporting Ser-

vice Cr. Pr. 2-2 (6-76), June 30, 1976, Washington, D.C. 20250.

Included are acreage planted by June 1 and acreages intended to be planted after June 1 for various crops including sugarbeet and sugarcane. (Copies may be obtained from: SRS Publication—USDA, Room 0005, South Bldg., Washington, D.C. 20250, (202) 447-7687.)

41. U.S. Department of Commerce, *CONFECTIONERY MANUFACTURERS' SALES AND DISTRIBUTION 1975*, Domestic and International Business Administration, 26 pp., June 1976, Washington, D.C.

Contents: Volume and value of shipments; producing and consuming areas; ingredients used; information on confectionery imports and exports; sales and distribution information. Discussed are significant developments and the outlook for the confectionery industry. (Copies may be obtained from: National Confectioner Association, 36 South Walbach Avenue, Chicago, Illinois 60603, (312) 372-1492.)

42. U.S. International Trade Commission, *HONEY*, USITC Publication 781, June 1976, Washington, D.C.

Report to the President on Investigation No. TA-201-14 under Section 201 of the Trade Act of 1974. Contents include: types of U.S. producers; channels of distribution; U.S. Tariff treatment; Government programs and regulations affecting the U.S. honey industry;

leading exporters. (Copies may be obtained from: Office of the Secretary, U.S. International Trade Commission, 701 E. Street, N.W., Washington, D.C. 20436.)

43. Viton, A., *SUGAR PROSPECTS IN CENTRAL AMERICA*, *Sugar y Azucar*, 70(8):31-33, July 1975.

A brief survey of the sugar industries in Costa Rica, Guatemala, and El Salvador and future prospects.

44. Viton, Albert, *CHEAP SUGAR: A WORLD PROBLEM*, *Sugar y Azucar*, (71)(6):71, 74-75, 78-79, June 1976.

The author suggests that recent price increases have been concentrated largely in the importing countries and the effect this has had on the world sugar economy. In low income importing countries which could not afford to subsidize price, the effect of the rise in the free market price was painful and consumption was often reduced by 30-50 percent or more. The continuation of lower prices in many low-income self-sufficient or exporting countries helped to keep up consumption in 1974 and increased sugar use in 1975, by about 1 million tons.

45. Williams, Jack F. *THE TAIWAN SUGAR CORPORATION'S CHIAYI TIDAL LANDS PROJECT*, *Sugar y Azucar*, 71(4): 22-23, 25-27, April 1976.

Illustrates problems of land reclamation.

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