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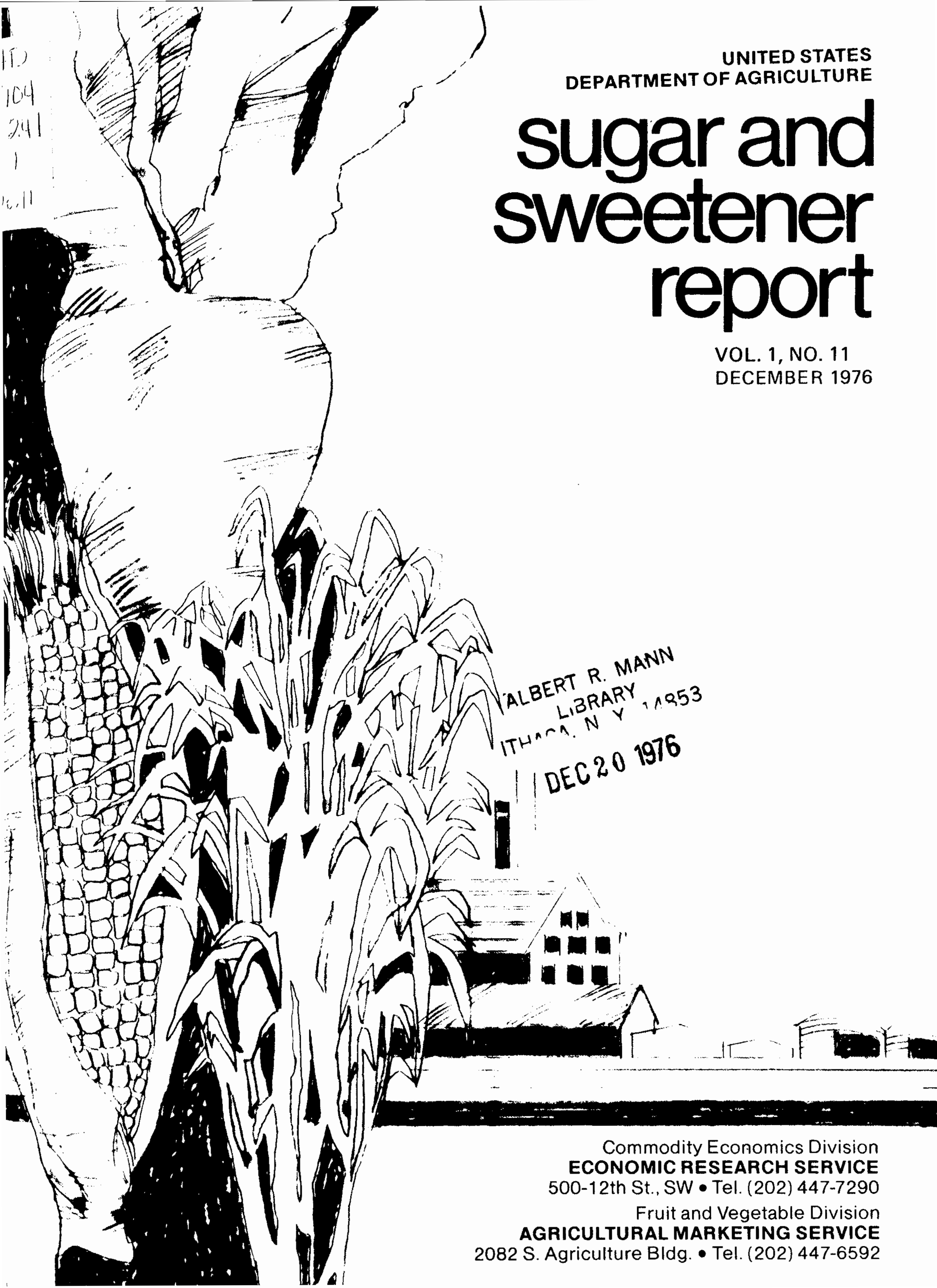

Commodity Economics Division
ECONOMIC RESEARCH SERVICE
500-12th St., SW • Tel. (202) 447-7290
Fruit and Vegetable Division
AGRICULTURAL MARKETING SERVICE
2082 S. Agriculture Bldg. • Tel. (202) 447-6592

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Principal contributors:

Fred Gray and Thomas Little, Economic Research Service
Leslie Hurt and Gordon Patty, Foreign Agricultural Service

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Principal contributors: James R. Thorpe and Douglas M. Edwards

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Compiled by: Larry C. Larkin

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Prepared by

Commodity Economics Division
Economic Research Service

Fruit and Vegetable Division
Agricultural Marketing Service

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SITUATION AND OUTLOOK

Principal Contributors:
Fred Gray and Thomas W. Little

Commodity Economic Division | Economic Research Service

SUMMARY

Sweetener Supplies Ample; Prices Remain Low

World stock levels, producers' 1977 crop intentions, and the possibilities of an international sugar agreement or a change in domestic sugar policy add to the uncertainty of future raw *sugar* prices. Prospective large world supplies are likely to maintain downward pressure on sugar prices in the short run, unless there are some cutbacks in next year's world sugar crop. Producers will be watching for new U.S. executive or legislative action or a new international agreement that would enhance prices.

An expected record world sugar crop should exceed world consumption in 1976/77, resulting in increased stocks. Estimated production of nearly 96 million short tons (87 million metric) would be up almost 6 million short tons (raw value) from last year. With world consumption expected to increase around 2 to 2½ million short tons, ending 1976/77 world stocks will likely rise substantially.

U.S. sugarbeet acreage in 1976 is down slightly. Production is expected to be down about 2 percent from a year earlier. Assuming normal sugar recovery from these beets, a beet sugar outturn of 3.8 million short tons (raw value) is indicated, down slightly from 1975/76.

The 780,000 acres of U.S. cane for harvest is up slightly, but this year's cane crop will about match last year's 29 million short tons, with cane production down in Hawaii. The crop may produce about 2.85 million short tons of raw sugar, down about 100,000 tons from last year.

U.S. sugar imports for calendar 1976 may run 10 percent to 20 percent above last year's small 3.9-million-ton levels.

U.S. sugar deliveries in 1976 are estimated at around 10.8 million short tons (raw value). Beet sugar deliveries may total near 3.8 million tons. U.S. Sugar stock levels on November 1 were up about 10 percent from the 1.4 million tons of last year.

After holding near $15 per cwt. (New York spot) from October 1975 to July 1976, U.S. monthly average raw sugar prices declined to lower levels. However, prices held relatively steady in October and November near $10.50 per cwt. Declines in raw sugar prices were followed by declines in wholesale and retail prices of refined sugar. But prices of sugar-containing products have generally remained fairly stable.

Presidential action on September 21 tripled the import duty on raw sugar (96°), increasing it from $.625 per cwt. to $1.875 per cwt This action pushed the U.S. raw price above $10 per cwt. and increased the differential between the U.S. and world raw price from $1.40 to $2.70 ~~per~~ cwt.

Total *corn sweetener* deliveries are likely to total 3.2 mllion short tons (dry basis) this year, up from under 3 million last year. Most of the increase was in high-fructose corn syrup (HFCS) with output up 60 percent from last year to 800,000 tons. Per capita consumption of all corn sweeteners is expected to total near 30 pounds (dry basis) this year, up 10 percent.

U.S. production of sugar is likely to decline next year if sugarbeet growers reduce plantings as expected in response to current low sugar prices. Domestic sugar deliveries will likely match this year's prospective level of 10.8 million tons (raw value) while corn sweetener deliveries are expected to increase.

U.S. imports are expected to rise next year, but the actual level will depend on U.S. sugar and HFCS production, use of other corn sweeteners nd gains made by non-caloric sweeteners. Corn sweetener shipments for food use next year are expected to increase 5 to 10 percent, with an aggressive corn sweetener marketing program, particularly for HFCS.

Brazil, traditionally one of our principle suppliers, has not exported sugar to the United States in 1976 partly because of a severe frost in 1975. But based on present crop expectations Brazil could ship 500,000 to a million tons of sugar to the United States next year. Brazilian sugar may qualify for U.S. duty-free import treatment beginning March 1, 1977, under the Generalized System of Preferences (GSP).

The outlook for sugar prices in the coming year suggests relative stability in the short run, despite major uncertainties. Some strengthening could occur later if 1977/78 crop prospects do not suggest a further buildup in stocks. However, sharp

increases in sugar prices are not anticipated in the immediate future. As the season unfolds, world crop prospects and changes in global demand for sugar will increasingly influence U.S. and world sugar price levels.

The futures market for sugar shows both U.S. and world prices trending upward in coming months. For March 1977 to March 1978, the November 30 futures contracts show slight increases in world prices largely assciated with usual storage charges.

More interestingly, the futures market shows a widening of the differential between world and U.S. prices in the coming months. The widening suggests that perhaps the futures market is anticipating some future U.S. Government action—executive or legislative—that would limit imports or raise U.S. prices relative to world prices.

SUGAR

WORLD SITUATION

Record Production Expected for 1976/77

A world record sugar crop of 96 (87)[1] million tons (raw value) is now forecast for 1976/77 (tables S-1 and S-2 and figure S-1).[2] If achieved, this will represent a 6-percent increase from last year's outturn of 90 (82) million tons. Sugarcane-producing countries in the Southern Hemisphere are expected to provide the major portion of the increase even though the USSR, he world's leading beet sugar producer, will have a substantially larger crop than a year earlier.

[1]Values shown in parentheses are metric values. Unless otherwise indicated, production data not in parentheses are short tons (2,000 pounds per ton). To convert short tons to metric tons, multiply short tons by the factor .9072.

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

Table S-1—Sugar: World production, consumption, and stocks, 1970/71 to 1976/77[1]

Year beginning May 1	Production				Consumption		Ending stocks		Ending stocks as a percent of consumption
	Cane	Beet	Total	Change from previous year	Total	Change from previous year	Total	Change from previous year	
	1,000,000 short tons, raw value	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*1,000,000 short tons, raw value*	*Percent*
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	54.2	32.0	86.2	-2.5	88.2	1.0	17.7	-2.0	20.07
1975	54.7	35.6	90.3	3.4	89.1	.9	18.9	1.2	21.21
1976[3]	58.4	37.5	95.9	5.6	91.3	2.2	23.5	4.6	25.74
	1,000,000 metric tons, raw value	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*1,000,000 metric tons, raw value*	*Percent*
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	49.2	29.0	78.2	-2.2	80.0	.9	16.0	-1.8	20.00
1975	49.6	32.3	81.9	3.7	80.8	.8	17.1	1.1	21.16
1976[3]	53.0	34.0	87.0	5.1	82.8	2.0	21.3	4.2	25.72

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

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

Drought was severe this past summer in Europe, especially in parts of France, as well as in the United Kingdom. Eastern European countries with smaller sugarbeet crops than expected earlier, were Czechoslovakia, East Germany, Poland, and Hungary. However, a very noticeable recuperation occurred in most of these countries when rains came in late July and August. In contrast, the USSR experienced a growth-retarding abundance of rain coupled with cool weather early in the growing season. However, weather improved, and a much larger Soviet crop than harvested a year ago now seems assured. In the Southern Hemisphere, Brazil, Argentina, Australia, Mauritius, and South Africa are expected to harvest bumper cane crops.

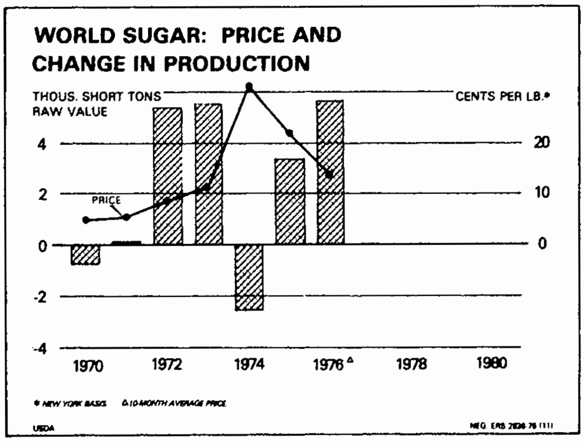

Figure S—1

1976/77 World Consumption May Rise 2.2 Million Tons

orld consumption for 1976/77 is likely to increase about 2 to 2½ million short tons from the 1975/76 level of 89 (81) million tons (raw value) (table S-1). Consumption is still recovering in the major consuming countries of Canada, Japan, and the United States, following the decline precipitated by high sugar prices in 1974 and 1975. Recovery has been particularly slow in Japan, where retail prices have not followed the decline of world prices. Statistics suggest that consumption in Japan is still about 15 percent below its 1973 level.

Reasons For Depressed Prices

The possibilities of a short crop because of drought in Western Europe as well as in some Eastern European countries served to hold raw sugar prices steady into July. However, very helpful rains came about mid-July. As rains improved beet crop prospects in Europe, prices moved downward. Other factors also began to depress the market at about the same time. Among these were: (1) the reentry of Brazil into the world market after restricting exports for several months; (2) restricted purchases by importers who had already covered short-term requirements; (3) prospects for and reports of an increasing number of distress cargo sales; (4) an increase in long term contractual arrangements and (5) an increased use of high fructose corn sirup (HFCS) in both the United States and Europe.

International Developments

Important Sugar Year Coming Up

An International Sugar Agreement Negotiating Conference is expected to convene in Geneva in April 1977. In the meantime, the U.S. International Trade Commission will make a report to the President on the sugar situation and the effect of imports on both the domestic supply-demand balance and the price level. In addition, Congress may begin holding hearings on sugar next year. Any action taken by the U.S. Governmnt could influence future world and domestic prices.

World Marketing of Sugar

During the past year, there have been a number of contractual agreements between U.S. refiners and foreign producers. These agreements generally specify that foreign suppliers ship volume quantities of sugar for an extended period, with prices in most instances tied to the world price at the time of delivery. Thus, there may be some shifts in production and marketing patterns next year. These agreements will have to be conidered when establishing new marketing schemes. Contractual arrangements presently account for about 5 million metric tons of sugar out of a total of about 15 million metric tons of free market sugar shipped.

U.S. SITUATION

Production

1976 U.S. Sugarbeet Crop Estimate Down Slightly

U.S. sugarbeet acreage for harvest is expected to total 1.5 million acres, down about 2 percent from a year ago (tables S-2 and S-3). Despite drought and poor growing conditions in Michigan, Minnesota, North Dakota, and Washington, the most recent estimate of 19.6 tons per acre matches last year's level, because of fractionally higher yields in other States.

With slightly lower acreage, the current sugarbeet crop may total about 29 million tons, down

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 1975/76[1]

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 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	35.0	7,598	10,698	10,990	38.3	292	102.7
Louisiana	331.0	329.0	325.0	21.3	21.0	23.0	7,048	6,909	7,475	26.1	566	108.2
Texas	28.5	35.5	35.9	32.4	35.6	37.0	924	1,264	1,328	4.6	64	105.1
Total mainland	632.8	662.5	674.9	24.6	28.5	29.3	15,570	18,871	19,793	69.0	922	104.9
Hawaii	101.3	111.5	104.6	91.2	86.7	85.0	9,242	9,666	8,891	31.0	-775	92.0
Total U.S. cane	734.1	774.0	779.5	33.8	36.9	36.8	24,812	28,537	28,684	100.0	147	100.5
BEET												
Maine	—	—	9.0	—	—	12.5	—	—	113	.4	113	113.0
Michigan	80.4	91.4	90.0	17.0	19.2	17.5	1,364	1,755	1,575	5.4	-180	89.7
Ohio	32.7	39.2	38.0	15.9	19.8	19.0	519	777	722	2.5	-55	92.9
Great Lakes[3]	113.1	130.6	137.0	16.6	19.4	17.6	1,883	2,532	2,410	8.3	-122	95.2
Minnesota	182.7	196.0	246.0	11.6	14.2	12.0	2.116	2.783	2,952	10.1	16.9	106.1
North Dakota	139.9	130.9	151.0	11.2	13.9	13.5	1,562	1,820	2,039	7.0	219	112.0
Red River Valley	322.6	326.9	397.0	11.4	14.1	12.6	3,678	4,603	4,991	17.1	388	108.4
Colorado	125.7	154.9	121.0	18.0	17.2	19.0	2,261	2,661	2,299	7.9	-362	86.4
Kansas	35.1	43.0	38.0	17.2	15.5	17.0	602	667	646	2.2	-21	96.9
Nebraska	75.5	96.0	83.0	18.3	18.5	19.5	1,382	1,776	1,619	5.6	-157	91.2
Wyoming	53.5	57.7	56.0	18.4	18.4	20.0	983	1,060	1,120	3.8	60	105.7
Montana	43.9	48.5	45.8	18.7	17.1	21.0	820	829	962	3.3	133	116.0
Texas	19.7	33.7	24.5	17.7	13.1	21.0	349	440	515	1.8	75	117.0
New Mexico	.4	.9	1.1	19.8	16.7	18.2	8	15	20	.1	5	133.3
Great Plains	353.8	434.7	369.4	18.1	17.1	19.4	6,405	7,448	7,181	24.7	-267	96.4
Oregon	11.6	17.9	14.5	23.0	23.8	24.5	267	426	355	1.2	-71	83.3
Washington	63.3	82.4	78.0	24.5	26.0	25.0	1,554	2,142	1,950	6.7	-192	91.0
Idaho	90.8	158.3	139.0	20.3	18.6	20.0	1,845	2,942	2,780	9.5	-162	94.5
Utah	17.0	22.5	18.0	17.4	15.7	17.8	296	353	320	1.1	-33	90.7
Northwest	182.7	281.1	249.5	21.7	20.9	21.7	3,962	5,863	5,405	18.5	-458	92.2
Arizona	10.4	17.0	17.0	23.8	21.5	23.0	247	366	391	1.4	23	106.8
California	230.0	326.4	312.0	25.9	27.2	28.0	5,948	8,890	8,736	30.0	-154	98.3
Southwest	240.4	343.4	329.0	25.8	27.0	27.7	6,195	9,256	9,127	31.4	-129	98.6
Total U.S. Beet	1,212.6	1,516.7	1,481.9	18.2	19.6	19.6	22,123	29,702	29,114	100.0	-588	98.0

[1] Crop year. [2] Intentions based on November 1 growing conditions. [3] Includes Maine.

Source: Crop production, SRS, USDA.

about 2 percent (600,000 tons) from last year. This estimate is up 2 percent from September. Sugarbeet production is expected to increase in 8 of the 18 commercial sugarbeet growing States. The largest increases are coming in Minnesota and North Dakota, where acreage has significantly expanded. Maine, which is growing sugarbeets for the first time in 7 years, is also contributing slightly to this year's total. Higher yields are expected to increase production in Arizona, Montana, New Mexico, Texas, and Wyoming. In most of the 10 remaining sugarbeet States, yields are up but not enough to offset reductions in sugarbeet plantings (table S-2).

Based on November 1 growing conditions and assuming a normal sugar recovery, this year's sugarbeet crop is expected to produce about 3.8 million tons of beet sugar (raw value) (table S-3 and figure S-2). This outturn would be about 8 percent (200,000 tons) less than the 4 million tons produced in 1975/76. There will likely be less strain on processing facilities this year—except the Red River Valley—than in 1975/76.

1976 U.S. Cane Crop to Match Last Year's

U.S. sugarcane acreage for harvest will likely total about 780,000 acres this year, up 1 percent from 1975 (table S-2). Acreage for harvest expanded slightly in Florida and Texas, while declining slightly in Hawaii and Louisiana. The projected average U.S. cane yield of 36.8 tons per

Table S-3—U.S. sugarcane, sugarbeets, and sugar, raw value: Acres harvested, recovered sugar, yield per acre, and production, 1974-76

Year	Sugarcane and sugarbeets			Sugar, raw value		
	1974	1975	1976[1]	1974	1975	1976[2]
	ACRES HARVESTED			RECOVERED SUGAR		
	1,000 acres	*1,000 acres*	*1,000 acres*	*Percent*	*Percent*	*Percent*
Cane[3]						
Florida	258.4	287.5	303.5	11.2	10.3	10.4
Louisiana	308.0	308.0	304.0	9.1	9.9	8.5
Texas	27.7	35.0	35.4	8.2	10.0	9.9
Total mainland	594.1	630.5	642.9	10.0	10.2	9.4
Hawaii	95.8	105.1	98.2	11.5	11.7	11.6
Total cane	689.9	735.6	741.1	10.6	10.7	10.1
Total beet	1,212.6	1,516.7	1,481.9	13.2	13.6	13.1
	YIELD PER ACRE					
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*
Cane[3]						
Florida	27.8	35.7	34.8	3.1	3.7	3.6
Louisiana	21.3	21.0	23.1	1.9	2.1	2.0
Texas	32.4	35.7	37.1	2.7	3.6	3.7
Total mainland	24.6	28.5	29.4	2.5	2.9	2.8
Hawaii	94.8	90.2	88.8	10.9	10.5	10.3
Total cane	34.4	37.3	37.3	3.6	4.0	3.8
Total beet	18.2	19.6	19.6	2.4	2.7	2.6
	PRODUCTION					
	1,000 short tons	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*
Cane[3]						
Florida	7,184	10,264	10,556	803	1,061	1,100
Louisiana	6,558	6,468	7,034	594	640	600
Texas	898	1,250	1,314	74	125	130
Total mainland	14,640	17,982	18,904	1,471	1,826	1,785
Hawaii	9,081	9,485	8,716	1,041	1,107	1,015
Total cane	23,721	27,467	27,620	2,512	2,933	2,800
Total beet	22,123	29,702	29,114	2,916	4,033	3,800

[1] Intended for harvest. Based on November 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.

acre is down fractionally from 1975, primarily because of slightly lower yields in Hawaii and Florida. Yields in Texas and Louisiana increased slightly from 1975.

Current estimates indicate the 1976/77 crop will total about 28.7 million tons, fractionally higher than the previous crop (table S-3 and figure S-2). This year Florida will produce about 38 percent of domestic production, Hawaii about 31 percent, Louisiana 26, and Texas 5 percent. Based on November 1 sugarcane acreage currently indicated for harvest (less deductions for seed cane acreage), and with a normal sugar recovery rate for each producing area, production of 2.85 million tons of cane sugar (raw value) is indicated, down less than 100,000 tons from last year (table S-3). Most of the prospective decline is anticipated in Hawaii, which has been suffering from lack of rainfall.

Foreign Trade

Sugar Imports Up From a Year Ago

For the first 9 months of 1976, total U.S. imports of 3.48 million tons of sugar (raw value) were running over 16 percent (487,000 tons) higher than a year ago (tables S-4 and S-5 and figure S-3). Based on the trend for the most recent 12 consecutive months, total U.S. imports for calendar 1976 will likely total between 4.3 and 4.6 million tons, up about 15 percent (about 600,000 tons) from last years 3.9-million-ton level.

Of the five major foreign suppliers which historically supplied a large share of U.S. import requirements, only three—the Dominican Republic, the Philippines and Peru—have sustained their position in recent years. The West Indies joined the big five in 1974 and Guatemala joined this year. Each

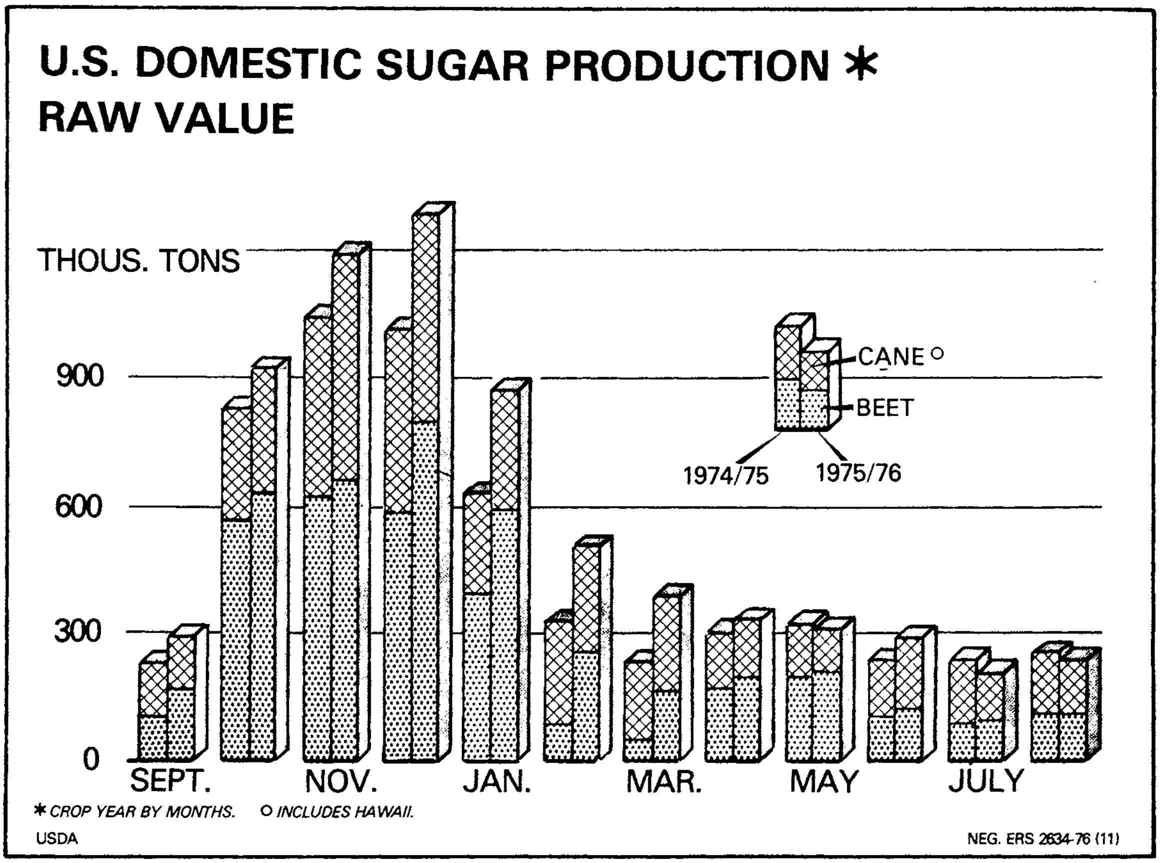

Figure S—2

will ship over 200,000 tons to the U.S. market in 1976. Through September, these five countries had supplied the United States with nearly three-fifths of its total imports.

Mexico, a traditional large supplier, had exported less than 500 tons to the United States through September while Brazilian exports were nil. Mexico is reportedly having some difficulty meeting its internal sugar commitments, and partly because of a severe frost in mid-1975, Brazil has only recently reentered the export market.

Because Brazil has not been able to export much sugar to the United States in 1976, Brazilian sugar may qualify for U.S. duty free import treatment under the Generalized System of Preferances (GSP) beginning March 1, 1977.[3] Based on present crop expectations Brazil could ship 500,000 to a million tons of sugar to the United States in calendar 1977. This year, only Guatemala of the big five is sending sugar to the United States duty free under GSP. Given its large shipments to the United States in calendar 1975, Guatemala will not likely be eligible for duty free treatment under the GSP in 1977.

[3]See May *Sugar and Sweetener Report*, table S-2, page 10.

U.S. Sugar Exports Running Behind Last Year

For the first 9 months of 1976, U.S. sugar exports totaled nearly 55,000 tons, down sharply from the 175,000 tons exported during the same period a year ago. If the trend continues, exports this year could approach 80,000 tons, a level still above the 10,000 tons typical of years prior to 1974 but down sharply from 1975's 206,000 tons. Canada, our most important market, continues to receive more than half of our exports.

Domestic Utilization

U.S. Deliveries Up in 1976

U.S. sugar deliveries totaled about 3.1 million tons (raw value) during the third quarter of 1976, nearly the same as in the third quarter of 1975 (table S-6 and figure S-4). This year, only deliveries in the July and October have been below year-earlier levels. Through the first 10 months, sugar deliveries totaled 9.22 millon tons, up over 10 percent (nearly 900,000 tons) from the first 10 months of 1975.

Calendar 1976 deliveries will likely total around 10.8 million tons, up sharply from the 10 million tons of 1975. With the record 1975 sugarbeet crop

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

Country	Calendar year				nine month totals	
	1970	1973	1974	1975	1975	1976
	1,000 short tons, raw value					
Western Hemisphere:						
Caribbean Islands:						
Bahamas	10	—	—	---	---	---
Dominican Republic	727	745	818	775	732	665
French West Indies	68	---	—	---	---	---
Haiti	22	15	19	12	12	6
West Indies	215	41	282	238	200	215
Netherlands Antilles	---	---	---	1	1	---
Total[1]	1,042	801	1,119	1,026	945	886
Central America:						
Belize (British Honduras)	16	48	63	46	46	10
Costa Rica	75	100	79	56	53	57
El Salvador	47	60	65	107	102	129
Guatemala	69	63	96	61	61	240
Honduras	11	---	8	6	6	5
Nicaragua	76	76	53	58	58	153
Panama	37	52	66	98	90	95
Total[1]	331	398	429	432	416	689
North America:						
Canada	---	---	---	40	26	37
Mexico	650	637	538	41	41	([2])
Total[1]	650	637	538	81	67	37
South America:						
Argentina	80	85	110	112	54	71
Boliva	---	---	---	---	---	45
Brazil	667	652	783	197	197	---
Colombia	69	75	105	159	103	70
Ecuador	90	93	60	47	12	28
Peru	455	407	471	215	110	265
Venezuela	34	32	---	---	---	---
Other	8	15	14	7	2	14
Total[1]	1,402	1,359	1,543	737	478	494
Total Western Hemisphere[1]	3,424	3,195	3,629	2,276	1,906	2,106
Eastern Hemisphere:						
Australia	211	265	242	464	325	179
China, Republic of	86	86	90	140	88	87
Fiji Islands	44	45	46	---	---	---
India	79	81	85	188	59	194
Korea	---	---	---	11	([2])	1
Malagasy, Republic of	10	12	13	13	---	13
Malawi	---	16	10	27	27	---
Mauritius	18	45	46	27	27	---
Mozambique	---	---	---	15	15	12
South Africa	78	74	69	134	97	97
Swaziland	7	30	41	36	36	17
Thailand	20	19	26	124	46	70
Other	21	6	---	---	---	15
Total Eastern Hemisphere excluding Philippines[1]	574	679	669	1,179	720	685
Philippines	1,298	1,454	1,472	413	366	686
Total Eastern Hemisphere[1]	1,872	2,134	2,141	1,592	1,086	1,371
Total U.S. Imports[1]	5,296	5,329	5,770	3,867	2,991	3,478

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

Source: Fruit and Vegetable Division, AMS, USDA.

Table S-5—Sugar imports: Monthly, quarterly, and annual raw value totals 1973-76, with comparisons[1]

Month and quarter	Imports						1976 compared with					
					Change from		Cumulative			Monthly		
	1973	1974	1975	1976	Year ago	Previous month & quarter	1973	1974	1975	1973	1974	1975
	1,000 short tons						*Percent*					
January	293	260	90	292	202	95	100.0	112.3	324.4	100.0	112.3	324.4
February	398	465	152	257	105	-35	79.5	75.7	226.9	64.6	55.3	169.1
March	411	580	347	333	-14	76	80.0	67.6	149.7	81.0	57.4	96.0
1st quarter	1,102	1,305	589	882	293	4	---	---	---	80.0	67.6	149.7
April	571	400	260	380	120	47	75.4	74.0	148.6	66.5	95.0	146.2
May	423	602	323	373	50	-7	78.0	70.9	139.5	88.2	62.0	115.5
June	444	637	397	463	66	90	82.6	71.3	133.7	104.3	72.7	116.6
2nd quarter	1,438	1,639	980	1,216	236	334	---	---	---	84.6	74.2	124.1
July	589	523	366	471	105	8	82.1	74.1	132.8	80.0	90.1	128.7
August	425	505	458	478	20	7	85.7	76.7	127.3	112.5	94.7	104.4
September	315	531	603	431	-172	-47	89.9	77.2	116.1	136.8	81.2	71.5
3rd quarter	1,329	1,559	1,427	1,380	-47	164	---	---	---	103.8	88.5	96.7
October	439	445	457									
November	409	386	224									
December	612	436	197									
4th quarter	1,460	1,267	878									
January-September	3,869	4,503	2,996	3,478	482	---	89.9	77.2	116.1	---	---	---
Annual	5,329	5,770	3,874	---	---	---	---	---	---	---	---	---

Source: Fruit and Vegetable Division, AMS, USDA.

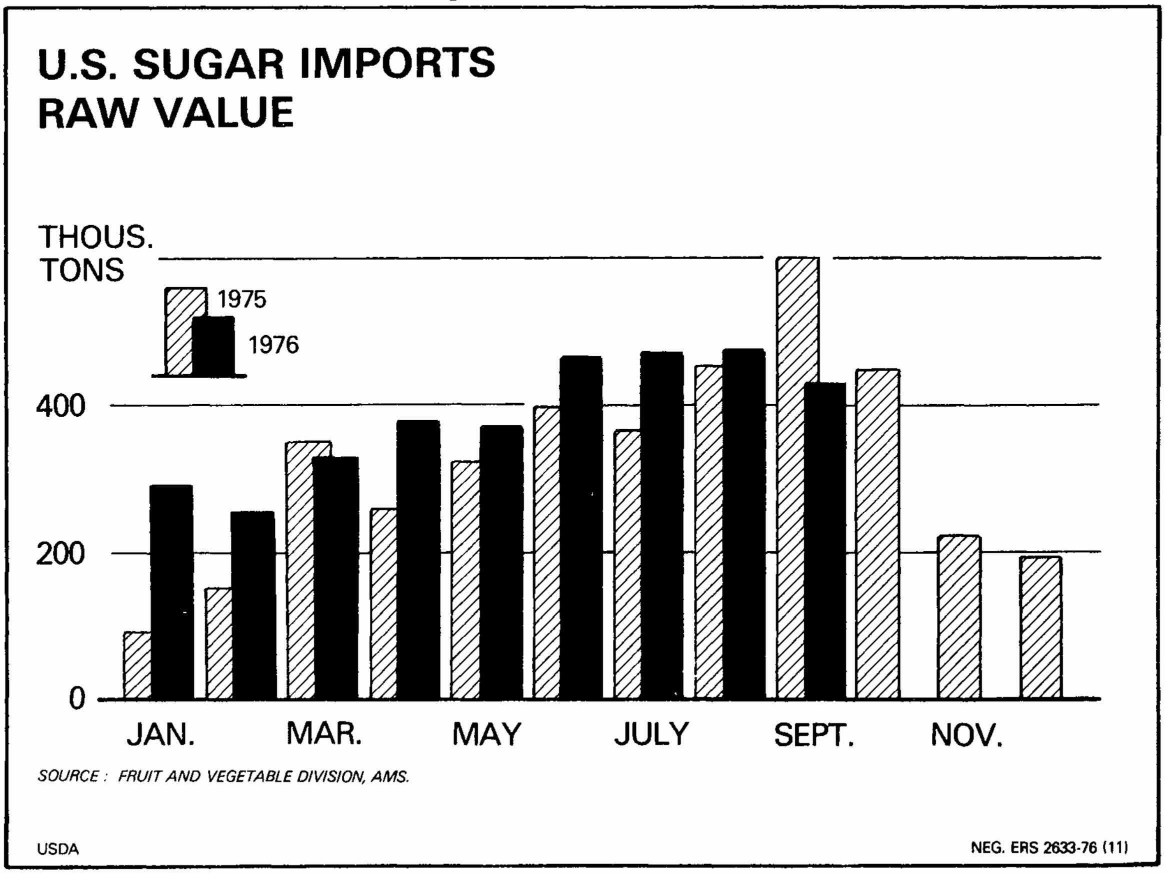

Figure S—3

Table S-6—Monthly, quarterly, and annual sugar deliveries to domestic users, change from year ago, previous month, and previous quarter, and 1976 compared with 1973-75[1]

Month and quarter	Deliveries[2]						1976 compared with					
					Change from		Cumulative			Monthly		
	1973	1974	1975	1976	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	333	41	-1	108.0	134.9	143.8	104.7	130.6	114.0
June	366	228	313	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	370	-76	5	106.8	135.8	124.6	109.5	120.9	83.0
August	401	341	365	357	-8	-13	104.1	130.6	120.2	89.0	104.7	97.8
September	305	292	319	355	36	-2	105.4	129.5	119.1	116.4	121.6	111.3
3rd quarter	1,044	939	1,130	1,082	-48	50	---	---	---	103.6	115.2	95.8
October	269	309	257									
November	246	254	193									
December	253	122	284									
4th quarter	768	685	734									
January-Septe,ber	2,869	2,335	2,539	3,023	484	---	105.4	129.5	119.1	---	---	---
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	607	129	102	87.0	77.5	130.0	83.8	85.4	127.0
1st quarter	1,844	2,070	1,234	1,604	370	-209	---	---	---	87.0	77.5	130.0
April	611	678	533	545	12	-62	87.5	78.2	121.6	89.2	80.4	102.3
May	669	785	563	598	35	53	87.9	77.8	117.9	89.4	76.2	106.2
June	697	763	622	632	10	34	88.4	78.7	114.5	90.7	82.8	101.6
2nd quarter	1,977	2,226	1,718	1,775	57	179	---	---	---	89.8	79.7	103.3
July	691	756	732	611	-121	-21	88.4	79.0	108.3	88.4	80.8	83.5
August	801	795	635	680	45	69	87.9	79.9	108.1	84.9	85.5	107.1
September	721	709	614	700	86	20	89.0	81.9	108.9	97.1	98.7	114.0
3rd quarter	2,213	2,260	1,981	1,991	10	216	---	---	---	90.0	88.1	100.5
October	671	736	655									
November	645	625	568									
December	662	336	594									
4th quarter	1,978	1,697	1,817									
January-September	6,034	6,556	4,933	5,370	437	---	89.0	81.9	108.9	---	---	---
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	973	287	200	92.8	91.1	142.9	92.4	105.2	141.8
1st quarter	2,707	2,759	1,759	2,513	754	-34	---	---	---	92.8	91.1	142.9
April	889	902	812	879	67	-94	94.3	92.7	131.9	98.9	97.5	105.3
May	987	1,040	855	931	76	52	94.3	92.0	126.2	94.3	89.5	108.9
June	1,063	991	935	997	62	66	94.2	93.5	122.0	93.8	100.5	106.6
2nd quarter	2,939	2,933	2,602	2,807	205	302	---	---	---	95.5	95.7	107.9
July	1,029	1,062	1,178	981	-197	-16	94.4	93.3	113.8	95.3	92.4	83.3
August	1,202	1,136	1,000	1,037	37	56	93.2	93.0	112.2	86.3	91.3	103.7
September	1,026	1,001	933	1,055	122	18	94.3	94.3	112.3	102.8	105.4	113.1
3rd quarter	3,257	3,199	3,111	3,073	-38	266	---	---	---	94.4	96.1	98.8
October	940	1,045	912									
November	891	879	761									
December	915	458	878									
4th quarter	2,746	2,382	2,551									
January-September	8,903	8,891	7,472	8,393	921	---	94.3	94.3	112.3	---	---	---
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.

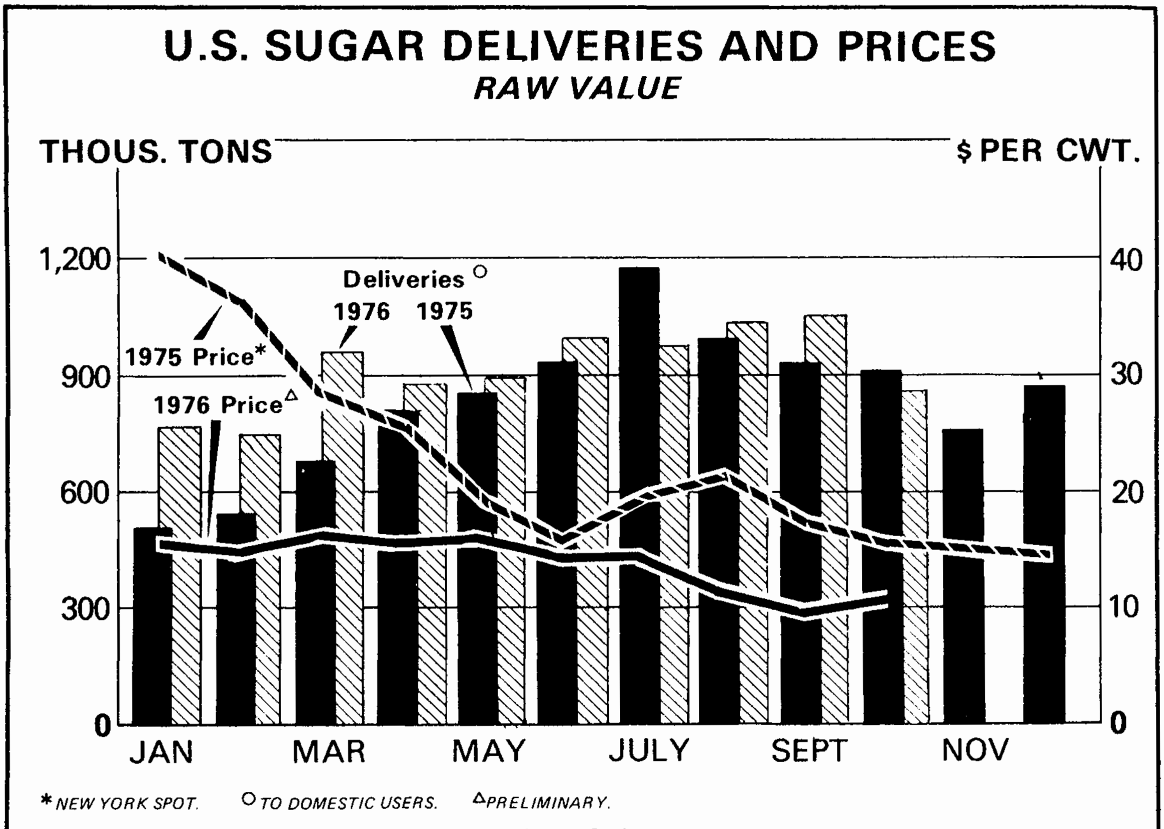

Figure S—4

and a large 1976 crop anticipated, U.S. beet sugar deliveries are expected to exceed the 1973 record of 3.64 million tons. Beet sugar deliveries will likely top 3.8 million tons this year and perhaps approach 4 million tons. Cane sugar is expected to supply the remainder of the 10.8-million-ton market.

California, Illinois, and the Middle Atlantic States (New York, New Jersey, and Pennsylvania) continue as the leading areas for U.S. sugar deliveries. The Middle Atlantic States will account for about 16 percent of total U.S. deliveries this year. Illinois, the number 1 State in deliveries will account for about 11 percent, while California, the number 2 State, will account for about 10 percent. Other leading areas include the East North Central (excluding Illinois), 13 percent[4]; the South Atlantic, nearly 10 percent[5]; and the West South Central[6], nearly 9 percent. Sugar deliveries have been running ahead in most States and areas this year. Deliveries in Michigan are reportedly down from last year.

During the January-June period, consumer size package deliveries, which account for under a fourth of total U.S. sugar deliveries, were up 10 percent from the same period in 1975. All other deliveries (mostly industrial, but some institutional) were up nearly 22 percent.

[4]Indiana, Ohio, Michigan and Wisconsin.
[5]Georgia, Florida, and North and South Carolina.
[6]Texas, Oklahoma, Arkansas, and Louisiana.

Refined Sugar Deliveries, by type of Container

Year or period	Industrial			Consumer size packages[3]
	Liquid sugar[1]	Bulk dry	Large packages[2]	
	1,000 tons			
Calendar year:				
1970	2,753	2,952	2,371	2,544
1971	2,716	3,003	2,280	2,610
1972	2,709	3,290	2,163	2,557
1973	2,706	3,417	2,168	2,530
1974	2,436	3,320	2,203	2,581
1975	2,089	3,112	1,608	2,463
First 2 quarters[4]				
1975	880	1,338	700	1,005
1976	1,026	1,661	860	1,109
Change	146	323	160	104
Percent change	16.6	24.1	22.9	10.3

[1]Sugar solids basis. [2]50 lb. and over. [3]Under 50 pounds. [4]Preliminary data do not include 112,000 tons in 1975 and 265,000 tons in 1976 of unspecified best sugar deliveries.

Source: AMS, USDA.

Refined sugar deliveries, by selected areas

Year or period	Middle Atlantic[1]	Chesapeake Bay[2]	South Atlantic[3]	West South Central[4]
	1,000 tons, refined sugar			
Calendar year:				
1970	2,050	600	931	876
1971	2,060	589	955	869
1972	2,001	571	1,020	912
1973	1,999	568	1,019	908
1974	1,907	591	973	869
1975	1,606	528	909	810
First 8 months:				
1975	1,016	336	593	536
1976	1,121	364	666	607
Change	105	28	73	71
Percent change	10.3	8.3	12.3	13.2

Year or period	East North Central: Illinois	East North Central: Other States[5]	West North Central[6]	California
	1,000 tons, refined sugar			
Calendar year:				
1970	1,286	1,500	772	1,161
1971	1,213	1,578	775	1,113
1972	1,233	1,627	770	1,107
1973	1,196	1,658	757	1,092
1974	1,234	1,596	774	1,127
1975	1,068	1,402	697	1,053
First 8 months:				
1975	695	935	456	676
1976	835	953	495	784
Change	140	18	39	108
Percent change	20.1	1.9	8.6	16.0

[1] New York, New Jersey, and Pennsylvania. [2] Maryland, Delaware, Virginia, West Virginia, and District of Columbia. [3] Florida, Georgia, and North and South Carolina. [4] Texas, Oklahoma, Arkansas, and Louisiana. [5] Michigan, Ohio, Indiana, and Wisconsin. [6] Minnesota, Iowa, Missouri, Kansas, Nebraska, and North and South Dakota.

Source: AMS, USDA.

Deliveries of bulk dry granulated sugar, which accounts for more than a third of total sugar use, increased 24 percent. Deliveries of liquid sugar (22 percent of total domestic sugar use) for the first 6 months of 1976 were up nearly 17 percent from a year earlier. Deliveries of large package sugar (50 pounds and over—over 18 percent of total use) increased 23 percent during the first half of 1976.

Per Capita Consumption Bouncing Back From 1975

Based on the trend in deliveries for the first 10 months, per capita refined sugar consumption this year seems likely to total near 94 pounds, up from last year's low level of 90 pounds but short of the 97 pounds recorded in 1974 and the 100-pound-plus years of 1969-73 (tabe S-12). Per capia beet sugar consumption will likely total near 32 pounds, up sharply from 29 pounds last year and 26 pounds in 1974.

Quarterly per capita consumption of refined sugar

Quarter	1973	1974	1975[1]	1976[2]
	Pounds	*Pounds*	*Pounds*	*Pounds*
I	22.3	24.2	16.3	21.6
II	26.4	25.1	23.4	24.0
III	28.4	27.0	28.0	26.4
IV	24.4	20.3	22.5	21.8
Annual	101.5	96.6	90.2	93.8

[1] Preliminary. [2] Estimate.

Source: Economic Research Service, USDA.

November 1 U.S. Stock Levels Larger Than a Year Ago

On November 1, domestic stocks totaled 1.57 million tons, up about 150,000 tons from a year ago (table S-7). Cane sugar stocks (both raw and refined) nearly matched last year's 738,000-ton level. Beet sugar stocks of 740,000 tons were up over 120,000 tons from November 1, 1975, while mainland cane sugar stocks totaled about 100,000 tons in contrast to 60,000 tons at this time last year.

Beet sugar companies marketed sugar rather aggressively during 1976 in an effort to move the record large 4-million-ton 1975/76 sugar crop. With expectations of a slightly smaller 3.8-million-ton crop this fall and prospects for some acreage reduction in 1977, there may be less pressure to clear stocks in the coming year.

U.S. Sugar Prices

Raw Sugar Prices Lower

U.S. raw sugar prices remained fairly stable during the October 1975/July 1976 period, averaging slightly over $15 per cwt. (New York Spot—table S-14 and figure S-5). Average monthly prices varied $1 or less per cwt. from the 10-month average. However, prices weakened in mid-July as the outlook for a good 1976/77 harvest began to emerge, despite the European drought. The monthly average price declined to $11.32 per cwt. in August. In September, prices averaged $9.80 per cwt.

With price levels below U.S. production costs, the President on September 21 raised the duty on imported raw sugar (96°) from $0.625 to $1.875 per cwt. In taking this action, the President emphasized that this was an interim measure. He also supported the request of the Senate Finance Committee for an investigation by the U.S. International Trade Commission under Section 201 of the Trade Act of 1974 to determine whether or not increased imports are a substantial cause of serious injury or the threat thereof, to the domestic industry producing a like or directly competitive

Table S-7—U.S. sugar deliveries to industrial and non-industrial users, calendar years 1970-75 and six month totals 1975-76

Type of buyer	Calendar year						First six months	
	1970	1971	1972	1973	1974	1975	1975	1976
	1,000 tons, refined sugar							
Industrial users:								
Food use								
Bakery and cereal products	1,420	1,361	1,449	1,454	1,443	1,241	572	676
Confectionery products	1,098	1,056	1,057	1,035	1,018	795	357	474
Processed foods	969	1,027	987	1,025	949	743	279	338
Dairy products	537	561	599	595	570	511	233	283
Other	433	493	508	502	514	486	226	288
Total food use	4,456	4,498	4,600	4,611	4,494	3,776	1,667	2,059
Beverage use	2,356	2,365	2,437	2,469	2,350	2,074	957	1,119
Total industrial users	6,812	6,863	7,037	7,080	6,844	5,850	2,624	3,178
Non-industrial users:								
Institutions								
Eating and drinking	90	79	85	94	91	72	40	32
Other[1]	99	95	88	106	121	85	41	59
Total institutions	189	174	173	200	212	157	81	91
Wholesale and retail								
Wholesalers, jobbers, and sugar dealers	2,206	2,156	2,103	2,064	2,002	1,919	769	1,002
Retail grocers, chain stores, and supermarkets	1,330	1,324	1,316	1,316	1,353	1,261	522	597
Total wholesale and retail	3,536	3,480	3,419	3,380	3,355	3,180	1,291	1,599
Minus consumer size packages[2]	2,544	2,610	2,557	2,530	2,581	2,463	1,022	1,146
Redistributed to industrial and other users	992	870	862	849	774	716	269	453
Total non-industrial user	3,725	3,654	3,592	3,580	3,567	3,337	1,372	1,690
Total food use	10,538	10,517	10,629	10,669	10,411	9,187	3,996	4,868
Non-food use[4]	84	93	91	111	128	86	37	53
Total food and non-food use	10,621	10,610	10,720	10,771	10,539	9,273	4,033	4,921

[1] Includes deliveries to government agencies and the military. [2] Less than 50 pounds. [3] Includes some deliveries to eating and drinking places and institutions. [4] Used largely for pharmaceuticals and some tobacco.

Source: Fruit and Vegetable Division, AMS, USDA.

product. The Commissio has until March 16, 1977, to report to the President. At the President's request, the Commission has indicated it will expedite its investigation.

In October, the New York spot price recorded the immediate impact of the September 21 duty increase of $1.25 per cwt. The New York spot price for raw sugar increased from $10.75 per cwt. on September 21 to $11.50 on October 8. Since then the U.S. raw price has followed the world price. The U.S. raw price reached a low of $10 per cwt. during the last week in October. It then rebounded slightly in early November. During the last half of November, the U.S. raw price held steady within a $10.50 to $11 per cwt. range.

The differential between the world and New York spot price, however, has widened to about $2.70 per cwt. in contrast to $1.40 per cwt. on September 21. With an apparent widening in the world imbalance between supplies and use, U.S. raw sugar prices in November averaged $10.46 per cwt., compared with $15 in November 1975 and the record monthly high of $57 per cwt. recorded in November 1974.

U.S. Wholesale Refined Prices Follow Raw Prices

U.S. wholesale refined cane sugar prices tend to follow changes in U.S. raw sugar prices. With U.S. raw prices relatively stable earlier this year, wholesale refined cane sugar prices during the October 1975/July 1976 period remained within a $20 to $22 per cwt. range.

Wholesale refined sugar prices have since followed the recent decline in raw sugar prices. Decreases in wholesale prices have varied from $4 to $4.75 per cwt. (table S-14 and figure S-6). There

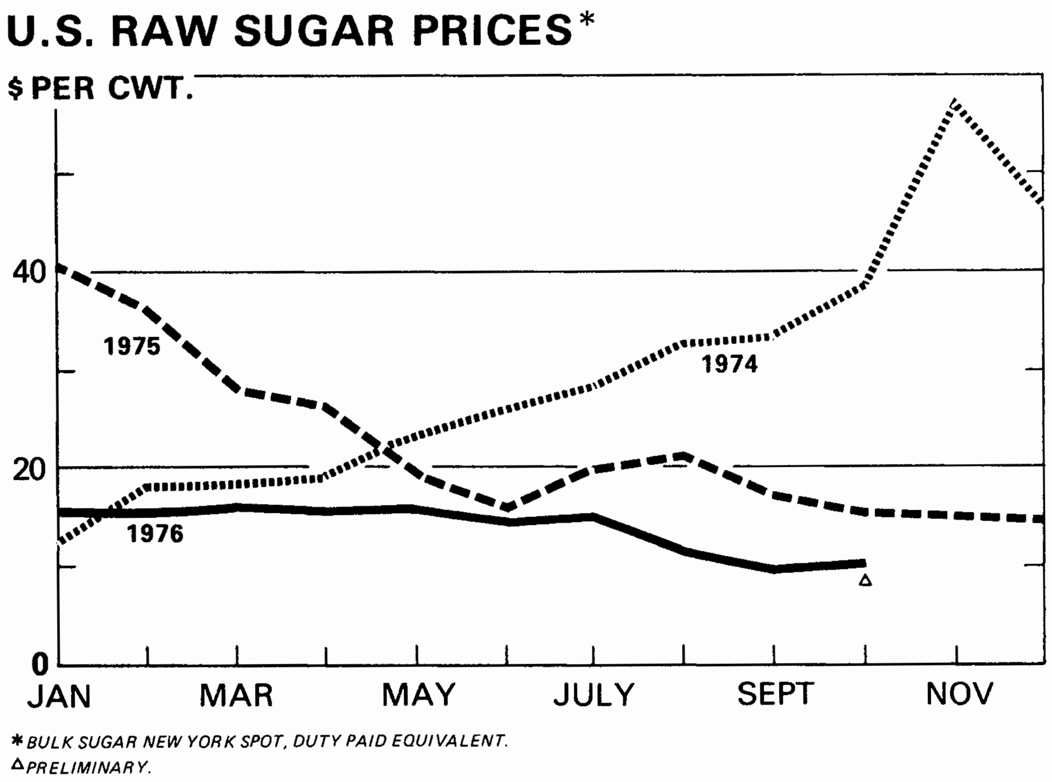

Figure S—5

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
August	9.99	11.40	11.32	24.72
September ..	8.16	10.05	9.80	22.88
October	8.03	10.75	10.65	21.82

[1] Sugar stowed at greater Caribbean ports including Brazil.

Source: U.S. average retail, BLS; all other prices, AMS, USDA.

Refined sugar: Selected wholesale price comparisons[1]

Year and month	Cane Sugar	Beet Sugar		
	Northeast	Chicago-West	Pacific Coast	Bulk dry
	Cents per pound	*Cents per pound*	*Cents per pound*	*Cents per pound*
1973	14.07	12.38	12.38	11.40
1974	34.35	32.07	31.90	28.46
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
Febbruary	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
August	17.04	16.30	16.44	16.50
September	15.85	14.45	14.49	13.80
October	16.90	14.93	15.38	14.61

[1] These 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, AMS, USDA.

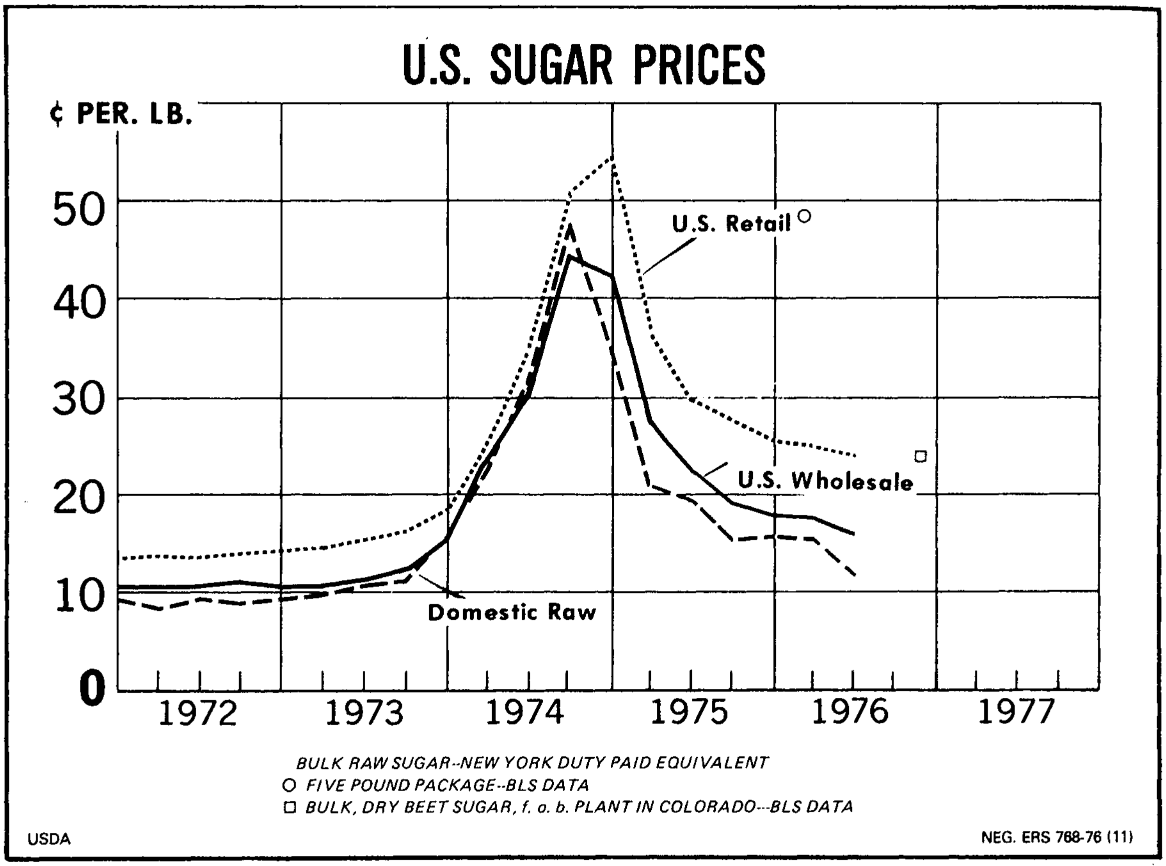

Figure S—6

was a slight increase in wholesale refined sugar prices in October, largely resulting from the President's tripling the U.S. import duty on raw sugar earlier on September 21. Wholesale refined prices have since declined slightly in November. Present wholesale list prices for refined sugar are in the neighborhood of $15 per cwt. for beet sugar and $16 per cwt. for cane sugar. Prices vary somewhat from area to area depending on competition.

Retail Prices Lag Raw and Wholesale Price

Retail sugar price changes tend to lag changes in raw and wholesale refined sugar prices. Since raw sugar prices frequently change direction slightly from month to month, it was not unusual for retail sugar prices to have increased slightly in August (reflecting the early July raw price increase), while raw and wholesale prices declined. The U.S. average retail price is expected to decline slightly for several months from the October level of 21.8 cents per pound (5-lb. package), to reflect the recent declines in wholesale refined sugar prices.

CORN SWEETENERS

Total Deliveries for Food Use Up Less Than Expected Earlier

Total domestic shipments of corn sweeteners for food use are now expected to top 3.2 million short tons dry basis (DB) this calendar year, up from under 3 million tons last year. Most of the increase is likely to come in high-fructose corn sirup (HFCS) shipments which this year may total 750,000 to 800,000 tons (DB), up from about 500,000 tons last year. Dextrose shipments for food use may total over 525,000 tons (DB)—up a few thousand tons from 1975. Corn sirup (other than HFCS) shipments for use in food products this year will likely fall slightly short of 2 million tons (DB).

Low and declining sugar prices have slowed corn sweetener market penetration this year, particularly HFCS expansion. Early expectations of a 1-million ton HFCS market this year have now been reduced to under 800,000 tons. There are currently six HFCS producers, and another one or two expected to come on stream next year. And three firms have deferred plans to build HFCS capacity, largely because of current low sugar prices. Even so, current HFCS capacity is reported to be more than adequate to meet current market needs at prevailing price levels for the next 1 to 2 years. Excess capacity for dextrose is negligible, while for corn sirup (other than HFCS), its excess capacity is reportedly about a fifth to a third as large as for HFCS. For comparison, there are three U.S. dextrose producers and eleven companies which produce conventional corn sirup.

Per Capita Consumption to Increase

Per capita consumption of corn sweeteners is expected to total nearly 30 pounds (DB) this year up from 27 pounds in 1975. Most of the prospective increase will come from HFCS. High fructose consumption may total near 7 pounds (DB) up from under 5 pounds in 1975. Dextrose consumption is expected to total nearly 5 pounds (DB), up fractionally from 1975. And corn sirup consumption (other than HFCS) is expected to total nearly 18 pounds (DB)—about the same as in 1975.

Corn Sweetener Prices Declining

As U.S. sugar prices fell, corn sweetener prices also declined significantly in the third quarter of this year. The Decatur, Illinois, HFCS price of $11.75 per cwt. (DB) in October was down from $14.85 per cwt. in June. Current low sugar prices make it difficult for HFCS producers to maintain a 10 to 15 percent differential under sugar prices even in the Midwest. And with a 1,000 or 2,000 mile transportation charge, it becomes even more difficult. This perhaps explains why some HFCS firms have temporarily pulled out of California.

Corn sirup (other than HFCS) was selling for about $9.34 per cwt. (DB) this past October in Illinois down from $11.84 per cwt. last June. Dextrose prices were also lower in October.

While low sugar prices are admittedly squeezing U.S. corn refiners, the squeeze could be worse. With the large 1976 corn crop, corn prices have declined, thereby temporarily helping HFCS producers. Further, prices of the valuable byproducts, polyunsaturated corn oil, and corn gluten feed and meal, have increased. Together, lower corn prices and higher byproduct prices have helped corn refiners offset low corn sweetener prices.

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	10.80	13.93	14.35	16.36
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*

Selected price comparisons: Corn and corn refiner by-products

Year or quarter	No. 2 yellow corn	By-products		
		Corn gluten		Crude
		Feed[1]	Meal[2]	Corn oil[3]
	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	2.83	109.30	273.87	25.54
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.

SWEETENER OUTLOOK FOR 1977

Sugar

Ample World Supplies for Consumption

The prospective record 1976/77 world sugar crop is expected to provide ample supplies to meet anticipated global consumption requirements. With world consumption expected to increase around 2 to 2.5 million short tons (raw value), world sugar stocks could increase over 4 million tons by the end of the 1976/77 crop year, in contrast to a 1-million-ton increase in 1975/76.

The prospective global 1976/77 ending stock level of 23.5 million short tons (raw value) would be the largest level accumulated in recent years. During the 1971/72-1975/76 period, ending world stock levels ranged between 18 and 20 million tons annually. The last 20-million-ton-plus ending world stock level was the 22.9 million short tons posted at the end of of the 1970/71 season, 6 years ago.

U.S. Production Likely Lower Next Year

Current low sugar prices are likely to reduce domestic sugarbeet plantings next year. The January 21 Crop Intentions Report will provide an early indication of U.S. sugarbeet growers planting plans. The cutback in sugarbeet plantings could be significant, with variations existing between areas. For example, the reduction in California could be significantly larger than in the Red River Valley, with a wider range of crop alternatives.

U.S. Deliveries and Consumption to Hold Steady

U.S. sugar deliveries next year are expected to remain around 10.8 million tons, raw value. Per capita consumption of refined sugar could fall short of this year's prospective 94 pounds, however, population increases are expected to maintain total sugar consumption near the current level.

Sugar use in beverages (largely in soft drinks) is expected to increase over this year's level. However, prospective higher candy prices will probably result in less candy consumption, and thus, less sugar and corn sweetener use in candy next year.

Future Sugar Price Levels

World stock levels, producer's 1977 crop intentions, and the possibilities of an international sugar agreement or a change in domestic sugar policy add to the uncertainty of future raw sugar prices. Prospective large world supplies are likely to maintain downward pressure on sugar prices in the short run, unless there are some cutbacks in next year's world sugar crop. Producers will be watching for new U.S. executive or legislative action, or a new international sugar agreement that would enhance prices.

The outlook for sugar prices next year suggests relative price stability in the short run, despite major uncertainties. Some strengthening could occur later if 1977/78 prospects do not suggest a further buildup in stocks. However, sharp increases are not anticipated in the immediate future. As the season unfolds, world crop prospects and changes in global demand for sugar, will increasingly influence U.S. and world sugar price levels.

The futures market for sugar shows both U.S. and world futures prices trending upward in coming months. From March 1977 to March 1978, the November 30 futures contracts show slight increases in world prices largely associated with storage charges.

More interestingly, the futures market shows a widening of the differential between world and U.S. prices in the coming months. The widening suggests that perhaps the futures market is anticipating some type of futre action—executive or legislative—that would limit imports or raise U.S. prices relative to world prices.

Corn Sweetener Shipments to Increase

U.S. corn sweetener shipments are expected to overall increase in 1977. Most of the increase is expected to come from high fructose corn syrup. If current low sugar prices continue, the increase in total corn sweetener shipments for food use in 1977 will likely range from 200,000 to 400,000 tons (DB). With significantly higher sugar prices, the increase would likely be larger which could tend to dapen any major increase in U.S. sugar prices.

SWEETENER-CONTAINING PRODUCTS

Sugar Deliveries for Use in Commercially Prepared Products Up In First Half

Sugar for use in commercially prepared foods represented 65 percent of total sugar deliveries in the first half of 1976 (table S-8). Beverage use (largely in soft drinks) accounted for nearly 23 percent of total sugar ue and food use for the remaining 42 percent. Use in cereal and bakery products was the larest commercial food use. Other important food uses were in confectionery, processed foods, and dairy products.

Deliveries for use in commercially prepared foos and beverages for the first half of this year increased 21 percent from the same period last year. Deliveres for use in beverages increased 17 percent, while deliveries for food use increased 24 percent.

Goodbye 15-Cent Candy Bar—Hello 20-Cent Candy Bar!

The November 1968 *National Food Situation* forecast the demise of the nickel candy bar. Siilarly, the November 1973 issue of the same report said goodbye to the 10-cent candy bar.

Table S-8—U.S. mainland sugar stocks held by primary distributors, September 1, 1960, 1965-76 and January 1-November 1, 1975-76[1]

Year and month	Cane sugar: Refiners: Refined	Cane sugar: Refiners: Raw	Cane sugar: Refiners: Total[2]	Cane sugar: Mainland cane mills	Cane sugar: Importers refined	Cane sugar: Total	Beet processors	Total mainland[2]
	--- 1,000 short tons, raw value ---							
	SEPTEMBER 1, BEGINNING STOCKS							
1960	281	479	760	2	102	864	311	1,175
1965	275	420	695	85	19	799	858	1,658
1970	220	511	731	81	14	826	557	1,384
1971	315	539	854	111	17	982	647	1,629
1972	319	562	881	69	3	953	578	1,532
1973	273	577	850	154	5	1,009	446	1,454
1974	266	347	613	64	1	678	521	1,200
1975	251	319	569	62	---	631	400	1,032
1976	284	585	869	141	---	1,010	679	1,689
	JANUARY 1-NOVEMBER 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
August	211	272	484	139	---	623	652	1,275
September	251	319	569	62	---	631	400	1,032
October	265	434	699	13	---	712	246	958
November	477	262	738	60	---	798	617	1,415
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
August	311	588	899	220	---	1,119	919	2,038
September	284	585	869	141	---	1,010	679	1,689
October	252	513	765	62	---	827	496	1,324
November	276	452	728	100	---	828	740	1,568

[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.

Unfortunately, it is now time—just 3 years later—to say goodbye to the 15-cent candy bar. Trade sources report higher cocoa prices have contributed to higher retail candy prices. Manufacturers today face sharply higher cocoa prices and general inflation. When cocoa costs rise sharply, manufacturers usually take one or more of the following actions to protect their profit margins: (1) reduce the bar size, (2) substitute lower priced vegetable oil base "confectioners coatings" for higher priced cocoa butter, or (3) increase prices.

While the confectionery industry uses nearly 10 percent of U.S. sugar deliveries, *higher sugar prices are not the culprit this time*! Higher cocoa prices precipitated by tightening world supplies are reducing manufacturer margins. Thus, the retail price is being increased incrementally, and the typical chocolate bar size is being increased slightly.

For example, one manufacturer of a sweetened milk chocolate bar is increasing its bar size from 1.2 to 1.35 oz. Similarly, a manufacturer of a chocolate-covered coconut paste bar is increasing its size from 1.5 to 1.65 oz., while another manufacturer of a chocolate-covered marshmallow bar is increasing its size from 1-13/16 oz. Beginning January 1, each bar will retail at 20 cents. The actual net price increase at retail, after adjusting for the increase in size, is nearly 19 percent for the sweetened milk chocolate bar, 21 percent for the chocolate-covered coconut paste bar, and nearly 14 percent for the chocolate-covered marshmallow bar.

Candy bars have traditionally been prices in increments of 5-cents, and the current increase is consistent with previous practices. Forecasts that the 15-cent chocolate bar would disappear in late 1974, because of sky-high sugar prices, were premature. But most manufacturers reduced the size of the 15-cent candy bar then to lessen the cost-price squeeze. And earlier this year, the sizes of some 15-cent candy bars were increased to reflect the then lower costs of cocoa, sugar, and other ingredients.

Cocoa and Chocolate

1975/76 World Production Down—Prices Rising

The 1975/76 world cocoa crop is forecast at 1.46 million metric tons, down 5 percent from the 1976/77 harvest. The smaller crop this year comes from less favorable growing conditins in West Africa and Brazil. World grindings in 1976 are expected to be well above the 1975 level of 1.44 million tons, reflecting lower sugar prices and economic recovery in most consuming nations earlier this year.

Because of tightening supply prospects, cocoa bean prices (New York spot "Accra") averaged $1.54 per pound in November, nearly double the monthly $0.75 price in March. Similarly, cocoa butter prices averaged $2.49 per pound in November compared with $1.46 in March.

U.S. Cocoa Use Not Yet Affected by Rising Prices

The U.S. grind appears likely to total about 507 million pounds for the year, up 11 percent from 1975. U.S. cocoa bean imports totaled 400 million pounds for the first 9 months of 1976, up a fourth from last year. Imports of cocoa butter,

Imported cocoa beans and cocoa butter prices

Year, quarter, or month	Cocoa beans		Cocoa butter
	"Bahia"	"Accra"[1]	
	Cents per pound		
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
1975:			
III	60.9	76.4	132.4
IV	63.9	71.7	140.1
1976:			
I	71.6	75.6	147.6
II	93.6	97.1	187.6
III	109.4	116.6	202.9
October	132.8	138.2	227.5
November[2]	150.3	154.4	251.2

[1] New York Spot. [2] Through November 15.

Source: New York *Journal of Commerce.*

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

Description	1974	1975	First 9 months	
			1975	1976
	Million pounds	Million pounds	Million pounds	Million pounds
U.S. Imports:				
Cocoa beans	495	522	358	446
Minus reexports	51	16	11	13
Net imports	444	506	347	433
Semiprocessed[1]				
Unsweetened chocolate	33	27	17	43
Cocoa butter	49	45	30	54
Unsweetened cocoa	167	167	117	137
Other products	3	3	2	1
Total	252	242	166	235
Consumer products[1]	18	11	8	4
TOTAL IMPORTS	714	761	521	672
U.S. grind	506	455	325	377
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; Concumption data, Economic Research Service, USDA.

unsweetened chocolate, and unsweetened cocoa powder were all significantly larger than a year ago. Total imports of semiprocessed products totaled 225 million pounds, up over a third from last year. Imports of consumer products increased only slightly.

Because of larger grindings and imports of semiprocessed products, per capita cocoa consumption will likely total about 3.5 pounds this year, up from 3.3 pounds in 1975. With cocoa prices now rising and prospects for continued high prices, consumption will likely slow in 1977. If cocoa consumption declines somewhat next year because of higher price levels not only would both U.S. imports and grindings likely decline, but sugar deliveries for confectionery use in calendar 1977 would also probably not match this year's level.

Consumer Expenditures for Sweetener-Containing Products Increased in 1975

U.S. consumers purchased sugar, table sirup, edible molasses and packaged synthetic sweeteners valued at $2.66 billion in calendar 1975 (table S-9). Products containing sweeteners purchased by U.S. consumers totaled $36.8 billion. Cereal and bakery products alone totaled $16.7 billion. Looking ahead to 1977, retail expenditures for sweeteners may decline, while it appears likely that further increases may occur for sweetener-containing products.

Retail Prices of Sweetener-Containing Products Haven't Changed Much

While retail sugar prices are much lower than in early 1975, prices of sugar-containing products have shown remarkable price stability over the last 12 months (table S-13). For example, U.S. retail sugar prices in October were nearly 30 percent lower than prices in October 1975. In contrast, retail prices for 14 sugar-containing items for which data are available, showed an average increase of about 1 percent from October 1975 to October 1976. Retail prices of eight items increased an average of about 3.5 percent since October 1975. Conversely, the retail prices of six items declined an average of 4 percent.

Retail prices of cream sandwich cookies were up over 4 percent from September a year ago. For ice cream the increase was more than 5 percent. On the down side, cola prices (6-pack) were down nearly 6 percent from September 1975, while grape jelly prices were down 5 percent. Of the 14 products exhibited, price stability was greatest for chocolate sirup (down less than 1 percent) and white bread (up 1 percent) during the October 1975/October 1976 period.

OTHER SWEETENERS

Honey

Increased Imports Boost U.S. Honey Supplies

While this year's weather was generally good overall in the United States for producing some crops, it was not exceptionally good for producing honey. This year's honey production may fall slightly short of last year's level of 197 million pounds.

While 1976 U.S. production may be down, U.S. imports are expanding sharply. Imports could total 75 million pounds in calendar 1976 compared with 46 million pounds in 1975. U.S. exports appear likely to total little more than 5 million pounds in calendar 1976, up slightly from last year.

Table S-9—Consumer purchases of sweeteners and selected products containing sweeteners, 1973, 1974, and 1975[1]

Item	1973	1974	1975	Item	1973	1974	1975
	Million dollars				*Million dollars*		
Caloric sweeteners				Products containing sweeteners cont.			
Sugar	984	2,143	2,310	Processed and prepared foods			
Table syrup	192	242	303	Canned fruits[3]	1,243	1,389	1,541
Packaged molasses	4	5	5	Canned fruit juice	595	656	753
Total	1,180	2,390	2,618	Frozen fruit	79	85	94
				Frozen fruit juice	682	752	869
Packaged synthetic sweeteners	34	39	43	Canned beans with pork or sauce	219	256	277
Products conatining sweeteners				Catsup	233	285	316
Cereal and bakery products				Jams, jellies, and preserves	409	514	624
Bread and rolls	5,449	6,167	6,496	Packaged gelatin desserts	140	153	166
Crackers, biscuits, and cookies	1,583	1,991	2,382	Prepared puddings[3]	89	98	106
Cakes and other pastries[2]	3,019	3,171	3,744	Marshmallow creme	6	8	8
Doughnuts	568	643	712	Total	3,695	4,196	4,754
Pies[2]	486	567	599				
Prepared flour mixes	826	893	969	Dairy products			
Other mixes, icings, and frostings	213	227	247	Dairy type drinks			
Cold cereals	945	1,210	1,504	Sweetened cocoa	90	118	170
Total	13,089	14,869	16,653	Prepared food drinks	73	81	90
				Breakfast drinks	89	104	114
Confectionery products				Non-dairy coffee creamers	133	154	163
Bar candy	1,282	1,475	1,625	Total	385	457	537
Boxed candy	1,379	1,539	1,645	Ice cream	1,864	2,182	2,436
Bulk candy	292	315	368	Condensed milk	19	22	22
Chewing gum	514	562	666	Total	2,268	2,661	2,995
Other candy	537	591	653				
Total	4,004	4,482	4,957	Miscellaneous	893	1,129	1,230
				Total products containing sweeteners	28,840	33,262	36,765
Beverages							
Fruit drinks	486	523	525	Total sweeteners and products containing sweeteners	30,054	35,691	39,426
Soft drinks	4,405	5,402	5,651				
Total	4,891	5,925	6,176				

[1] Value of total domestic consumption. [2] Includes frozen. [3] Includes baby foods.

Source: SUPERMARKETING, September 1976.

If the present indications for U.S. production, imports, and exports turn out about as now expected, total domestic disappearance for calendar 1976 could exceed last year's 240 million pounds level by 20 to 30 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 valorum 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. However, the President concluded that immediate import relief for honey was not in the National economic interest. He also instructed the Secretary of Agriculture to undertake additional research on the importance of pollination, to identify problem areas, and to recommend appropriate solutions as needed.

Maple Sirup

U.S. maple sirup production totaled nearly 930,000 gallons in 1976, down nearly a fourth from 1975. The decline resulted from unseasonably warm weather in late winter and early spring.

Maple sirup imports—virtually all from Canada—will likely total nearly 9 million pounds this year, compared with 6.7 million pounds last year. Maple sugar imports are likely to total near the 1.4 million pound level of lastyear.

Non-caloric Sweeteners

Earlier this year, the Food and Drug Commission turned down a request by a major U.S. manufacturer for approval to produce cyclamate for use in foods and beverages. This decision is being appealed.

Substantial quantities of saccharin continue to be imported and produced domestically. Imports this year are running behind the pace of 1975. Saccharin imports for calendar 1976 could total nearly 2.5 million lbs. compared with 3.1 million lbs. in 1975. Per capita saccharin consumption this year is estimated at 8 pounds (sugar sweetness equivalent) up from 7 pounds in 1975.

Industrial Molasses

In the third quarter, industrial and feed molasses prices at New Orleans increased 33 percent (table S-17). Prices strengthened due to a combination of European drought-damaged pastures, and offshore replacement buying.

However, some weakening in prices is anticipated in the fourth quarter. Industry sources indicate that domestic feedlot demand is down. Offshore replacement buying has also weakened, as reports of better than expected European beet yields have come out.

Table S-10—World centrifugal sugar production in specified countries, 1972/73 to 1976/77[1]

Region and country	1972/73	1973/74	1974/75	1975/76	1976/77[2]
	1,000 short tons— raw value	*1,000 short tons— raw value*	*1,000 short tons— raw value*	*1,000 short tons— raw value*	*1,000 short tons— raw value*
North America:					
United States:					
Mainland cane	1,620	1,420	1,470	1,830	1,775
Hawaii	1,129	1,041	1,107	1,025	1,100
Puerto Rico	255	290	299	308	310
Total U.S. cane	3,004	2,751	2,875	3,163	3,185
Sugarbeets	3,663	3,197	3,006	4,033	3,750
Total U.S.	6,667	5,948	5,881	7,196	6,935
Caribbean:					
Cuba	5,787	6,393	6,283	6,614	6,393
Dominican Republic	1,259	1,316	1,251	1,300	1,378
Other countries	957	973	897	940	992
Total Caribbean	8,003	8,682	8,431	8,854	8,763
Other Mainland:					
Mexico	3,053	3,125	3,006	3,003	3,031
Canada	161	126	103	132	143
Central America	1,092	1,269	1,451	1,711	1,841
Total Other Mainland	4,306	4,520	4,560	4,846	5,015
Total North America[3]	18,976	19,150	18,872	20,895	20,713
South America:					
Argentina	1,426	1,819	1,689	1,487	1,764
Brazil	6,795	7,672	8,157	6,834	8,267
Colombia	898	937	1,001	1,086	1,113
Peru	1,014	1,125	1,091	1,091	1,047
Venezuela	571	637	584	538	590
Other countries	1,031	1,159	1,281	1,546	1,658
Total South America[3]	11,735	13,349	13,803	12,583	14,439
Europe:					
Western Europe:					
E.C.-9					
Belgium-Luxemburg	758	865	683	801	750
Denmark	377	405	457	466	480
France	3,289	3,492	3,250	3,562	3,235
West Germany	2,690	2,707	2,687	2,792	2,809
Ireland	186	208	158	219	220
Italy	1,381	1,250	1,113	1,606	1,737
Netherlands	833	917	856	1,008	1,048
United Kingdom	1,062	1,154	681	768	871
Total E.C.-9[3]	10,577	10,999	9,885	11,222	11,150
Non E.C.					
Austria	428	408	438	564	431
Greece	142	177	206	338	359
Spain	915	899	659	1,030	1,186
Sweden	322	291	336	305	340
Other countries	196	208	190	183	208
Total Non E.C.[3]	2,002	1,983	1,829	2,420	2,524
Total Western Europe[3]	12,579	12,982	11,715	13,643	13,674
Eastern Europe:					
Czechoslovakia	859	947	937	827	772
East Germany	794	777	772	716	661
Poland	2,016	2,003	1,716	2,149	2,205
Romania	636	753	618	617	772
Yugoslavia	471	532	611	539	647
Other countries	639	672	656	685	779
Total Eastern Europe[3]	5,413	5,685	5,310	5,534	5,836
Total Europe[3]	17,993	18,666	17,025	19,177	19,510
U.S.S.R.	8,984	10,549	8,521	8,488	10,141

See footnotes at end of table.

Table S-10—World centrifugal sugar production in specified countries, 1972/73 to 1976/77[1] —Continued

Region and country	1972/73	1973/74	1974/75	1975/76	1976/77[2]
	1,000 short tons— raw value	*1,000 short tons— raw value*	*1,000 short tons— raw value*	*1,000 short tons— raw value*	*1,000 short tons— raw value*
Africa:					
Egypt	650	658	595	683	744
Mauritius	756	768	767	547	799
Mozambique	402	430	441	268	386
South Africa	2,111	1,909	2,076	1,986	2,205
Other countries	2,081	2,274	2,382	2,577	2,703
Total Africa[3]	6,002	6,041	6,261	6,061	6,837
Asia:					
China-Peoples Republic	2,708	2,899	2,646	2,756	2,866
China-Rep. of Taiwan	860	983	828	901	959
India	5,040	5,456	6,387	6,019	6,063
Indonesia	981	1,047	1,102	1,157	1,268
Iran	689	734	711	755	777
Japan	716	720	527	519	520
Pakistan	518	701	614	694	728
Philippines	2,673	2,772	2,717	3,260	3,194
Thailand	716	1,025	1,168	1,767	1,984
Turkey	894	811	919	1,087	1,202
Other countries	333	464	476	489	558
Total Asia[3]	16,129	17,614	18,096	19,404	20,117
Oceania:					
Australia	3,015	2,923	3,219	3,230	3,770
Fiji Islands	413	386	397	408	419
Total Oceania[3]	3,428	3,309	3,616	3,638	4,189
TOTAL WORLD[3]	83,247	88,679	86,194	90,246	95,946

[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] Estimate. [3] May not add due to rounding.

E.C. Economic Community.

Source: Foreign Agricultural Service, USDA.

Table S-11—Sugar, cane and beet: Supply and utilization, United States, calendar years, 1966-76[1]

Year	Supply						Utilization				Domestic disappearance		
	Production	Offshore receipts: Foreign	Offshore receipts: Territories	Offshore receipts: Total	Beginning stocks	Total supply	Total use	Exports	Net change in invisible stocks	Balancing items[2]	Livestock, feed, and alcohol	Military and civilian: Total	Military and civilian: Per capita
	1,000 short tons, raw value												*Pounds, refined*
1966	5,279	4,495	717	5,212	2,805	13,296	10,538	65	101	58	79	10,235	97.2
1967	5,297	4,804	705	5,509	2,758	13,564	10,623	72	-188	66	199	10,474	98.3
1968	5,627	5,130	505	5,635	2,941	14,203	11,160	79	291	51	82	10,657	99.0
1969	5,483	4,886	342	5,228	3,043	13,754	10,885	82	-273	57	68	10,951	100.7
1970	5,874	5,296	353	5,649	2,869	14,392	11,557	66	185	60	83	11,163	101.9
1971	5,815	5,587	144	5,731	2,835	14,381	11,558	89	-7	70	61	11,345	102.4
1972	6,015	5,459	149	5,608	2,823	14,446	11,623	50	-21	45	62	11,487	102.8
1973	6,060	5,329	79	5,408	2,823	14,291	11,645	26	91	69	31	11,428	101.5
1974	5,663	5,770	157	5,927	2,646	14,236	11,382	77	300	51	8	10,946	96.6
1975[3]	6,302	3,867	96	3,963	2,854	13,119	10,263	206	-282	29	6	10,304	90.2
1976[4]	6,720	4,300	180	4,480	2,856	14,056	10,940	80	—	50	10	10,800	93.8

[1] Deliveries by primary distributors for consumption in the United States can be derived by adding the net change in invisible stocks to quantities used for food by military and civilians. [2] Calculated as a residual. [3] Preliminary. [4] Estimate.

Table S-12—Caloric and noncaloric sweeteners: Per capita U.S. consumption, 1960-76

Calendar year	Refined cane and beet sugar						Corn sweetners[1]			Minor caloric[1]			Total caloric	Noncaloric sweetners[2]		
	U.S. grown sugar			Cane sugar												
	Beet sugar	Cane sugar	Total	Im-ported	Total	Total	Corn sirup	Dex-trose	Total	Honey	Edible sirups	Total		Sacc-harin	Cycla-mate	Total non-caloric
	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	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[4]	30.5	24.9	55.4	34.8	59.7	90.2	19.3	5.1	24.4	.9	.4	1.3	115.9	7.0	([3])	7.0
1976[5]	32.0	24.9	56.9	36.9	61.8	93.8	19.3	5.1	24.4	.9	.4	1.3	119.5	8.0	([3])	8.0

[1] Dry basis. Recent corn sweetener consumption may be under stated due to incomplete data. Excludes high-fructose. [2] Sugar sweeteness 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.

Note: The Corn Sweetener data in this table are subject to review and possible revision.

Table S-13—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	74.9	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	117.7	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	116.8	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	130.5	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
August	123.6	35.3	94.7	126.3	12.1	47.5	130.8	117.1	21.9	55.8	46.3	71.3	59.1	58.0	59.1
September	114.4	35.4	96.4	128.4	12.0	47.9	121.0	116.9	22.1	56.4	46.9	71.0	59.4	58.2	59.6
October	109.1	35.3	96.8	130.2	12.1	48.0	121.2	117.4	22.4	56.2	46.8	71.0	59.7	58.4	61.5

[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-14—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	-.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
August	17.04	-10.01	-3.42	16.30	-9.88	-2.46	11.32	-9.79	-3.27
September	15.85	-7.45	-1.19	14.45	-10.90	-1.85	9.80	-7.56	-1.52
3rd quarter	17.78	-7.97	-3.39	16.50	-8.07	-1.98	11.90	-7.55	-3.42
October	16.90	-4.25	1.05	14.93	-5.51	.48	10.65	-4.80	.85

Source: Fruit and Vegetable Division, AMS, USDA.

Table S-15—Trends in corn refinery exports, annual 1970-75 and first nine months, 1975-76

Calendar 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								
	Thousand pounds	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*	*Thousand pounds*
1970	52,163	15,468	28,802	12,715	6,536	N.A.	N.A.	1,329,372	1,445,056
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	1,713,816	1,867,824
1973	69,221	16,080	66,032	20,608	78,306	1,761,582	230,362	1,991,944	2,245,191
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	64,875	45,422	2,799	2,210,500	163,988	2,374,488	2,570,857
First 9 months									
1975	52,671	10,279	48,417	36,148	2,404	1,687,328	111,576	1,798,904	1,948,823
1976	51,060	15,273	42,471	62,239	2,826	1,630,848	256,016	1,886,864	2,060,733
	Value								
	Thousand dollars	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
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 9 months									
1975	10,830	1,718	9,792	18,741	179	70,414	6,397	76,811	118,071
1976	11,574	1,323	6,959	22,228	146	89,932	13,780	103,712	145,942

NA.—Not available.

Source: U.S. Department of Commerce.

Table S-16—Imports of selected sweeteners and molasses, annual 1970-75 and nine month totals 1975-76

Calendar year	Corn sweeteners: Glucose sirup	Corn sweeteners: Dextrose	Maple: Sugar	Maple: Sirup	Honey	Saccharine	Molasses: Edible	Molasses: Inedible
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 gallons*	*1,000 gallons*
1970	262	593	3,561	10,549	8,864	1,398	2,052	381,859
1971	339	214	4,096	6,360	11,446	1,433	2,333	399,762
1972	1	447	2,223	7,829	38,960	1,368	1,623	407,933
1973	700	691	2,613	8,860	10,658	2,072	2,857	448,139
1974	326	2,453	1,179	8,836	25,999	3,415	2,469	415,668
1975	2,499	4,185	1,443	6,670	46,380	3,088	2,483	315,706
First 9 months								
1975	1,109	3,741	564	5,426	36,783	2,642	2,392	257,992
1976	3,883	193	1,058	7,431	43,573	1,927	739	355,281

Source: BLS.

Table S-17—Molasses: Blackstrap, beet, citrus, and corn (hydrol), annual average 1971-75, with first, second, and third quarter averages 1976, price f.o.b. tank car or tank truck[1]

Year	Blacstrap: New Orleans	Blacstrap: Baltimore	Blacstrap: California Ports	Beet molasses: Colo., Mont., and Wyom.	Beet molasses: Ore., Utah, and Idaho	Citrus molasses: Florida	Corn molasses: Chicago
	Dollars per ton	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*
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	51.80	57.53	54.50	65.72	61.50	41.38	50.23
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.

TABLES 18 -- FEED AND INDUSTRIAL MOLASSES: U.S. PRODUCTION, INSHIPMENTS, IMPORTS, EXPORTS AND UTILIZATION 1970-75 1/

YEAR	PRODUCTION								ESTIMATED DOMESTIC SUPPLY	U.S. IMPORTS	U.S. MAINLAND EXPORTS	ESTIMATED AVAILABLE SUPPLY
	CANE					BEET	CITRUS	HYDROL				
	MAINLAND MILLS	REFINERS BLACK-STRAP	HAWAII	INSHPMNTS PUERTO RICO	TOTAL CANE							
	MILLION GALLONS											
1970	86	47	57	3	193	159	12	22	385	382	1	766
1971	89	43	50	1	184	161	10	22	377	400	2	775
1972	126	39	56	7	227	166	8	23	424	407	3	828
1973	114	45	51	0	210	158	10	23	401	403	5	805
1974	108	45	44	2	200	144	11	24	378	384	13	749
1975 2/	112	45	49	0	206	190	10	25	431	316	6	751

YEAR	ESTIMATED UTILIZATION					
	INDUSTRIAL				MIXED FEEDS DIRECT FEEDING AND SILAGE 3/	APPARENT UTILIZATION
	DISTILLED SPIRITS	YEAST CITRIC ACID	PHARMACEUTICALS & EDIBLE MOLASSES	TOTAL		
	MILLION GALLONS					
1970	8	100	54	162	604	766
1971	8	94	54	156	618	774
1972	7	99	57	163	667	828
1973	5	100	59	164	642	805
1974	16	100	59	175	573	749
1975 2/	6	101	60	167	584	751

1/ BASED ON MOLASSES MARKET NEWS MARKET SUMMARY 1975
2/ ESTIMATED.
3/ MOLASSES UTILIZED IN FEEDS IS ESTIMATED BY SUBTRACTING MOLASSES USED INDUSTRALLY FROM ESTIMATED MAINLAND SUPPLIES WITHOUT CONSIDERING CHANGES IN STOCKS.

Principal contributors:
James R. Thorpe and Douglas M. Edwards

Fruit and Vegetable Division — Agricultural Marketing Service

SUGAR MARKET HIGHLIGHTS

Deliveries

Sugar deliveries in October were 4.7 percent lower than in October 1975 according to preliminary data. However, January-October deliveries were 10.6 percent ahead of in 1975.

Inventories

Novembr 1 sugar stocks this year were up 10 percent from November 1, 1975, and up 19 percent from October 1, 1976.

Domestic Production

Total sugar production for the mainland United States was 2.6 million tons raw value through September 1976, 34 percent ahead of production in the first 9 months of 1975. Hawaiian Sugar production for the first 42 weeks of 1976 was 878,973 tons, down 12.5 percent from the 1971-75 average.

Imports

Imported sugar receipts for January-September were 3.4 million short tons, 15.5 percent over the

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

Item	Beef processors	Importers	Mainland cane processors[1]	Refiners		Net total
				Raw	Refined	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Short tons, raw value					
	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	71,894	0	0	9,705	81,599
Produced from beets or cane	1,931,723	0	649,030	43,213	0	
Less deliveries to refiners	0	0	1,044,394	0		[2] 1,579,572
Receipts of raws by refiners	0	0	0	[3] 5,384,895	0	
Less raws melted	0	0	0	5,331,312	0	[4] 53,583
Refined from raws melted	0	0	0	0	5,283,653	5,283,653
Adjustments	-1,328	0	+11,813	-1,469	-5,113	+3,903
Sub-total	1,930,395	71,894	-383,551	95,327	5,288,245	7,002,310
Net total supply	3,526,178	71,894	74,198	522,867	5,537,987	9,733,124
	DISPOSITION					
Distribution for						
Continental consumption[5]	3,023,340	71,894	11,796	9,622	5,247,745	8,364,397
Export	6,429	0	106	0	38,565	45,100
Livestock feed	0	0	0	0	0	0
Alcohol	0	0	0	0	0	0
Sub-total	3,029,769	71,894	11,902	9,622	5,286,310	8,409,497
Inventory Sept. 30, 1976	496,409	0	62,296	513,245	251,677	1,323,627
Total distribution and inventory	3,526,178	71,894	74,198	522,867	5,537,987	9,733,124

[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 1,044,394 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.

same period in 1975. Refined sugar imports for the period were 76 percent ahead of 1975. Receipts from the Philippines were over the two-thirds million mark, followed closely by the Dominican Republic with just under two-thirds million. Panama and South Africa are approaching 100,000 tons each, already reached by nine other Countries.

Raw Sugar Prices

World—Compared with September, the volume of sugar contracts traded on the New York Coffee and Sugar Exchange in October fell 34 percent with a total amount of 64,014. The October average spot price was lower for the third straight month at 8.03 cents per pound. The high was 9 cents per pound on the 8th and the low was 7.05 cents on October 20. The average for the first week of November was 7.54 cents.

Domestic—Trading volume in October decreased by nearly 56 percent from September with a total of 1,340 contracts. The domestic spot price average for the month was 10.65 rising by almost a cent from last month. The high for October was on the 8th at 11.50 cents per pound and the low on the 20th at 9.95 cents. The average for the first week of November was 10.01 cents per pound.

Refined Sugar Prices

Wholesale—Prices rose all across the Nation in October, apparently reflecting the effect of raw prices rising in early Octber, largely resulting from the President tripling the import duty on sugar. Refiners in the Northeast showed an increase of just over 6½ percent while refiners' prices climbed by nearly 8 percent in the Southeast. Cane and beet prices in the Chicago-West region rose by just over 3 percent, while those on the Pacific Coast increased over 6 percent. Prices have declined some in November.

Retail—The average U.S. retail price for granulated sugar was 21.82 cents per pound in October (5-pound bag).

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

Item	1976	1975	Change 1975 to 1976
	Short tons, raw values		
Continental United States			
Refiners' raw	9,622	7,839	+1,783
Refiners' refined	5,286,310	4,911,486	+374,824
Sub-total	5,295,932	4,919,325	+376,607
Beet processors' refined	3,029,769	2,545,784	+483,985
Importers' direct consumption	71,894	46,397	+25,497
Mainland sugarcane processors'	11,902	55,670	-43,768
Total	8,409,497	7,567,176	+842,321
For:			
Alcohol	0	2,998	-2,998
Export	45,100	124,127	-79,027
Livestock feed	0	2,597	-2,597
Continental consumption[1]	8,364,397	7,437,454	+926,943
Puerto Rico	111,150	100,846	+10,304
Hawaii	28,999	25,962	+3,037

[1] Includes deliveries for United States Military forces at home and abroad.

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

Item	1976	1975	Change 1975 to 1976
	Short tons, raw value		
Refiners' raw	513,245	434,218	+79,027
Refiners' refined	251,677	265,079	-13,402
Sub-total	764,922	699,297	+65,625
Beet processors' refined	496,409	245,924	+250,485
Importers' direct consumption	0	0	0
Mainland sugarcane processors[2]	62,296	12,613	+49,683
Total	1,323,527	957,834	+365,793

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

	1976[1]		1975	
	October	Jan.-Oct.	October	Jan.-Oct.
	Short tons, raw value			
Refiners	573,295	5,869,227	625,958	5,545,283
Beet Processors' refined	282,197	3,311,966	258,074	2,803,858
Importers' direct consumption	7,764	79,658	26,107	72,504
Mainland sugarcane processors'	[2] 2,000	13,902	6,256	61,926
Total	865,256	9,274,753	916,395	8,483,571
For:				
Alcohol	N.A.	0	0	2,998
Export	N.A.	45,100	7,890	132,017
Livestock feed	N.A.	0	0	2,597
Continental consumption[3]	865,256	9,229,653	908,505	8,345,959

[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, October 30, 1976 and October 31, 1975

Item	1976[1]	1975	Change 1975 to 1976
	Short tons, raw value		
Refiners' raw	452,446	476,591	-24,145
Refiners' refined	275,583	261,665	+13,918
Sub-total	728,029	738,256	-10,227
Beet processors' refined	739,657	617,032	+122,625
Importers' direct consumption	0	0	0
Mainland sugarcane processors'	[2] 100,000	59,827	+40,173
Total	1,567,686	1,415,115	+152,571

[1] Preliminary. [2] Estimated

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

Item	1976	1975	Change 1975 to 1976
	Short tons, raw value		
Production			
Cane			
Florida	613,656	524,395	+89,261
Louisiana	—	4,807	-4,807
Texas	78,679	51,384	+27,295
Sub-total	692,335	580,586	+111,749
Domestic Beet	1,930,395	1,382,706	+547,689
Total	2,622,730	1,963,292	+659,438
Marketings			
Mainland cane			
Florida	823,665	638,318	+185,347
Louisiana	224,693	119,794	+104,899
Texas	109,567	62,194	+47,373
Sub-total	1,157,925	820,306	+337,619
Beet Processors[1]	3,029,769	2,545,784	+483,985
Total	4,187,694	3,366,090	+821,604

[1] Includes 6,429 tons marketed for export in 1976 and 14,341 tons in 1975.

Table 7—Refined sugar production and month-end stocks

	Production				Month-end stocks	
	Cane sugar refiners	Beet sugar processors			Cane sugar refiners	Beet sugar processors
		Old crop[1]	New crop	Total		
	1,000 short tons, raw value					
1971-75 average	638			283	285	1,075
1974 monthly average	678			268	272	987
1975 monthly average	551			268	261	1,066
1975						
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	635	125	--	125	298	1,195
July[2]	618	54	41	95	311	919
August[2]	634	43	74	117	284	679
September[2]	663	19	154	173	252	496
October[3]	597	--	526	526	276	740
Last 12-month average	583	--	--	326	273	1,269

[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-September 1976 and 1975

Source of supply	Raw sugar		Direct consumption sugar		Total	
	1976	1975	1976	1975	1976	1975
	Short tons, raw value					
OFFSHORE						
Foreign						
Argentina	70,724	53,699			70,724	53,699
Australia	179,263	324,854		9	179,263	324,863
Austria	—	—	16	—	16	—
Belgium	—	—	1,129	—	1,129	—
Belize	9,778	46,155			9,778	46,155
Bolivia	45,329				45,329	
Brazil	—	197,131			—	197,131
Canada	—	—	36,723	25,927	36,723	25,927
China, Republic of	86,529	88,029	4	—	86,537	88,029
Colombia	70,159	99,210	198	4,285	70,353	103,495
Costa Rica	56,859	53,196	50	—	56,909	53,196
Denmark				2		2
Dominican Republic	664,552	732,016			664,552	732,016
Ecuador	28,440	11,530			28,440	11,530
El Salvador	128,782	102,316	40		128,822	102,316
Fiji Islands				1		1
France			11,095		11,095	
Germany, West			989	1	989	1
Guatamala	240,096	60,729			240,096	60,729
Haiti	6,218	11,622			6,218	11,622
Honduras	4,571	6,073			4,571	6,073
India	179,901	58,965	13,918		193,819	58,965
Korea			777	30	777	30
Malagasy Republic	13,400				13,400	
Malawi		26,585				26,585
Mauritius		26,741				26,741
Mexico		35,284	411	5,846	411	41,130
Mozambique	11,979	15,090			11,979	15,090
Netherlands			1,501	22	1,501	22
Netherlands Antilles				1,279		1,279
Nicaragua	153,271	57,960	59	2	153,330	57,962
Panama	95,013	88,706		803	95,013	89,509
Paraguay	9,028	2,286			9,028	2,286
Peru	265,402	110,225			265,402	110,225
Philippines	686,362	366,106			686,362	366,106
South Africa	97,382	96,863			97,383	96,863
Swaziland	17,002	35,795	1		17.002	35,795
Sweden				2		2
Switzerland			745		745	
Thailand	70,059	45,525			70,059	45,525
United Kingdom			36	21	36	21
Uruguay	5,265			24	5,265	24
West Indies	215,112	199,692		132	215,112	199,824
Total foreign	3,410,476	2,952,383	67,692	38,386	3,478,168	2,990,769
Domestic						
Hawaii	754,393	713,893	[1] 7,964	[1] 6,607	762,357	720,500
Puerto Rico	173,797	69,264	5,943	796	179,740	70,060
Total Domestic	928,190	783,157	13,907	7,403	942,097	740,560
Total Offshore	4,338,666	3,735,540	81,599	45,789	4,420,265	3,781,329
Mainland cane area	1,087,607	723,329	[2] 0	[2] 0	1,087,607	723,329
Acquired for reprocessing and samples	1,835	2,521	0	0	1,835	2,521
GRAND TOTAL	5,428,108	4,461,390	81,599	45,789	5,509,707	4,507,179

[1] Refined sugar received by refiners. [2] Refined sugar produced direct from cane by processor-refiners.

Table 9—Primary distribution of sugar, continental United States, by Regions,[1] January-September 1976

Region	Cane sugar refiners	Beet sugar processors	Mainland cane sugar mills	Total
	Hundredweights[2]			
New England	5,601,239	105,525	0	5,706,764
Mid-Atlantic	23,517,362	2,996,454	13,355	26,527,171
North Central	19,942,163	32,974,420	199,077	53,115,660
Southern	42,720,721	2,732,845	11,428	45,464,994
Western	6,978,337	17,706,144	0	24,684,481
Grand total	98,759,822	56,515,388	223,860	155,499,070

[1] Due to lack of coverage, data are published in abbreviated from by region only rather than by States as was previously done. [2] 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 Region,[1] January-September 1976 and 1975

Region	Cane sugar refiners		Beet processors		Total all primary distributors[2]	
	1976	1975	1976	1975	1976	1975
	Thousands of hundredweights[3]					
New England	5,601	4,832	106	136	5,707	5,017
Mid-Atlantic	23,517	20,869	2,996	2,016	26,527	23,032
North Central	19,942	20,841	32,974	24,110	53,116	45,093
Southern	42,721	37,047	2,733	2,201	45,465	40,003
Western	6,978	6,664	17,706	14,748	24,684	21,421
Unspecified	---	---	---	4,105	---	4,105
Grand total	98,759	90,253	56,515	47,316	155,499	138,671

[1] New England State - include Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut. Middle Atlantic States - include New York, New Jersey, and Pennsylvania. North Central States - include Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. Southern States - include Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas. Western States - include Alaska, Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California. [2] Includes deliveries by mainland cane sugar mills. [3] Reported as produced or imported and delivered except liquid sugar which is on a sugar solids content basis.

Table 11—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
	Cents per pound	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*
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	9.99	1.41	11.40	11.32	-.08
September	8.16	1.89	10.05	9.80	-.25
October	8.03	2.72	10.75	10.65	-.10
November					
December					

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

Table 12—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
	Cents per pound	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*
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	20.46	20.19	20.46	18.72	19.56	18.48	18.76	19.11	18.83
August	24.72	17.04	16.69	17.04	16.23	16.64	16.30	16.30	16.44	16.64
September .	22.88	15.85	15.06	15.85	14.45	14.49	14.38	14.45	14.49	14.50
October ...	21.82	16.90	16.24	16.90	14.93	15.43	14.91	14.93	15.38	15.42
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 13—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
	Cents per pound			*Percent*		*Cents per pound*		*Percent*	
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									
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
August	17.04	11.64	14.50	68	85	15.36	16.70	90	98
September	15.85	10.09	12.56	63	79	14.05	15.27	88	96
October	16.90	9.64	12.00	57	71	14.05	15.27	83	90
Last 12-month average	19.96	12.36	15.39	62	77	15.39	16.73	77	84

[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. [4] Hydrate: commercial 600-bag carload F.O.B. New York City.

*Annual data incomplete for dextrose.

Table 14—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
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		
August:				
2-6	20,789	731	11.16	12.50
9-13	17,786	142	10.39	11.91
16-20	21,781	207	9.83	11.20
23-27	24,885	331	8.89	10.04
30-31	4,354	—	9.25	10.35
Total August	89,595	1,411		
September:				
1-3	13,889	317	8.67	9.57
6-10	21,464	210	8.28	9.17
13-17	18,405	1,130	8.09	9.29
20-24	21,660	1,121	7.72	10.18
27-30	21,712	239	8.29	10.78
Total September	97,130	3,017		
October:				
1	3,120	274	8.10	11.20
4-8	20,126	247	8.81	11.29
11-15	10,205	27	8.45	10.92
18-22	14,240	421	7.37	10.17
25-29	16,323	371	7.54	10.15
Total October	64,014	1,340		

*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 to the New York Coffee and Sugar Exchange - F.O.B. and stowed at greater Caribbean Ports.

Compiled by:
Larry C. Larkin

Commodity Economics Division — Economic Research Service

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. Whenever possible, we have included the addresses of those foreign publications that may not be available in libraries in the United States. For readers not near large libraries, the addresses of the major American sugar and sweetener publishers are also listed below.

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 12th Street, S.W., Washington, D.C. 20250

The Australian Sugar Journal
Phoenix House, 333 Adelaide Street, Box 608, G.P.O., Brisbane 4001, Queensland, Australia 31-1881.

The Bakers Digest
Siebel Publishing Co., 4049 W. Peterson Avenue, Chicago, Illinois 60646, (312) 463-3404

Beverage Industry
Magazines for Industry Inc., 777 Third Ave., New York, N.Y. 10017, Publishers Printing Co., Box 1494, Louisville, Ky. 40201

Food Processing
430 N. Michigan Ave., Chicago, Illinois 60611, (312) 644-2020

The International Sugar Journal Ltd.
23a Easton Street, High, Wycombe, Bucks, England, TELEX: 21792 REF 69

La Sucerie Belge
Tate and Lyle, Ltd., Group Research and Development, P.O. Box 68, Reading, England R G6 2BX

Sugar y Azucar
24 W. 45th Street, New York, N.Y. 10036, (212) 586-4820

Sugar Journal
107 Camp Street, P.O. Box 2406, New Orleans, Louisiana 70130, (504) 524-2119

1. Abdulbhan, Pakorn and Suksupha, Khubbol. "GROWTH AND STRUCTURE OF THE SUGAR INDUSTRY IN THAILAND—PART I," *International Sugar Journal*, vol. LXXVIII, no. 933, Sept. 1976, pp. 266-269.

   The analysis reported is limited to those factories producing plantation white sugar and raw sugar which have a daily grinding capacity of more than 200 tons of cane per day. Contents: cane production; sugar production; rated milling capacity of major sugar plants; sugar production by regions. Refined sugar and non-centrifugal sugar which have no economic significance are not included.

2. *The Australian Sugar Journal*
   "OPTIMISTIC VIEW OF WORLD MARKET TRENDS AND PROSPECTS," vol. 68, no. 3, June 1976, pp. 167, 171, 182.

   The opinion was expressed that changes in the last decade in economic factors, in relationships with other commodities and in political relationships give hope that world sugar prices will be much better for producers in the future, and periods of depressed sugar prices will be relatively short-lived. The author assessed current issues affecting the world sugar market and developments which could influence future trends.

3. *Beverage Industry*
"FDA CYCLAMATE BAN POSES QUESTIONS ON NEED FOR IMPROVED DIET DRINKS," vol. 61, no. 1, July 9, 1976, pp. 1, 7, 11, 22.
The recent FDA directive asking Abbott Laboratories to withdraw its petition for reinstatement of cyclamates is causing industry bottlers to make a closer examination of the widely recognized need for improved diet drink formulas.

4. Carnegie, A. J. M.
"SUGAR CANE WHITE GRUBS (SCARABAEOIDEA) AND THEIR CONTROL IN SOUTH AFRICA," *Sugar Journal*, vol. 39, no. 4, Sept. 1976, pp. 9-15.
Various Scarabaloidea which have damaged sugarcane in southern Africa are mentioned. Life cycles under field conditions are discussed with comments on biology and feeding habits. An account is given of field trials of various chemical insecticides.

5. Forsyth, David J. C.
"LABOR—INTENSIVE TECHNOLOGIES IN SUGAR PRODUCTION (AN ECONOMIC EVALUATION)," *Sugar y Azucar*, vol. 71, no. 8, Aug. 1976, pp. 34-35.
This article reports in brief the results of a major program of applied research in economics of world sugar-making technology directed specifically at making a comprehensive and definitive evaluation of the premise that labor-intensive techniques were to be preferred. The principal research finding was that conventional, i.e. capital-intensive, methods of making sugar are clearly superior to labor-intensive methods for all but the smallest factories. Thus, it was concluded that technologies presently in use are the 'appropriate technologies.'

6. Fujimoto, Yoshinori
"SUGAR INDUSTRY OF THAILAND," *Sugar y Azucar*, vol. 71, no. 8, Aug. 1976, pp. 29-31.
The author discusses sugar production (1975-76), cane crushed, molasses yield, sugar yield, and grinding capacity.

7. Furines, J. H.
"PRE-DRYING BAGASSE USING FLUE GASSES," *Sugar Journal*, vol. 39, no. 3, Aug. 1976, pp. 39-40.
Saving fuel by the proper drying of bagasse provides not only money savings, but also self-suffiency in case of another fuel crisis.

8. Gray, Fred
"THE CONFECTIONARY INDUSTRY—TRENDS AND PROSPECTS WITH A RAW MATERIAL INGREDIENT OUTLOOK," paper presented at the Retail Confectioners International Short Course in Retail Candy Making, Gannon College, Erie, Penn., July 23, 1976, 27 pages. (Copies may be obtained from Room 200, 500 12th St. S.W., Wash., D.C. 20250, (202) 447-7290.)
Contents: importance of the industry; trends in confectionery products—production, imports, exports, consumption, consumer preference, trends in confectionery shipment by lant location; importance to sweetener industry and general outlook to 1980.

9. Henry, Robert E.
"HIGH FRUCTOSE CORN SYRUP—NEW SWEETENER FOR THE BAKER," *The Bakers Digest*, vol. 50, no. 2, April 1976, pp. 25-26, 74.
To the baker, high fructose corn syrup is an increasing available source of sweetener solids competitively priced and free from the problems of world-wide weather, world pricing and diminishing availability associated with sucrose. The author notes that in the commercial production of white pan bread, buns and sweet rolls, high fructose corn syrup formulations have consistently scored as high or higher than sucrose formulations. In yeast leavened goods, high fructose corn syrup is being used as a direct solids replacement for sucrose.

10. Hidi, P. et al.
"OBSERVATIONS ON THE OCCURANCE AND NATURE OF POLYSACCHARIDES IN SUGARCANE," *Sugar Journal*, vol. 39, no. 2, July 1976, pp. 25-31.
Brief discussion is presented of the effects of the polysaccharide, dextran, on raw sugar manufacture and refining, and of the procedures most commonly used to estimate the content of dextran in cane juices, process materials, and raw sugar. The results of routine measurements of input dextran over a 5-year period at 11 mills in Australia and Fiji are discussed.

11. Hormann, Johann
"EXPERIENCE IN SUGARCANE IRRIGATION IN ANGOLA," *Sugar y Azucar*, vol. 71, no. 7, July 1976, pp. 46-47.
Aside from fertilizing and pest control, irrigation plays a most important role in the economic production of sugarcane in Angola. The author discusses: the pumping station;

main line layout; sprinkler lines and sprinklers.

12. Jones, Everett G. and Lopez-Ona, John V.
"APPLICATION OF STATISTICAL METHODS AS USED IN EXPERIMENTS FOR THE EVALUATION OF FLOCCULANTS," *Sugar y Azucar*, vol. 71, no. 10, Oct. 1976, pp. 17-21.
An example of a statistical approach to experiments in a sugar refinery isthe evluation of flocculant performance in the laboratory and clarifiers.

13. Kelly, F. H. C
"THE EVALUATION OF RAW SUGAR QUALITY," *International Sugar Journal*, vol. LXXVIII, no. 931, July 1976, pp. 199-202.
Means for evaluating the quality of raw sugar with reference to a number of influencing parameters (polarization, dilution indicator, purity, ash, colour, shape, conglomerate, starch) have been outlined, but final selection must be in terms of real costs within a refinery. Furthermore, this evaluation bears little relationship to the scarcity component in the market price of raw sugar for which appropriate allowance should be made for fully effective evaluation.

14. Kolodny, Saul
"ECONOMIC FACTORS AFFECTING FUTURE SWEETENER CONSUMPTION," paper presented at American Chemical Society's Symposium on U.S. Sweetener System, ACS Centennial Writing, New York City, April 8, 1976.
The article's abstract is as follows: "Reasonableness and stability have characterized sugar prices in the United States for a generation prior to 1974. Largely the result of a comfortable supply situation managed pursuant to federal legislation, this favorable price circumstance encouraged consumption. Sugar, and to a degree the corn-derived sweeteners, proved to be attractive base ingredients and elements in the development of the myriad prepared and convenience foods and beverages which proliferated as living standards improved, life styles changed, and the population skewed to the young. Radical changes in the world and U.S. sugar markets in recent years, however, may alter future trends and proportions in sweetener consumption. On the world scene, the likelihood of tighter global supply balances will tend to elevate and make more volatile so-called world sugar prices. The United States sugar industry and its customers, no longer the beneficiaries of a managed supply system due to the expiration of federal legislation, will be directly subject to the price volatility and supply/demand imbalances of the world market. Sugar consumption is bound to be affected by the absence of previously assured price stability and reasonableness. Although detrimental to sugar, both as to its consumption and the interest of the industry, this same circumstance could lead to encouragement to further expansion in corn sweeteners, particularly high-fructose, corn syrup."

15. Lassus, Louis
"HIGH-FRUCTOSE IS HERE TO STAY," *Market News—Corn Sweeteners*, (Article reproduced from Beverage World, Oct. 1976), published by Corn Sweeteners, 1350 Waconia Ave., S.W., Cedar Rapids, Iowa 52406, (319) 366-7861.
Soft drink bottlers continue to use corn sweeteners despite lower sugar prices. According to a survey conducted by Beverage World, a cross section of bottlers showed that 33 percent of the 2,311 soft drink plants in operation were using and would continue to use high-fructose corn syrup. Although 50 percent said they have not used corn sugars, the majority are ready to switch if sucrose prices use too sharply.

16. Leffingwell, Roy J.
"17.5 MILLION DOLLAR SUGAR PLANTATION EXPANSION," *Sugar y Azucar*, vol. 71, no. 7m July 1976, pp. 34-35, 38-39.
The author discusses how one of Hawaii's marginal plantations is being turned into a highly promising low-cost sugar producer at a cost of $17.5 million (U.S.).

17. Lipinsky, Edward S.
"CONVERSION OF SUGARCANE PRODUCTS INTO FUELS AND CHEMICAL FEEDSTOCKS," *Sugar Journal*, vol. 39, no. 3, Aug. 1976, pp. 27-30.
The author discusses a research project being conducted for the Energy Research and Development Administration whose primary objectives are to suggest methods to derive fuels economically from sugar crops and corn; to evaluate the potential feasibility of the various suggestions; and to suggest means to convert the potential into practical application.

18. Miles, G. W. and Rich, J. E. A.
"DRY DUST COLLECTORS FOR PULP DRIERS," *La Sucrerie Belge, vol. 95, nos.7-8, July/Aug. 1976, pp. 255-258.*
The dry dust collector systems installed and tested at the Tracy Factory of Holly

Sugar Co. are described accompanied by diagrams. Using this equipment it has been possible to get pulp drier particulate emmissions into compliance with air pollution control district standards.

19. *Shulka, Lal N. and Ravalo, Eliodoro J.*
"SOIL COMPACTION IN SUGAR CANE FIELDS DUE TO TRANSPORT CARTS," Sugar y Azucar, vol. 71, no. 8, Aug. 1976, pp. 24-26.

Based on the experimental data available, it is concluded that under the test conditions of a clay soil ranging in moisture content between 27 and 48 percent, there occurred very significant soil compaction in sugarcane fields due to traffic of loaded transport wheel carts, at harvest time. Soil compaction affects air and water movement, soil moisture, porosity and soil strength and crop yield. Introduction of larger machines in most phases of sugarcane production makes soil compaction a serious problem and is most apparent in the operation of harvesting, loading, and transportation machines.

20. Skinner, J. C.
"SAMPLES FOR MEASURING SUGAR CONTENT OF SUGAR CANE VARIETIES IN MECHANICALLY HARVESTED TRIALS," *International Sugar Journal*, vol. LXXVIII, no. 932, Aug. 1976, pp. 227-230.

Samples of billets were compared with standard six-stalk samples for estimating sugar content of plots in variety trials cut by a chopper-harvester. Considering all cane harvested from each plot (sound cane plus extraneous matter) indirect selection based on stalk samples was more effective than direct selection based on billet samples.

21. Smith, Norman H.
"INHIBITION OF ENZYMATIC BROWNING IN CANE SUGAR PROCESSING," *International Sugar Journal*, vol. LXXVIII, no. 933, Sept. 1976, pp. 259-263.

Enzymatic browning has been found to be a significant factor in the development of cane sugar color. Inhibitions of enzymatic browning by heating cane prior to milling changes several of the properties of raw sugar color: decreased colour level; less tendency for colorants to be included within the crystal, and increased sensitivity of colour to ph changes.

22. Stewart, D. L., Fordyce, I. V., and Buchsel, S. E.
"AIRPOLLUTION—SOURCEPOINT ODOR EVALUATION," *Sugar Journal*, vol. 39, no. 4, Sept. 1976, pp. 21-22.

The authors conclude that the reduction in odor emission rate in a scrubbed pulp drier sample suggests that chemical scrubbing offers the best approach to the odor reduction problem. This study provides data and information on odor composition, concentration and volume of a sugar beet facility. Source points, such as vents, boiler house stack and pulp drier stacks were checked.

23. Stinson, Wm. S.
"EXPANDS CORN SYRUP PRODUCTION BY 130 MILLION LB/YR," *Food Processing*, vol. 37, no. 9, Sept. 1976, pp. 86-87.

Added facilities emphasize process flexibility, sanitation, energy conservation and enclosed loading area at the recently expanded corn syrup production facilities of Penick and Ford Limited at Cedar Rapids, Iowa; production has increased about 40 percent—130 million lb/yr—to approximately 450 million lb/yr.

24. *Sugar y Azucar*
"CENTRAL AMERICA," vol. 71, no. 9, Sept. 1976, pp. 33-81.

This issue centers on a description of several sugar producing areas in Central America: Panama, Belize, Costa Rica, El Salvador, and Guatemala.

25. *Sugar Journal*
"PIONEERS IN THE HISTORY OF BMA FROM 1853-1976," vol. 39, no. 4, Sept. 1976, pp. 30-32.

Publisher's note: This article is a continuation of articles concerning pioneers in the sugar industry who have contributed to the development of sugar processes or equipment over a long period of time.

26. Sund, K. A., Cowley, W. R., Smith, B. A., and Freeman, K. C.
"SWEET SORGHUM VARIETIES FOR SUGAR PRODUCTION IN SOUTH TEXAS," *Sugar Journal*, vol. 39, no. 3, Aug. 1976, pp. 41-43.

Extensive tests and studies with sweet sorghum for sugar production in the Lower Rio Grande Valley of Texas have been conducted since 1961. This article describes the success that plant breeders have had in developing improved varieties for cane tonnage and sugar production.

27. *The U. and I. Cultivator*
"NITRATE MANAGEMENT FOR HIGHER SUCROSE," vol. 36, no. 2, Summer 1976, pp. 22-24.

The article emphasizes the importance of making sure the crop has the "right" amount of nitrogen. Too much nitrogen forces sucrose

out of the beet root and converts it into tissue. By harvest impurities will have increased in the beets. Thus, it is harder for the factory to extract what sugar remains.

28. U.S. Department of Agriculture
Crop Production, Crop Reporting Board, Statistical Reporting Service, October 12, 1976, Washington, D.C.

Indicates area harvested, yield per acre, production 1974-76 for various agricultural crops including sugar beets and sugarcane. (Copies may be obtained from: SRS Publications—USDA, Room 0005, South Building, Washington, D.C. 20250, (202) 447-7687.

29. Volpe, Theresa and Meres, Carol
"USE OF HIGH-FRUCTOSE SYRUPS IN WHITE LAYER CAKE," *The Bakers Digest*, vol. 50, no. 2, April 1976, pp. 38-41.

This study was designed to investigate the use of high levels of high fructose corn syrup in white, shortened, layer cakes. A high acid leavening system was developed and its effects on product characteristics were studied. The most severe problem in the use of high-fructose corn syrup in white layer cakes is product browning.

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