

**HAWAIIAN SUGAR
MANUAL**

FOR

1975

A HANDBOOK

OF

STATISTICAL INFORMATION

RELATING TO THE

SUGAR INDUSTRY

OF THE HAWAIIAN ISLANDS



**THE HAWAIIAN SUGAR
PLANTERS' ASSOCIATION**

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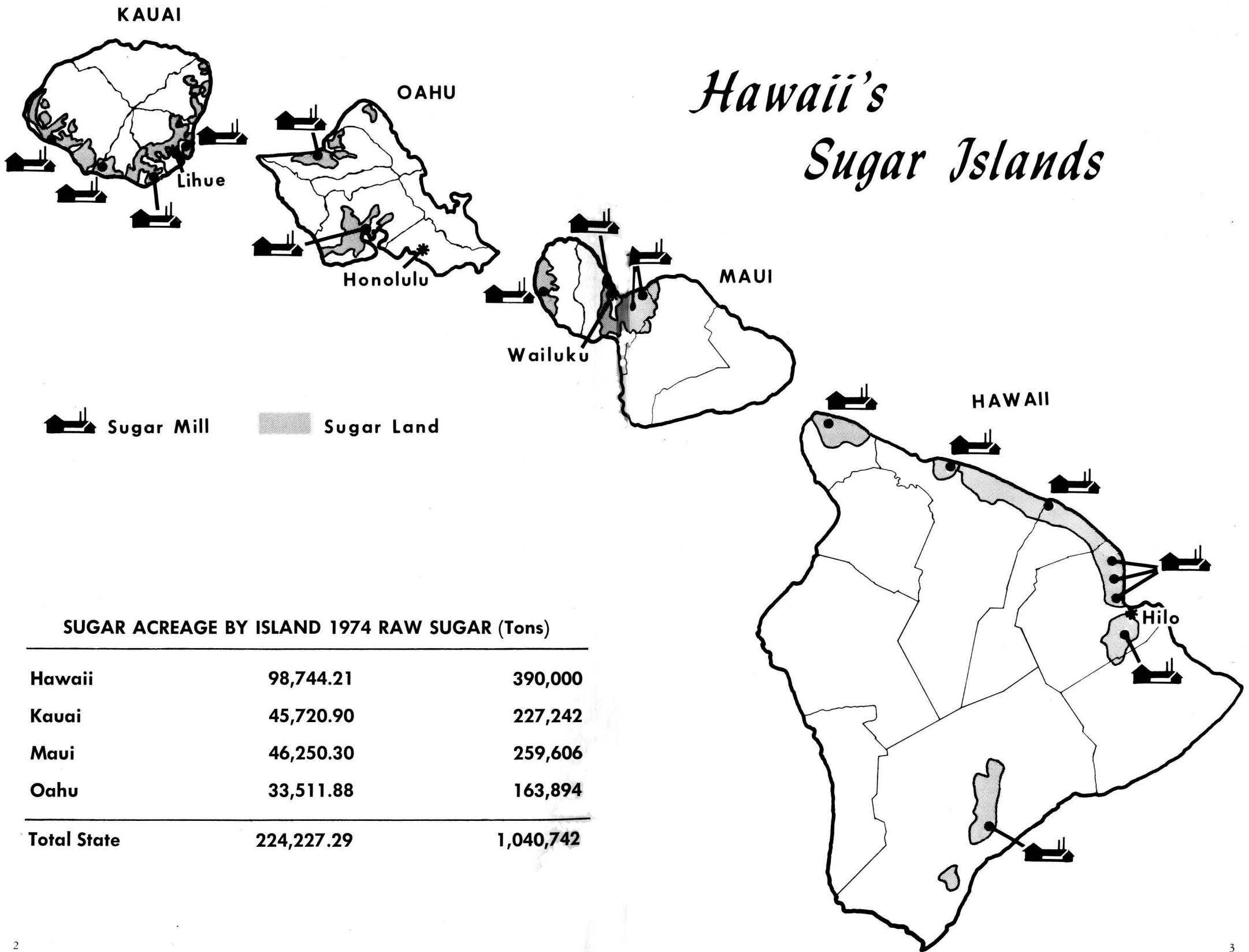
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Footnote: Numbers indicate sugar companies represented. See sugar company directory, page 2. Asterisk indicates those board members serving on HSPA Executive Committee.

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Hawaii's Sugar Islands



HAWAIIAN SUGAR COMPANIES

ISLAND OF KAUAI

GAY & ROBINSON
Makaweli, Kauai 96769
Phone: 338-8233

KEKAHA SUGAR CO., LTD.¹
L. A. Faye, Jr., *Exec. V.P.*
Kekaha, Kauai 96752
Phone: 337-1472

THE LIHUE PLANTATION COMPANY, LTD.¹
D. W. Ballie, Jr., *Exec. V.P., Mgr.*
Lihue, Kauai 96766
Phone: 245-2112

MCBRYDE SUGAR CO., LTD.³
P. F. Conrad, *V.P., Mgr.*
Eleele, Kauai 96705
Phone: 335-5333

OLOKELE SUGAR CO., LTD.⁴
R. F. Cameron, *Mgr.*
Kaumakani, Kauai 96747
Phone: 335-5337

ISLAND OF OAHU

OAHU SUGAR CO., LTD.¹
J. T. Humme, *Pres., Mgr.*
Waipahu, Oahu 96797
Phone: 677-3577

WAIALUA SUGAR CO., INC.²
W. W. Paty, Jr., *Pres., Mgr.*
Waialua, Oahu 96791
Phone: 637-4520

ISLAND OF MAUI

HAWAIIAN COMMERCIAL & SUGAR COMPANY³
W. S. Haines, *Mgr.*
Puunene, Maui 96784
Phone: 877-0081

PIONEER MILL CO., LTD.¹
W. G. Hall, *Pres., Mgr.*
Lahaina, Maui 96761
Phone: 661-0592

WAILUKU SUGAR COMPANY⁴
I. W. Bowman, *V.P., Mgr.*
Wailuku, Maui 96793
Phone: 244-9570

ISLAND OF HAWAII

HILO COAST PROCESSING CO.*
D. J. Martin, *Pres., Gen. Mgr.*
Pepeekeo, Hawaii 96783
Phone: 963-6211

HONOKAA SUGAR COMPANY^{7****}
P. E. Bouvet, *Mgr.*
Haina, Hawaii 96709
Phone: 775-7261

KA'U SUGAR COMPANY, INC.^{4**}
J. H. Hewetson, *V.P., Mgr.*
Pahala, Hawaii 96777
Phone: 928-8311

KOHALA CORPORATION²
A. C. Stearns, *V.P., Mgr., Sugar Div.*
Hawi, Hawaii 96719
Phone: 889-6426

LAUPAHOEHOE SUGAR CO.⁵
F. C. Schattauer, *Mgr.*
Papaaloa, Hawaii 96780
Phone: 962-6314; 962-6244

MAUNA KEA SUGAR COMPANY, INC.^{4****}
H. M. Gomez, *V.P., Mgr.*
Papaikou, Hawaii 96781
Phone: 964-1025

PUNA SUGAR CO., LTD.¹
T. J. O'Brien, *Pres., Mgr.*
Keaau, Hawaii 96749
Phone: 966-9270

*Sugarcane milling company cooperatively owned by United Cane Planters Cooperative, and Mauna Kea Sugar Co.

**Hawaiian Agricultural Company and Hutchinson Sugar Co., Ltd. merged to form Ka'u Sugar Co., Inc.

***Paaauhau Sugar Co., Ltd. assets purchased by Honokaa Sugar Co. 12/31/72.

****Mauna Kea Sugar Co., Inc. merged with Pepeekeo Sugar Co. to form the Mauna Kea Sugar Co.

Part I

HAWAII'S SUGAR INDUSTRY

Although Hawaii had predominantly an agricultural economy for more than 100 years, events since World War II have changed the principal basis from agriculture to tourism and military expenditures.

In 1974, the Hawaiian economy received over \$1 billion in direct tourist expenditures and almost \$900 million in federal expenditures.

Sugar ranked third in income for the State, bringing in an estimated \$660 million.

Pineapple was the fourth largest income producer in the State and added about \$109 million to the local economy for the 1973-74 pack year.

Diversified agriculture in the State delivered an additional \$90 million worth of produce to markets in and out of Hawaii.

Because Hawaii must import most of her food and other essentials from the U.S. Mainland, the out-of-state shipments of sugar and fresh or canned pineapple products are important in the State's balance of trade.

SUGAR INDUSTRY

Hawaii's sugar industry is recognized as one of the world's leaders in sugar technology and production.

Sugarcane was growing in Hawaii when the Islands were discovered by Capt. James Cook in 1778. Although there may have been earlier attempts to produce sugar from the sugarcane, the first actually documented crushing of sugarcane was by a Spaniard, Don Francisco de Paula Marin in Honolulu in 1819. In March of that year he noted in his diary that he extracted juice from the sugarcane.

The first actual plantation in Hawaii was started in 1825 in Manoa on Oahu, but this venture failed.

In 1835, a plantation was started at Koloa on the island of Kauai, and these fields are still growing sugarcane today.

The first sugar was produced at the Koloa plantation in 1837 according to reports which showed 5,039 pounds of sugar and 400 gallons molasses sent out by ship.

Sugarcane plantations spread throughout the Kingdom of Hawaii. In 1886, production was 100,000 tons, the 250,000 ton mark was reached in 1897 and in 1908, production was 500,000 tons.

Production reached more than one million tons in the 1930-31 sugar year. In 1974, a total of 1,040,742 tons of sugar and 293,380 tons of molasses were produced in Hawaii.

GROWING SUGAR IN HAWAII

Hawaii's sugar industry is unique among the

sugarcane growing countries of the world. It is the only area where the average age of sugarcane is two years at the time of harvest.

Hawaii's sugar industry is one of the most highly mechanized in the world. Hand labor has been virtually eliminated.

The climate of Hawaii varies considerably. Tropic rain forests can be found within a few miles of desert conditions.

On some sugar lands average rainfall is as low as 15 inches a year. On others, the rainfall is as high as 212 inches a year. One sugar company reported that its mountain fields receive an average of 133 inches of rain a year while its fields near the ocean shoreline receive only about 20 inches.

Because of the lack of adequate rainfall in some areas, about half of Hawaii's sugar lands must be irrigated.

The irrigated fields produce about two-thirds of the total Hawaii sugar produced each year. Scientists and engineers are constantly seeking new and better ways to use the irrigation water such as the recently developed drip irrigation system. The water systems, including many miles of tunnels, dikes and ditches, were designed and built by the sugar companies without any governmental assistance or contributions.

PLANTING AND HARVESTING

Sugarcane is planted by using pieces of cane stalks as "seed." These seed pieces are cut from growing sugarcane.

Sugarcane is planted by machines which drop the sugarcane pieces in rows and then cover the pieces with soil.

About half of Hawaii's sugar lands are harvested each year. When sugarcane is harvested, it grows again from the old stubble left in the ground. From two to four ratoon crops are obtained from each original planting. Then the field is plowed again and replanted with new seed pieces.

The fields are burned before harvesting to get rid of the dried leaves matted in the fields. The burning does not harm the sugarcane stalks and it cuts down on the amount of useless leaves and trash that would otherwise be sent through the sugar mills. The burning also helps in pest control for the fields.

After the fields are burned, mechanical harvesters are used. These push the cane into windrows where giant grab cranes load the cane into tractor-trailers which haul the cane to the mill for processing into raw sugar.

Some plantations use a V-cutter, which has a v-shaped blade with a vertical cutting wheel at the front. The cane cut by this machine is also loaded with grab cranes after it is picked up and taken to the edge of the field.

Newer developments include mechanical har-

vesters now being used by some non-irrigated plantations. These harvesters cut the cane, chop it into short lengths and use forced air to blow much of the trash and soil from the cane. Engineers are seeking new ways in which cane can be harvested and cleaned more efficiently.

RAW SUGAR TO THE U.S. MAINLAND

Approximately 97 percent of all Hawaiian raw sugar is shipped to the U.S. Mainland for refining. The other three percent is processed at

the California and Hawaiian refinery in Aiea, Hawaii, for Hawaiian and Pacific Basin consumption.

All Hawaii raw sugar is transported in bulk form. The bulk sugar is loaded on ships from bulk terminals at Kahului, Maui; Hilo and Kawaihae, Hawaii; Honolulu, Oahu; and Nawiliwili on Kauai.

In 1974, the shipment of raw sugar from Hawaii to the mainland accounted for 58 vessel sailings.

SUGAR SHIP SAILS THE SEAS



The MV Sugar Islander, largest oceangoing bulk cargo carrier ever built in a U.S. shipyard, made its first visit to Hawaii in September 1973.

The \$17.3 million ship is under charter to California and Hawaiian Sugar Co. She carries Hawaii-produced raw sugar to the Mainland and returns to Hawaiian or other Pacific area ports with grains. The ship is 641 feet long and 77 feet wide at her widest point. She has a capacity of 28,115 long tons.

The Sugar Islander was built by Lockheed Shipbuilding and Construction Co.

**HAWAIIAN SUGAR COMPANIES BY ISLANDS, WITH ACREAGE AND PRODUCTION FOR 1974
(Raw Value)**

	<u>Total Caneland Acreage</u>	<u>Acreage Harvested</u>	<u>Production (short tons)</u>
HAWAII			
Hilo Coast Processing Co.	(Processor only)	(Cane processed and sugar pro- duced by HCPC)	118,427
Mauna Kea Sugar Co.	17,610.00	7,316.00	(85,393)
United Cane Growers Coop.	7,886.00	3,300.00	(33,034)
Honokaa Sugar Co.	16,132.00	6,503.00	70,132
Ka'u Sugar Co., Inc.	19,065.71	4,376.61	43,318
X Kohala Sugar Co.	4,295.00	4,474.35	28,782
Laupahoehoe Sugar Co.	18,627.50	7,620.02	78,707
Puna Sugar Co., Ltd.	15,159.00	5,707.60	50,251
TOTAL HAWAII	<u>98,744.21</u>	<u>39,298.76</u>	<u>390,000</u>
	75		
KAUAI			
Gay and Robinson	2,601.84	1,257.04	18,437
Kekaha Sugar Co., Ltd.	7,866.32	3,591.57	46,179
The Lihue Plantation Co.	17,437.09	7,796.06	71,436
McBryde Sugar Co., Ltd.	13,030.00	6,556.64	60,445
Olokele Sugar Co., Ltd.	4,785.65	2,372.12	30,745
TOTAL KAUAI	<u>45,720.90</u>	<u>21,573.43</u>	<u>227,242</u>
MAUI			
Hawaiian Commercial & Sugar Co.	31,440.50	15,012.70	181,970
Pioneer Mill Co., Ltd.	9,345.00	4,261.70	49,451
Wailuku Sugar Co.	5,464.80	2,461.40	28,185
TOTAL MAUI	<u>46,250.30</u>	<u>21,735.80</u>	<u>259,606</u>
OAHU			
Oahu Sugar Co., Ltd.	19,285.88	6,994.71	84,202
Waialua Sugar Co., Inc.	14,226.00	6,217.66	79,692
TOTAL OAHU	<u>33,511.88</u>	<u>13,212.37</u>	<u>163,894</u>
TOTAL—ALL ISLANDS	<u>224,227.00</u>	<u>95,820.00</u>	<u>1,040,742</u>

→ 224,258.29

COMPARISON OF AVERAGE RAW SUGAR PRICE AND AVERAGE DAILY EARNINGS FOR NON-SUPERVISORY EMPLOYEES IN HAWAIIAN SUGAR INDUSTRY

	<i>Average New York Raw Sugar Price cwt. (Hawaiian Basis)*</i>	<i>Average Daily Earnings¹</i>
1935.....	\$3.23	\$1.699
1936.....	3.60	1.884
1937.....	3.45	2.074
1938.....	2.93	2.134
1939.....	2.98	2.170
1940.....	2.78	2.180
1941.....	3.39	2.479
1942.....	3.74	2.900
1943.....	3.74	3.590
1944.....	3.74	3.910
1945.....	3.75	5.100
1946.....	4.59	5.275
1947.....	6.22	7.632
1948.....	5.56	8.024
1949.....	5.81	8.040
1950.....	5.93	8.300
1951.....	6.06	9.000
1952.....	6.26	9.700
1953.....	6.29	10.200
1954.....	6.09	10.580
1955.....	5.95	10.62
1956.....	6.09	10.73
1957.....	6.25	11.20
1958.....	6.27	12.78
1959.....	6.24	12.84
1960.....	6.31	13.18
1961.....	6.30	14.11
1962.....	6.45	14.96
1963.....	8.20	16.68
1964.....	6.90	17.60
1965.....	6.75	18.40
1966.....	6.99	19.76
1967.....	7.28	21.35
1968.....	7.52	21.62
1969.....	7.75	23.26
1970.....	8.08	24.24
1971.....	8.52	26.08
1972.....	9.10	29.09
1973.....	10.30	30.86
1974 ¹	29.43	32.92

¹ Cash wage only. Does not include "employee benefits" which amounted to \$15.81 a day in 1974.

* Hawaiian basis is the average New York raw sugar price computed over all the days in the year. The New York price is computed for days the New York market is operating. Local sugar land leases are based on the Hawaiian basis rather than the New York basis.

WAGES, HOURS & WORKING CONDITIONS

Sugar company production employees work in 11 labor grades. Current (August, 1975) Grade 1 rate of pay is \$3.60 an hour. Grade 11 employees earn \$5.555 an hour. Work performed in excess of 40 hours is paid for at premium rates.

Hawaii's sugar industry provides year-round, long term employment for its workers. No migratory labor is employed. Sugar operations are conducted on a 12-month basis.

Production and maintenance employees at 16 of the State's 17 sugar companies are organized by the International Longshoremen's and Warehousemen's Union.

In 1974, the payroll for all Hawaii's sugar workers amounted to \$85,613,387.

DAILY AVERAGE EARNINGS IN 1974

Wages	\$32.92
Employee Benefits	15.81
Total	\$48.73

BONUSES PAID

Because of the unexpected and sudden rise of sugar prices in mid-1974 after the labor contract was signed between Negotiating Committees of ILWU Local 142 and the Sugar Companies, contract talks were resumed later in the year.

In November, the two Negotiating Committees reached a historic agreement which provided bonuses for sugar workers, a one-year extension of the labor contract to January 1977 and an additional wage increase for sugar workers. In December 1974, the sugar companies distributed bonuses amounting to approximately \$10 million to their employees. The bonuses were prorated and based on a \$1,000 average for each regular full-time bargaining unit employee on the payroll between November 1, 1973 and November 1, 1974. A similar bonus was scheduled for bargaining unit sugar workers in December 1975.

EMPLOYEE BENEFITS

Year-round employees receive up to four weeks vacation with pay, nine paid holidays a year; paid sick leave for up to 54 days plus a temporary disability supplement for extended illness, medical plan, a dental care plan for dependent children, retirement pensions, severance pay and many other benefits.

APPROXIMATE EMPLOYMENT BY OCCUPATION AT SUGAR COMPANIES

Factory	1,200
Field	3,000
Motive Equipment	1,550
Construction & Surveying	170
Clerical	270
Trades	1,390
Miscellaneous	350
Supervisors	1,070
Total	9,000

PRODUCTIVITY: HAWAII SUGAR FIELDWORKER

	WEIGHTED AVERAGE EARNINGS \$ PER HOUR			MAN-HOURS PER TON SUGAR Raw Value	WAGE COSTS \$ PER TON SUGAR** Raw Value
	Earnings	Benefits	Total		
1946	\$0.586	\$0.147	\$0.733	33.24	\$24.36
1950	1.089	.195	1.284	25.86	33.20
1951	1.127	.235	1.362	24.18	32.93
1952	1.204	.251	1.455	23.00	33.47
1953	1.303	.269	1.572	23.42	36.82
1954	1.372	.339	1.711	21.06	36.03
1955	1.448	.405	1.853	17.42	32.28
1956	1.469	.448	1.917	17.30	33.16
1957	1.538	.482	2.020	16.46	33.25
1958	1.597	.571	2.168	18.02	39.07
1959	1.753	.521	2.274	16.90	38.43
1960	1.794	.557	2.351	16.72	39.31
1961	1.919	.605	2.524	13.90	35.08
1962	2.003	.734	2.737	13.76	37.66
1963	2.100	.750	2.850	13.56	38.65
1964	2.308	.750	3.058	11.76	35.96
1965	2.436	.800	3.236	10.82	35.01
1966	2.617	.800	3.417	10.50	35.88
1967	2.784	.900	3.684	10.64	39.20
1968	2.836	1.050	3.886	9.98	38.78
1969	3.083	1.200	4.283	9.44	40.43
1970	3.248	1.250	4.498	9.50	42.73
1971	3.436	1.284	4.720	9.04	42.67
1972	3.722	1.404	5.126	9.22	47.26
1973	4.093	1.560	5.653	9.20	52.01
1974 ¹	4.12	1.92	6.10	9.32	63.38

**Including Earnings and Fringe Benefits.

Source: U.S.D.A.

¹1974 figures are HSPA Estimates. U.S.D.A. ceased supplying "weighted" figures based on fair price hearings.

TAXES AND LEASE RENTS

Sugar is one of the largest single taxpayers in Hawaii. In 1974, the State's sugar companies paid an estimated \$243,200,000 in State and Federal taxes. State taxes accounted for \$32 million of this sum, with Federal taxes hitting the \$210 million mark.

Lease rents paid by the sugar companies also contribute greatly to the local economy, because many of the acres used for sugarcane are leased from the State. It was estimated that in 1974, lease rentals totalled over \$53 million because of the unexpected high return for raw sugar. In 1973, the lease rent figure was slightly over \$5 million.

SUGAR LANDS

The Hawaiian Islands make up the union's fourth smallest state. The islands are actually the summits of a chain of volcanic mountains, some of which are still active. Only certain lowlands near the coasts are tillable because of the rugged terrain and the character of the soils. The balance is forest, pasture and wasteland.

Hawaii's sugar companies are located along

the coastlines of the four sugar islands and push upwards into the foothills and mountains. The companies have over 240,000 acres devoted to growing sugar in Hawaii, with about 16,000 acres in mill sites, roads, irrigation systems, etc., or uncultivated land. This is equal to about 6 percent of total land area and about 11 percent of total private land.

More than half of the sugar lands are owned by the sugar companies. The balance is leased from government or private owners.

ISLAND LAND AREAS WITH SUGAR

Island	Ex-treme Length Miles	Ex-treme Width Miles	Area		Total Cane Acreage**
			Square Miles*	Acres 000's	
Hawaii	93	76	4,038	2,584	98,744
Maui	48	26	729	466	46,250
Oahu	44	30	608	388	33,511
Kauai	33	25	553	354	45,720
Molokai	38	10	261	167	.....
Lanai	18	13	139	89	.....
Niihau	18	6	73	46	.....
Kahoolawe	11	6	45	28	.....
Minor Islands	.....	.....	4	2	.....
			6,450	4,128	224,225

* Includes land and inland water.

** Does not include mill sites, roads, etc.

HAWAII LAND OWNERSHIP

Government	Acres
Federal	355,769
State	1,584,715
Total	1,940,484
Private	2,187,779
Total	4,128,263

Source: The State of Hawaii Data Book 1974.

LAND TENURE

16 Sugar Companies & Independent Grower Farms/Adherent Planters

Land Used	Acres	Total Acres
By Sugar Companies	139,340	245,882
Owned in Fee Simple	106,545	
Leased		

Land Used By
Independent Grower Farms/
Adherent Planters

Leased from sugar companies	3,996
Sub-leased from sugar companies	2,356
Direct Ownership, or Leased from Other Sources	7,158
	13,510
Total	259,392

INDEPENDENT GROWERS

Number Grower Farms** .. 511

* Includes "attributable land": roads, reservoirs, mill sites and irrigation ditch systems (approximately 12,500 acres).

** Does not include Co-producers or Adherent Planters.

CANE SUGAR: PRODUCTION IN HAWAII

Production Year ¹ (Beginning Oct. 1st, Ending Sept. 30th)	Tons sugar per acre	Tons cane per ton sugar	Total cane land area	CANE USED FOR SUGAR			SUGAR PRODUCED		Raw value 96° sugar made per short tons of cane
				Acreage har- vested ²	Average yield per acre	Pro- duction	Converted to 96° raw value ³	Equivalent refined ⁴	
			Acres	Acres	Short Tons	Short Tons	Short Tons	Short Tons	Pounds
1908-1909.....	5.14	7.42	201,641	106,127	38.2	4,050,000	545,738	510,048	270
1909-1910.....	4.81	7.78	209,469	110,247	37.4	4,122,000	529,940	495,282	257
1910-1911.....	5.16	7.94	214,312	112,796	41.0	4,623,000	582,196	544,120	252
1911-1912.....	5.34	7.75	216,345	113,866	41.4	4,711,000	607,863	568,109	258
1912-1913.....	4.90	7.99	215,741	113,548	39.1	4,445,000	556,654	520,249	250
1913-1914.....	5.54	8.01	217,470	112,700	44.4	5,000,000	624,165	583,345	250
1914-1915.....	5.75	7.96	239,800	113,164	45.8	5,184,393	650,970	608,397	251
1915-1916.....	5.17	8.14	246,332	115,419	42.1	4,859,424	596,703	557,679	246
1916-1917.....	5.57	7.98	247,476	117,468	44.4	5,220,000	654,388	611,591	251
1917-1918.....	4.86	8.34	246,813	119,785	40.5	4,855,804	582,192	544,117	240
1918-1919.....	5.07	7.81	239,844	119,679	39.6	4,744,070	607,174	567,465	256
1919-1920.....	4.91	7.98	247,838	114,105	39.2	4,473,498	560,379	523,730	251
1920-1921.....	4.83	8.53	236,510	113,056	41.2	4,657,222	546,273	510,547	235
1921-1922.....	4.98	8.23	228,519	124,124	41.0	5,088,062	618,457	578,010	243
1922-1923.....	4.85	8.23	235,134	114,182	39.9	4,559,819	554,199	517,954	243
1923-1924.....	6.42	7.91	231,862	111,581	50.7	5,661,000	715,918	669,097	253
1924-1925.....	6.47	8.06	240,597	120,632	52.2	6,297,000	781,000	730,000	248
1925-1926.....	6.58	8.07	237,774	122,309	53.1	6,495,686	804,644	752,020	248
1926-1927.....	6.68	8.41	234,809	124,542	56.1	6,992,082	831,648	777,258	238
1927-1928.....	7.00	8.37	240,769	131,534	58.6	7,707,330	920,887	860,661	239
1928-1929.....	7.16	8.05	239,858	129,131	57.7	7,447,494	925,140	864,636	248
1929-1930.....	7.02	8.36	242,761	133,840	58.7	7,853,439	939,287	877,858	239
1930-1931.....	7.43	8.33	251,533	137,037	61.9	8,485,183	1,018,047	951,467	240
1931-1932.....	7.57	8.38	251,876	139,744	63.4	8,865,323	1,057,303	988,155	239
1932-1933.....	7.34	8.05	254,563	144,959	59.1	8,566,781	1,063,605	994,045	248
1933(Oct.1-Dec.31)							127,317	118,990	
1934*	7.14	8.33	252,237	134,318	59.5	7,992,260	959,337	896,596	240
1935.....	7.82	8.67	246,491	126,116	67.8	8,555,424	986,849	922,309	231
1936.....	7.97	8.80	245,891	130,828	70.1	9,170,279	1,042,316	974,149	227
1937.....	7.46	9.32	240,833	126,671	69.5	8,802,716	944,382	882,619	215
1938.....	6.92	9.39	238,302	135,978	65.0	8,835,370	941,293	879,732	213
1939.....	7.18	8.66	235,227	138,440	62.2	8,609,543	994,173	929,154	231
1940.....	7.16	8.76	235,110	136,417	62.7	8,557,216	976,677	912,802	228
1941.....	7.24	9.04	238,111	130,768	65.5	8,559,797	947,190	885,244	221
1942.....	7.58	9.10	225,199	114,745	69.0	7,918,342	870,099	813,195	220
1943.....	7.79	9.24	220,928	113,754	71.9	8,185,400	885,640	827,719	216
1944.....	7.99	8.95	216,072	109,522	71.5	7,832,185	874,947	817,725	223
1945.....	7.96	8.98	211,331	103,173	71.4	7,371,158	821,216	767,509	223
1946.....	8.06	8.83	208,376	84,379	71.1	6,002,127	680,073	635,596	227
1947.....	7.72	9.11	211,624	113,020	70.3	7,942,216	872,187	815,146	220
1948.....	8.35	9.03	206,550	100,042	75.4	7,542,613	835,107	780,491	221
1949.....	8.76	8.44	213,354	108,794	73.9	8,045,941	955,890 ⁵	893,375	238
1950.....	8.78	8.51	220,383	109,405	74.7	8,174,821	960,961 ⁶	898,114	235
1951.....	9.09	8.51	221,212	109,494	77.4	8,477,201	995,759	930,636	235
1952.....	9.44	8.52	221,990	108,089	80.4	8,693,920	1,020,450	953,712	235
1953.....	10.15	8.19	221,542	108,337	83.1	9,003,967	1,099,316	1,027,421	244
1954.....	10.02	8.75	220,138	107,480	87.75	9,431,781	1,077,347	1,006,889	228
1955.....	10.74	8.66	218,819	106,180	92.94	9,867,978	1,140,112	1,065,525	231
1956.....	10.28	9.01	220,606	106,956	92.65	9,909,990	1,099,543	1,027,633	222
1957.....	10.16	8.71	221,336	106,742	88.51	9,447,647	1,084,646	1,013,710	230
1958.....	9.09	9.87	221,683	84,136	89.77	7,552,750	764,953	714,925	203
1959.....	8.83	9.66	222,588	110,371	85.31	9,416,225	974,632	910,891	207
1960.....	9.03	9.20	224,617	103,584	83.15	8,613,317	935,744	874,546	217
1961.....	10.09	8.78	227,027	108,320	88.58	9,595,342	1,092,481	1,021,033	228
1962.....	10.31	8.76	228,926	108,600	90.36	9,812,580	1,120,011	1,046,762	228
1963.....	10.25	9.12	231,321	107,436	93.39	10,033,969	1,100,768	1,028,777	219
1964.....	10.64	8.90	233,145	110,759	94.76	10,495,175	1,178,770	1,101,678	225
1965.....	11.11	8.82	235,576	109,600	97.97	10,737,507	1,217,667	1,138,033	227
1966.....	11.12	8.89	237,499	111,005	98.82	10,969,925	1,234,121	1,153,409	225
1967.....	10.65	9.27	239,813	111,837	98.74	11,045,949	1,191,042	1,113,148	216
1968.....	10.85	9.15	242,476	113,525	99.36	11,279,920	1,232,182	1,151,597	218
1969.....	10.44	9.17	242,216	113,232	95.73	10,839,272	1,182,414	1,105,060	218
1970.....	10.21	9.00	238,997	113,816	91.88	10,457,377	1,162,071	1,086,000	222
1971.....	10.62	8.69	232,278	115,810	92.26	10,685,019	1,229,976	1,149,510	230
1972.....	10.32	8.87	229,611	108,456	91.55	9,929,068	1,118,883	1,045,708	225
1973.....	10.43	8.55	226,580	108,189	89.15	9,645,452	1,128,529	1,054,723	234
1974.....	10.86	8.73	224,227	95,826	94.76	9,082,684	1,040,742	972,677	229

1. From 1908-1933 acreage harvested represents summation of plantation crop years and does not necessarily correspond to the period Oct. 1 to Sept. 30.

2. The average growth of a crop is from 22 to 24 months. Only a portion of the total acreage in cane is harvested each year.

3. Converted in accordance with Sugar Regulations, Series 1, No. 1, U.S. Department of Agriculture, Agricultural Adjustment Administration, issued February 18, 1935, or Section 101(h) of

the Sugar Act of 1948 or corresponding provisions of its predecessors, as the case may be.

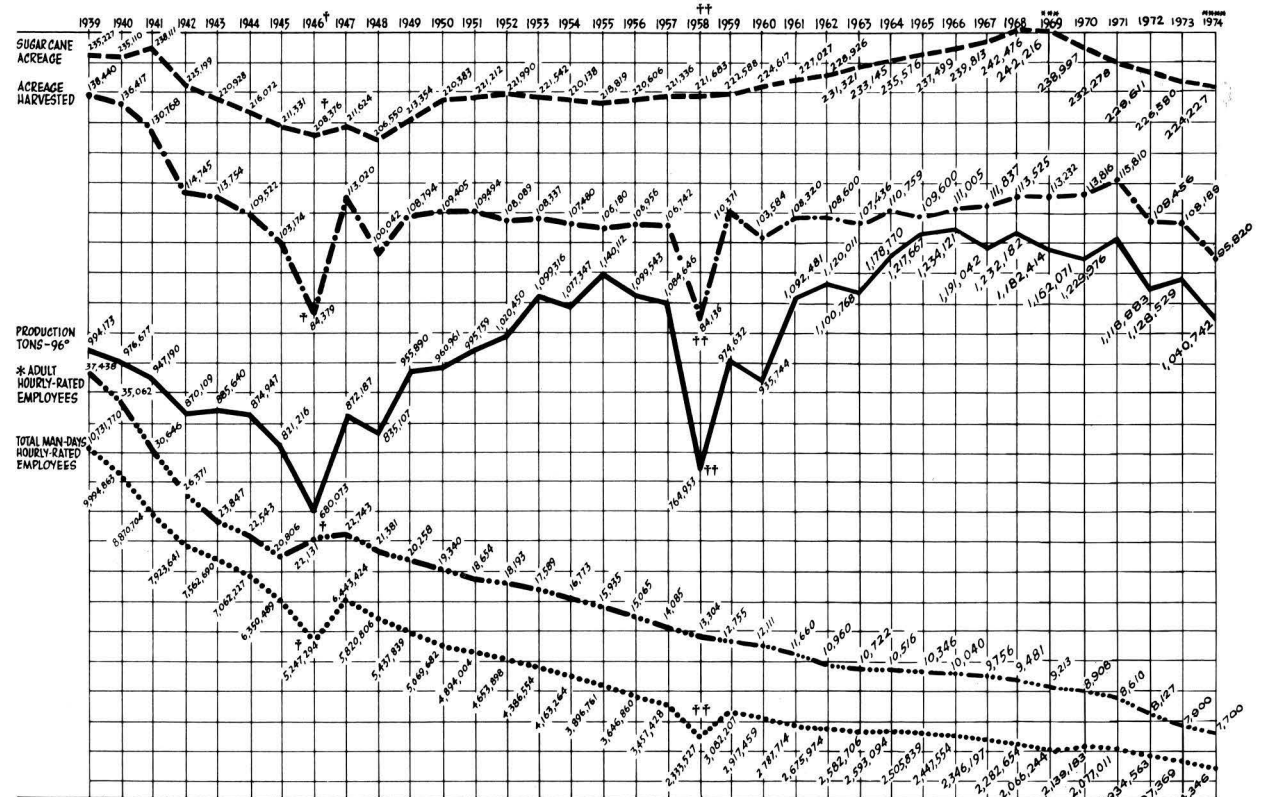
4. 1 ton of sugar, 96° test is assumed to be equivalent to 0.9346 tons of refined.

5. Includes 2,369 tons raw sugar produced from volunteer cane for which no acreage shown.

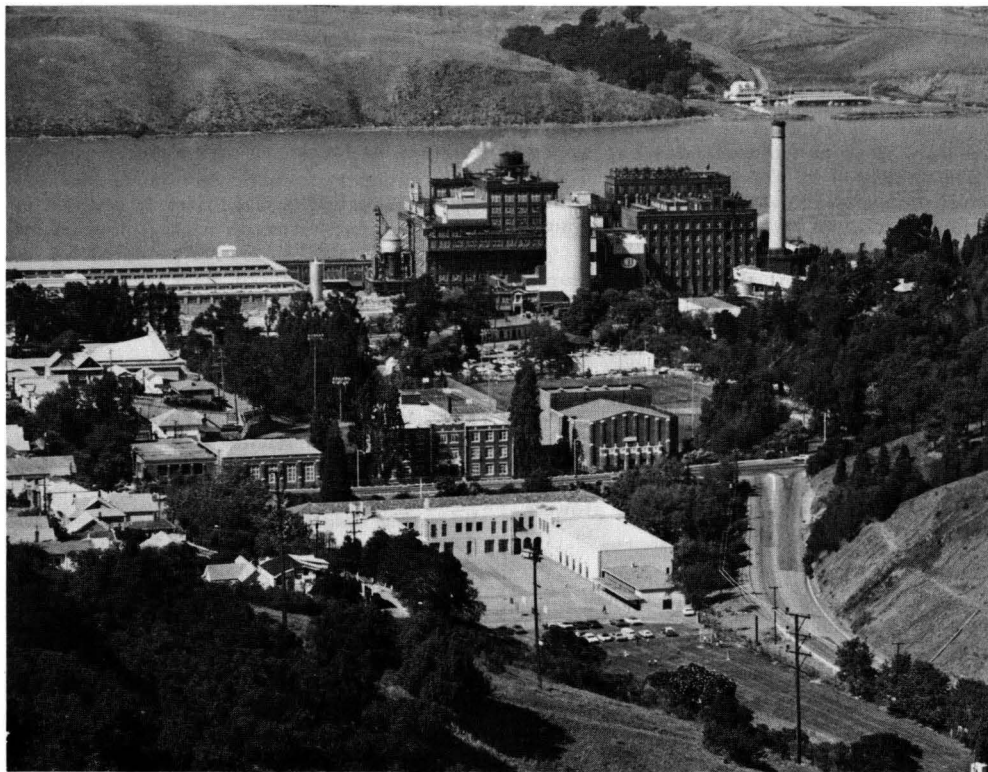
6. Includes 2,690 tons raw value sugar produced from volunteer cane for which no acreage shown.

*Begin Calendar Year Basis.

**COMPARISON:
SUGARCANE ACREAGE,
ACREAGE HARVESTED,
PRODUCTION, AVERAGE
NUMBER OF ADULT
HOURLY RATED
EMPLOYEES, AND
TOTAL MAN-DAYS
HOURLY-RATED
EMPLOYEES ON
HAWAIIAN SUGAR
PLANTATIONS**



* PRIOR TO 1947 INCLUDED ONLY MALE ADULTS
 † 1946: INDUSTRY-WIDE STRIKE, 2 1/2 MONTHS
 †† 1958: INDUSTRY-WIDE STRIKE, 4 MONTHS
 ††† 1959: INDUSTRY-WIDE STRIKE, 5 WEEKS
 *** 1974: INDUSTRY-WIDE STRIKE, 6 WEEKS



C and H refinery at Crockett on San Francisco Bay is one of world's largest with daily melt capacity of 4,000 tons. C and H markets all of Hawaii's raw sugar production.

HAWAIIAN SUGAR PLANTERS' ASSOCIATION

The Hawaiian Sugar Planters' Association was established in 1895 replacing the Planters' Labor and Supply Company which had been in existence since 1882.

The Association is a nonprofit, agricultural organization of sugar companies and individuals united for the purposes of maintenance, advancement and protection of the sugar industry in Hawaii, the support of a scientific experiment station and the development of agriculture in general.

The HSPA is governed by a board of directors drawn from members-companies of the Association. The president, who serves for one year, is elected from among the board members.

The following principal committees represent the major activities of the Association: Accounting, Industrial Relations, Insurance, Land, Legislative, Growers', Tax, Experiment Station Advisory, and Environmental Standards.

The HSPA acts as a clearing house for all scientific activities of the industry, making possible the utilization of the best technical knowledge available.

The Experiment Station of the Hawaiian Sugar Planters' Association also was established in 1895. The cost of operating this scientific research organization, over \$2,000,000 a year, is borne in full by the HSPA, with each sugar company paying a pro-rata share of the total.

The Station has developed many new varieties of sugar cane particularly suitable for the Hawaiian soil and climate, has kept insect pests and plant diseases at a minimum, and has contributed generally to the high yield of Hawaiian cane areas. Its research and services have benefited all agriculture in Hawaii. The Station maintains substations on all of the four sugar producing islands.

The HSPA maintains an office in Washington, D.C., which represents the industry in all of its government relationships, in contacts with other elements of the domestic industry, and acts as general representative of the industry on the mainland.

REFINING AND MARKETING HAWAII'S CANE SUGAR

California and Hawaiian Sugar Company, San Francisco markets all the raw cane sugar and molasses produced in the state of Hawaii. It is

the nation's second largest marketer of refined sugar and is the only U.S. refined cane sugar producer west of the Texas Gulf Coast.

ORGANIZATION

Best known by its brand name, "C and H", the company is an agricultural marketing association as defined by the Capper-Volstead Act, which authorizes formation of cooperative marketing associations by producers of agricultural products.

C and H stock is owned by 16-member sugar producing companies in Hawaii in substantially the same proportions as the tonnage each markets through the association.

The company also serves as refining and marketing agency for some 511 independent non-member sugarcane farmers in Hawaii.

All proceeds of sugar and molasses sales, less only authorized costs of operation, are returned to member companies and sugarcane growers represented by C and H.

HISTORY

In 1906 Hawaiian producers, representing more than 80 per cent of the islands' production, acquired a refinery at Crockett, California and formed C and H to compete for sales in the U.S. refined sugar market. Their's was a successful effort to overcome price discrimination against Hawaiian raw sugar practiced by a "sugar trust" which existed among mainland sugar refiners at that time.

Originally a commercial corporation, C and H was reorganized along cooperative lines in 1921. Since 1948 it has marketed Hawaii's entire cane sugar and molasses output.

OPERATIONS

C and H accepts Hawaii's production for shipment to the mainland at island terminals. It has capacity in its two refineries to refine about 1 million tons of raw sugar annually. Raw sugar not required for C and H refining operations is sold to Gulf and East Coast refiners. Molasses is sold by C and H to distributors primarily for use in animal feed.

REFINERIES

The C and H refinery at Crockett, California near San Francisco, which began operations in 1906, has been developed until it is acknowledged as the largest in the world. It has capacity to melt some 960,000 tons of raw sugar annually.

A smaller C and H refinery at Aiea near Honolulu can process about 40,000 tons of raw sugar a year, primarily to supply Hawaii's refined sugar requirements.

Raw sugar is delivered from Hawaii to Crockett in bulk cargo ships carrying from 12,000 to 31,000 tons of raw sugar per voyage. Raw sugar is mechanically discharged into re-

finery storage bins which have capacity for more than 100,000 tons.

PRODUCTION

The Crockett refinery operates the year around, three shifts a day in 10-day production cycles, followed by four-day shut-downs.

Refined sugars are produced in more than 100 types, grades and package sizes. In addition to an unsurpassed variety of packaged sugars for the grocery trade, sugars are produced for industrial use in packaged, bulk granulated and liquid form. High speed packaging equipment can turn out more than a million consumer-size packages of refined sugar daily.

STORAGE AND DISTRIBUTION

The refinery warehouse has capacity for 50,000 tons of packaged refined sugar. Shipments of packaged sugar move to customers by rail, truck and river boat.

Increasing volumes of industrial sugar are delivered to food processors in bulk in granulated or liquid form. C and H operates terminals for storage and distribution of bulk granulated and liquid industrial sugars at Crockett, Aiea, Seattle, Washington; Portland, Oregon; Los Angeles, California and Phoenix, Arizona.

MARKETING

Branded C and H sugars are sold in two-thirds of the mainland, generally those states west of the Mississippi River Valley extending from the Canadian to the Mexican borders, as well as Hawaii and Alaska. Sugars packaged for grocery sales under the "C and H" trademark are more widely distributed in this region than any other brand.

Competition for refined sales among C and H, beet sugar producers, southern and eastern cane refiners is intense in this region. A majority of the nation's 54 beet sugar factories are located in the 11 western states, which, due to freight costs, constitute the best market for C and H.

Marketing is carried out through C and H sales offices in San Francisco, Oakland and Los Angeles, California and through sugar brokers with offices in major cities throughout the balance of the territory served.

GENERAL

Over the past decade, annual C and H sales have averaged about \$307 million, and have returned an average of more than \$231 million annually to Hawaii's producers. The company employs approximately 1,600 persons in mainland operations and has about 70 employees at the Aiea refinery. Payroll totals approximately \$24 million annually.

James H. Marshall is President and Chief Executive Officer of C and H. Company headquarters are at One California Street, San Francisco, 94106.

IMPORTANT HISTORICAL DATES

- 1825 First sugarcane plantation attempted in Manoa Valley, Oahu.
- 1835 Ladd & Company founded first successful plantation, Koloa on Kauai.
- 1837 First Koloa sugar, 2.1 tons.
- 1838 Twenty sugar mills in operation, 18 animal powered, 2 water.
- 1852 Arrival of first Chinese laborers. First sugar centrifugal introduced, Makawao Plantation.
- 1853 First steam engine, Koloa.
- 1857 Irrigation introduced, Lihue.
- 1859 First steam mill, Lihue.
- 1860 Judd and Wilder established first mill on Oahu, Kualoa Plantation.
- 1863 Pepeekeo introduced vacuum pan.
- 1868 First Japanese laborers arrived.
- 1876 Reciprocal trade treaty, Kingdom of Hawaii and United States, admitted sugar duty free. Alexander & Baldwin built Hamakua Ditch at cost of \$80,000, first large-scale irrigation on islands, 17 miles long and producing 40,000,000 gallons a day.
- 1878 Portuguese immigrants arrived.
- 1879 Ewa drilled first artesian well; Onomea pioneered with commercial fertilizer.
- 1881 German immigrants arrived at Lihue; Hamakua bought first steam plow.
- 1882 Planters' Labor & Supply Co. organized.
- 1895 Planters' Labor and Supply Co. dissolved and members immediately organized as Hawaiian Sugar Planters' Association. HSPA Experiment Station started and first chemist hired. Makee inaugurated night grinding.
- 1886 First 100,000-ton crop.
- 1895 Experiment Station founded; Ewa installed 9-roller mill.
- 1897 First 250,000-ton crop.
- 1898 Hawaii annexed to United States.
- 1904 Leaf hopper parasites introduced from Australia.
- 1905 H-109 variety of cane germinated from seedling.
- 1906 California & Hawaiian Sugar Refining Corp. founded; Filipino immigration.
- 1907 Oahu Sugar Co. installed first 12-roller mill.
- 1910 Kilauea introduced gasoline tractor. Cane borer parasite introduced from New Guinea.
- 1916 *Anomala* beetle parasite introduced from the Philippines.
- 1920 Leaf hopper completely controlled by egg-sucking parasite introduced from Australia and Fiji.
- 1922 First commercial-scale mechanical loading of cane by self-propelled vehicle.
- 1923 First Dorr Clarifiers (2 factories).
- 1924 First of series of ten consecutive record crops.
- 1926 First Oliver Filter, Oahu Sugar Company.
- 1928 Establishment of sugarcane quarantine station on Island of Molokai.
- 1932 First million-ton crop; *bufo marinus*, insectivorous frog, brought to Territory to control pests.
- 1934 First high-speed sugar centrifugals—Waialua.
- 1935 Long-line irrigation widely adopted by plantations.
- 1936 First major use of trucks for cane hauling. HSPA insect and plant disease quarantine started on Midway Island.
- 1937 Expedition to New Guinea to collect wild sugarcanes for breeding. Mechanical harvesting begun at Ewa Plantation. Development of "prebaiting" technique of rat control. Research on food yeast from molasses. Mechanical harvesting by "grabs" started—Ewa Plantation.
- 1940 Kaiwiki Sugar Co. was first plantation in Hawaii to transport 100 percent of its cane to mill by trucks.
- 1941 32-8560 displaces H-109 as leading variety. First precision refractometer for factory control.
- 1942 New armyworm parasite brought from Texas. Plantation operations subordinated to defense requirements. War brings acute shortage of labor and equipment, resulting in forced use of all known types of mechanization. First bulk sugar plant began operating at Kahului, Maui.
- 1945 Development of activated diesel oil emulsion for weed control. Organization of the Agricultural Engineering Research Department to consolidate and expand research development. HSPA furnished \$100,000 to finance University of Hawaii Agricultural Engineering Institute buildings and equipment. Ion exchange research started.
- 1946 Production reduced severely by two-and-a-half month strike.
- 1947 Plantation railroads rapidly being replaced with trucks. Field testing started on several types of cane cutters. Ion exchange pilot plant in operation.
- 1948 V-cutter and side-mounted cutter for unirrigated cane and 2-line cutter for

- irrigated cane developed. Chemical weed control with pre-emergence and contact herbicides used on all plantations.
- 1949 Second bulk sugar plant began operating at Hilo, Hawaii.
- 1950 First commercial models of HSPA-developed harvesting machines for both irrigated and unirrigated plantations put into operation at three plantations; third bulk sugar plant began operating at Nawiliwili, Kauai; aluminum flumes used on a field scale for irrigation and cane transport.
- 1951 By-products pilot plant installed at Oahu Sugar Co., Ltd.; direct-mounted cane cutter and infield transport machine for unirrigated plantations developed; 37-1933 replaces 32-8560 as leading cane variety; radioactive materials used in irrigation and fertilization experiments; 40-hour week for half the year established on plantations; first bulk raw sugar shipments made to east coast. Aerial fertilization began.
- 1952 Cane buggy adopted by Hilo-coast plantations.
- 1953 First commercial application of liquid nitrogen fertilizer (aqua ammonia) made at Ewa Plantation Co.; Kauai and Maui plantations hit hardest by one of the Territory's worst droughts.
- 1954 First industry-wide pension plan established; HSPA corrosion inhibitor developed; 124-acre arboretum deeded to the University of Hawaii; HSPA meteorologists participate in Project Shower, "warm" rainfall study.
- 1955 Bulk sugar storage-loading plant completed at Honolulu.
- 1956 California and Hawaiian Sugar Company celebrated its fiftieth anniversary. Total half-century production came to nearly 25 million tons of raw sugar refined.
- 1958 Four-month-long, industry-wide strike drastically reduced production.
- 1959 Tenth Congress of International Society of Sugar Cane Technologists held in Honolulu.
- 1960 Variety 44-3098 replaced 37-1933 as leading cane variety.
- 1961 Production, reduced for three years by the 1958 strike, returned to normal levels.
- 1962 Hakalau Sugar Company was merged into Pepeekeo Sugar Company, reducing the number of sugar companies to 25. Variety 50-7209 replaced 44-3098 as leading cane variety.
- 1964 First sugarcane diffuser began commercial operation at Pioneer Mill.
- 1966 Record raw sugar crop of 1,234,121 tons was produced.
- 1967 First commercial model of HSPA developed sugarcane drycleaner tested at Laupahoehoe Sugar Co.
- 1969 Five-week industry-wide strike over terms of new three-year contracts.
- 1970 First commercial sugarcane drycleaner installed at Paauhau Sugar Co. on Hawaii Island.
- 1971 Months-long West Coast Longshoreman's strike stops shipments to C&H, disrupts C&H marketing program, and creates raw sugar and molasses storage problems in Hawaii. Smut disease discovered on Oahu.
- 1972 Sub-surface and drip irrigation research intensified. Smut infection found on more than 5000 acres on Oahu. Molokai quarantine station closed. USDA agrees to undertake 2-year quarantine for Hawaii canes at Beltsville, Maryland.
- 1973 Smut testing of 8,000 varieties completed. Top two varieties, 50-7209 and 59-3775 remain uninfected. First temporary registration for chemical ripener for sugarcane obtained. Nearly 3,000 acres of furrow-irrigated lands converted to flat culture by installing drip irrigation. Harvesting methods field trials stepped up. Success obtained with HSPA rock-removal cane drycleaner tested at Pioneer Mill Company, Ltd. First voyage of new ship, Sugar Islander, leased by California and Hawaiian Sugar Co. to take Hawaii sugar to the Mainland. Grove Farm announced it was going out of sugarcane operations. Grove Farm sugarcane lands and leases were taken over by McBryde Sugar Co. and The Lihue Plantation Co.
- 1974 Variety 59-3775, developed by HSPA geneticists, became the most widely planted sugarcane within the State. Industry-wide strike closed all but Kohala Sugar Co. from March 9 through April 23. Plans were prepared for new HSPA facility in Aiea on same site as the C and H refinery. City of Honolulu took 3.4 mauka acres of Makiki HSPA site for a park.

Part II

U.S. SUGAR INDUSTRY

America's sugar needs are met by a variety of sources, both domestic and foreign. Including Hawaii, 25 states produce sugar. Other states, which do not produce sugar themselves, have sugar refineries.

Florida, Louisiana and Texas are at present the only U.S. mainland states which grow and process sugarcane. Texas—the first new sugarcane area in the U.S. in nearly 50 years—began production in 1973. The Commonwealth of Puerto Rico also grows and processes sugarcane.

Foreign raw sugar, all produced from sugarcane, is supplied by many countries. Virtually all of this sugar enters the U.S. through ports on the Gulf and East Coasts.

In 1974, American consumers and businesses consumed 11,237,140 tons of sugar. About half of it was domestically produced with the other half supplied by foreign producers.

BEET SUGAR INDUSTRY

About one-fourth of the sugar consumed in the U.S. in 1974 was produced from sugarbeets. Grown mostly by small farmers in 17 states, sugarbeets are sold under contract to 11 sugarbeet processing companies operating 55 factories in 15 states.

The first successful sugarbeet processing plant commenced operations near San Francisco, Calif. in 1870.

CANE SUGAR REFINING INDUSTRY

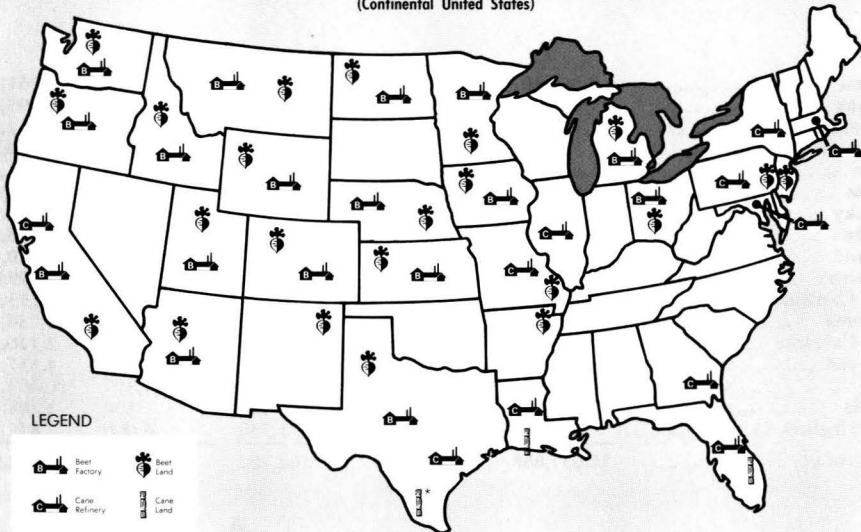
Approximately two-thirds of the sugar consumed in the United States is cane sugar refined in the continental United States. The nation's cane sugar refining industry consists of 23 refineries located principally on the East and Gulf Coasts with one large refinery near San Francisco. Smaller plants and distribution stations are operated principally in the South and Middle West.

Cane sugar refining is one of America's oldest industries, dating back to pre-Revolutionary times. Today, the industry represents a capital investment of almost \$500,000,000 in buildings, machinery, docks, land and other physical properties. It provides direct employment to more than 17,500 persons and has an annual payroll in excess of \$100,000,000.

Raw cane sugar supplies for the refineries are now obtained from practically all four corners of the globe with the domestic producing areas—Hawaii, Puerto Rico, and on the mainland, Louisiana, Florida, and Texas—contributing up to 40 percent. According to official statistics, the 1974 volume of melt was 8,140,692 tons.

Continued on Page 21

MAJOR SUGARCANE, SUGARBEET PRODUCING AREAS; & STATES REFINING SUGARCANE OR BEETS
(Continental United States)



*Starting 1973

**DELIVERIES OF SUGAR IN CONTINENTAL UNITED STATES
BY PRIMARY DISTRIBUTORS, CALENDAR YEAR 1974¹**

State and Region	Cane Sugar Refiners	Beet Sugar Processors	Importers	Mainland	Total
			of Direct-Consumption Sugar	Cane Sugar Mills	
Hundredweights ¹					
NEW ENGLAND					
Connecticut	1,125,122	.....	2,684	.....	1,127,806
Maine	554,452	.....	.....	.....	554,452
Massachusetts	4,822,024	.....	135,663	.....	4,957,687
New Hampshire	873,527	.....	.....	.....	873,527
Rhode Island	315,052	.....	400	.....	315,452
Vermont	235,920	.....	.....	.....	235,920
SUB-TOTAL	7,926,097	.....	138,747	.....	8,064,844
MID-ATLANTIC					
New Jersey	8,707,156	4,435	285,140	14,769	9,011,500
New York	14,784,411	243,176	285,550	47,742	15,360,879
Pennsylvania	13,314,994	171,088	242,480	31,633	13,760,195
SUB-TOTAL	36,806,561	418,699	813,170	94,144	38,132,574
NORTH CENTRAL					
Illinois	12,007,152	12,300,436	12,600	361,569	24,681,757
Indiana	4,292,221	1,017,680	3,153	71,545	5,384,599
Iowa	961,764	1,645,775	.....	.....	2,607,539
Kansas	654,642	1,182,101	.....	.....	1,836,743
Michigan	5,273,137	3,905,510	.....	.....	9,178,647
Minnesota	514,451	2,624,093	.....	.....	3,138,544
Missouri	3,806,540	1,481,037	.....	.....	5,287,577
Nebraska	329,855	1,607,602	.....	.....	1,937,457
North Dakota	18,607	353,324	.....	.....	371,931
Ohio	10,685,246	1,781,416	2,250	.....	12,468,912
South Dakota	27,141	272,624	.....	.....	299,765
Wisconsin	1,826,226	3,069,942	.....	.....	4,896,168
SUB-TOTAL	40,396,982	31,241,540	18,003	433,114	72,089,639
SOUTHERN					
Alabama	2,561,107	.....	.....	.....	2,561,107
Arkansas	1,136,573	58,428	.....	.....	1,195,001
Delaware	2,151,853	.....	.....	.....	2,151,853
District of Columbia	387,075	3,166	.....	.....	390,241
Florida	5,563,298	.....	17,472	520,331	6,101,101
Georgia	7,050,007	2,347	.....	3,100	7,055,454
Kentucky	2,390,300	20	.....	.....	2,390,320
Louisiana	4,044,968	.....	3,150	7,006	4,055,124
Maryland	5,107,306	.....	43,047	.....	5,150,353
Mississippi	1,398,406	.....	.....	1,481	1,399,887
North Carolina	4,157,116	2	30,041	6,291	4,193,450
Oklahoma	1,362,003	372,488	.....	.....	1,734,491
South Carolina	2,115,116	-(783)	2,534	.....	2,116,867
Tennessee	4,337,159	5	.....	.....	4,337,164
Texas	8,810,944	1,588,418	.....	4,399	10,403,761
Virginia	3,274,497	2,600	7,188	378	3,284,663
West Virginia	810,160	24,454	1,350	6,000	841,964
SUB-TOTAL	56,657,888	2,051,145	104,782	548,986	59,362,801

Continued Next Page

CONTINUED FROM PRECEDING PAGE—

Deliveries, Sugar, Continental U.S. by Primary Distributors

State and Region	Cane Sugar Refiners	Beet Sugar Processors	Importers	Mainland Cane Sugar Mills	Total
			of Direct-Consumption Sugar		
Hundredweights ¹					
WESTERN					
Alaska	29,357	2,905			32,262
Arizona	438,446	606,415			1,044,861
California	7,938,127	14,589,206	19,600		22,546,933
Colorado	209,800	1,601,791			1,811,591
Idaho	45,284	333,216			378,500
Montana	63,437	315,882			379,319
Nevada	46,545	79,577			126,122
New Mexico	76,540	238,257			314,797
Oregon	667,197	1,526,679			2,193,876
Utah	118,890	955,780			1,074,670
Washington	699,075	2,442,220			3,141,295
Wyoming	42,819	140,256			183,075
SUB-TOTAL	<u>10,375,517</u>	<u>22,832,184</u>	<u>19,600</u>		<u>33,227,301</u>
GRAND TOTAL	152,163,045	56,543,568	1,094,302	1,076,244	210,877,159

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

Source: Sugar Reports.

SUGAR DELIVERIES, BY TYPE OF PRODUCT OR BUSINESS OF BUYER AND BY TYPE OF SUGAR, CALENDAR YEAR 1974¹

Product or Business of Buyer	Beet (Total)	Cane (Total)	Imported		Liquid Sugar Included in Totals	
			D.C. (Total)	Total All Sugar	Beet	Cane
Hundredweights ²						
INDUSTRIAL						
Bakery, cereal and allied products	8,558,155	20,121,238	176,414	28,855,807	180,547	2,104,527
Confectionery and related products	5,603,096	14,702,115	68,289	20,373,500	164,791	2,737,301
Ice cream and dairy products	3,963,426	7,423,554	16,775	11,403,755	1,932,916	4,130,543
Beverages	10,537,785	36,446,342	7,774	46,991,901	5,803,294	19,292,747
Canned, bottled, frozen foods, jams, jellies and preserves	8,558,943	10,388,916	33,283	18,981,142	2,935,904	5,325,289
Multiple and all other food uses	2,740,005	7,492,512	45,443	10,277,960	244,241	1,924,051
Non-food products	413,996	2,135,653	7,470	2,557,119	49,928	886,351
SUB-TOTAL	<u>40,375,406</u>	<u>98,710,330</u>	<u>355,448</u>	<u>139,441,184</u>	<u>11,311,621</u>	<u>36,400,809</u>
NON-INDUSTRIAL						
Hotels, restaurants, institutions	162,108	1,636,320	12,992	1,811,420	18,279	79,878
Wholesale grocers, jobbers, sugar dealers ..	10,171,960	29,584,076	286,676	40,042,712	174,042	373,844
Retail grocers, chain stores, super markets	5,161,737	21,574,852	335,041	27,071,630	212,833	80,606
All other deliveries, including deliveries to Government agencies ..	653,667	1,662,302	104,588	2,420,557	27,033	40,090
SUB-TOTAL	<u>16,149,472</u>	<u>54,457,550</u>	<u>739,297</u>	<u>71,346,319</u>	<u>432,187</u>	<u>574,418</u>
TOTAL DELIVERIES	<u>56,524,878</u>	<u>153,167,880</u>	<u>1,094,745</u>	<u>210,787,503</u>	<u>11,743,808</u>	<u>36,975,227</u>
Deliveries in consumer-size packages (less than 50 lbs.)	9,918,359	41,415,794	282,786	51,616,939		
Deliveries in bulk (unpackaged)	24,340,329	42,054,502	716	66,395,547		

¹ Represents approximately 100 percent of deliveries by primary distributors in continental United States.

² Reported as produced or imported and delivered except liquid sugar which is on a sugar solids content basis.

**SUGARBEETS: ACREAGE, PRODUCTION, SEASON AVERAGE PRICE
PER TON RECEIVED BY FARMERS AND VALUE; PRODUCTION OF
BEET SUGAR AND MOLASSES PULP, UNITED STATES**

Year	Acres Planted	Acres Harvested	Average Yield Per Acre	Production	Price ¹	Farm value ²	Sugar produced (refined basis)	Molasses pulp
	1,000 acres	1,000 acres	Short tons	1,000 short tons	Dollars Per Ton	1,000 Dollars	1,000 short tons	1,000 short tons
1915.....	664	611	10.7	6,511	5.67	36,950	874	.....
1920.....	978	872	9.8	8,538	11.63	99,324	1,089	.....
1925.....	781	648	11.4	7,381	6.39	47,137	913	.....
1930.....	821	776	11.9	9,199	7.14	65,698	1,208	150
1935.....	809	763	10.4	7,908	5.76	45,565	1,185	125
1936.....	855	776	11.6	9,028	6.05	54,636	1,304	157
1937.....	813	753	11.6	8,759	5.26	46,101	1,283	166
1938.....	985	925	12.4	11,497	4.65	53,478	1,674	219
1939.....	993	918	11.7	10,781	4.76	51,342	1,641	175
1940.....	971	912	13.4	12,194	5.11	62,287	1,758	182
1941.....	796	755	13.7	10,342	6.43	66,522	1,488	176
1942.....	1,048	954	12.2	11,685	6.84	79,905	1,617	149
1943.....	619	550	11.9	6,547	8.81	57,674	935	92
1944.....	633	555	12.1	6,718	10.60	71,156	979	72
1945.....	775	713	12.1	8,616	10.20	87,539	1,191	121
1946.....	905	802	13.2	10,582	11.10	117,840	1,422	153
1947.....	968	879	14.2	12,503	11.80	148,080	1,719	203
1948.....	800	694	13.6	9,424	10.60	99,639	1,280	199
1949.....	768	687	14.8	10,196	10.80	110,369	1,461	204
1950.....	1,014	925	14.6	13,535	11.20	151,293	1,878	293
1951.....	758	691	15.2	10,482	11.70	122,483	1,448	231
1952.....	719	665	15.3	10,169	12.00	121,970	1,407	253
1953.....	794	745	16.2	12,084	11.60	140,364	1,697	324
1954.....	964	876	16.1	14,082	10.80	152,151	1,909	355
1955.....	798	740	16.5	12,228	11.20	136,477	1,625	354
1956.....	831	785	16.6	12,993	11.90	155,087	1,837	428
1957.....	918	880	17.7	15,530	11.20	174,261	2,050	480
1958.....	935	891	17.0	15,150	11.70	177,807	2,056	484
1959.....	955	905	18.8	17,015	11.20	191,186	2,187	591
1960.....	977	957	17.2	16,421	11.60	190,109	2,291	613
1961.....	1,129	1,077	16.4	17,704	11.20	197,547	2,247	712
1962.....	1,182	1,103	16.5	18,254	12.80	233,243	2,417	676
1963.....	1,285	1,235	18.9	23,328	12.20	285,011	2,893	1,004
1964.....	1,460	1,395	16.8	23,389	11.80	275,660	3,073	1,114
1965.....	1,314	1,249	16.8	20,915	11.95	249,836	2,705	989
1966.....	1,240	1,161	17.5	20,342	12.80	260,355	2,643	933
1967.....	1,197	1,122	17.1	19,197	13.55	260,114	2,464	923
1968.....	1,476	1,410	18.0	25,363	13.81	350,207	3,255	1,292
1969.....	1,647	1,541	18.0	27,736	12.72	352,863	3,112	1,359
1970.....	1,483	1,419	18.6	26,427	14.84	390,813	3,179	1,331
1971.....	1,406	1,342	20.2	27,096	15.40	416,279	3,320	1,383
1972.....	1,420	1,329	21.4	28,410	16.00	455,830	3,387	1,582
1973.....	1,280	1,218	20.1	24,499	29.60	725,661	2,990	1,198
1974.....	1,252	1,213	18.2	22,118	43.90 ¹	970,980 ¹	2,725	N.A.

¹Most years from 1915 to 1923 include a small unknown quantity of beets grown in Canada for Michigan factories.
²Basis of Crop Year including beets planted in previous fall in California and Arizona. ³Includes production incentive payments which were payments made to producers of sugarbeets and sugarcane by the Commodity Credit Corporation during the period of government price control in World War II, to stimulate production, but excludes Sugar Act payments. ⁴Preliminary. N.A.—Not available.
Source: Statistical Reporting Service, U.S. Department of Agriculture.

Continued from Page 17

The 16 operating companies and the location of their refineries are as follows:

SuCrest Corporation	Brooklyn, N.Y. Chicago, Ill. Charlestown, Mass.	Florida Sugar Refinery, Inc.	Belle Glade, Fla.
Amstar Corp.	Boston, Mass. Brooklyn, N.Y. Philadelphia, Pa. Baltimore, Md. Chalmette, La.	Glades County Sugar Grower Cooperative Assoc.	Moore Haven, Fla.
Supreme Sugar Co. Inc.	Supreme, La.	Godchaux-Henderson Sugar Co., Inc.	Reserve, La.
California and Hawaiian Sugar Co.	Crockett, Calif. Aiea, Hawaii	Imperial Sugar Co.	Sugar Land, Texas
Colonial Sugars Co.	Gramercy, La.	Industrial Sugars, Inc.	St. Louis, Mo.
Everglades Sugar Refinery, Inc.	Clewiston, Fla.	The National Sugar Refining Co.	Philadelphia, Pa.
		CPC International, Inc.	Yonkers, N.Y.
		Savannah Foods & Industries, Inc.	Port Wentworth, Ga.
		The South Coast Corp.	Mathews, La.
		Southdown, Inc.	Houma, La.

Source: United States Cane Sugar Refiners' Association.

U.S. BEET SUGAR DELIVERIES BY STATES Jan. 1-Dec. 31, 1974 & Jan. 1-Dec. 31, 1973

State	Jan. 1- Dec. 31 1974	Jan. 1- Dec. 31 1973	Increase (+) or Decrease (-)
(In bags of 100 pounds refined sugar)			
Alaska	2,905	11,375	- 8,470
Arizona	606,415	638,549	- 32,134
Arkansas	58,428	197,285	- 138,857
California	14,589,206	14,254,634	+ 334,572
Colorado	1,601,791	1,574,728	+ 27,063
Idaho	333,216	333,439	- 223
Illinois	12,102,285	15,458,146	-3,355,861
Indiana	1,017,680	1,893,671	- 875,991
Iowa	1,642,031	1,788,064	- 146,033
Kansas	1,182,101	1,246,572	- 64,471
Michigan	3,852,405	5,048,622	-1,196,217
Minnesota	2,620,330	2,655,195	- 34,865
Missouri	1,481,037	2,098,215	- 617,178
Montana	315,882	293,338	+ 22,544
Nebraska	1,584,988	1,589,330	- 4,342
Nevada	79,577	62,902	+ 16,675
New Mexico	238,257	250,440	- 12,183
New York	241,352	596,672	- 355,320
North Dakota	372,296	335,453	+ 36,843
Ohio	1,777,922	3,297,387	-1,519,465
Oklahoma	372,488	492,601	- 120,113
Oregon	1,526,679	1,466,991	+ 59,688
Pennsylvania	167,438	470,050	- 302,612
South Dakota	272,624	333,329	- 60,705
Texas	1,591,018	2,142,184	- 551,166
Utah	955,780	892,079	+ 63,701
Washington	2,442,220	2,262,746	+ 179,474
W. Virginia	24,454	27,518	- 3,064
Wisconsin	3,060,629	3,739,658	- 679,029
Wyoming	140,256	134,924	+ 5,332
All Other	9,192	54,273	- 45,081
TOTAL	56,262,882	65,640,370	-9,377,488

Source: U.S. Beet Sugar Association.

LOUISIANA—SUGAR PRODUCTION—ACREAGE—YIELD

Crop Year	Sugarcane Used for Sugar			Sugar Produced		Raw Sugar 96° made per ton of sugarcane (Pounds) ¹
	Acres harvested (1000 acres)	Average yield of cane per acre (Tons)	Production (1,000 tons)	Raw Value Basis ¹ (In thousands of short tons)	Equivalent refined ²	
1919-20.....	179	10.5	1,883	124	116	132
1920-21.....	183	13.6	2,493	173	162	139
1921-22.....	226	18.5	4,181	331	309	158
1922-23.....	242	15.6	3,778	301	281	159
1923-24.....	215	11.1	2,387	165	154	138
1924-25.....	163	7.5	1,228	90	84	147
1925-26.....	190	13.9	2,644	142	133	107
1926-27.....	128	6.8	864	48	45	111
1927-28.....	73	13.2	962	72	67	150
1928-29.....	130	14.3	1,860	135	126	145
1929-30.....	185	15.8	2,918	204	190	140
1930-31.....	175	14.6	2,559	188	176	147
1931-32.....	169	13.2	2,232	160	150	143
1932-33.....	208	13.9	2,886	228	213	158
1933-34.....	197	13.2	2,600	209	195	161
1934-35.....	222	14.3	3,164	234	219	148
1935-36.....	239	17.5	4,183	339	317	162
1936-37.....	227	21.4	4,854	386	361	156
1937-38.....	266	19.7	5,241	401	375	153
1938-39.....	272	21.5	5,859	491	459	168
1939-40.....	234	21.7	5,084	436	408	172
1940-41.....	211	13.8	2,923	234	219	160
1941-42.....	224	17.6	3,947	322	301	163
1942-43.....	269	17.6	4,734	397	371	168
1943-44.....	257	20.9	5,388	432	404	160
1944-45.....	246	20.0	4,929	369	345	150
1945-46.....	234	21.9	5,128	370	346	144
1946-47.....	255	17.6	4,484	331	309	148
1947-48.....	259	15.1	3,917	297	277	152
1948-49.....	274	19.2	5,257	393	367	150
1949-50.....	279	17.9	4,984	414	387	166
1950-51.....	273	19.5	5,312	451	421	170
1951-52.....	258	17.3	4,463	295	276	132
1952-53.....	274	20.7	5,667	451	422	159
1953-54.....	280	20.6	5,759	479	448	166
1954-55.....	247	22.8	5,625	478	447	170
1955-56.....	232	24.4	5,664	454	425	161
1956-57.....	203	23.7	4,817	429	401	178
1957-58.....	226	22.0	4,976	396	370	159
1958-59.....	219	22.0	4,869	443	414	182
1959-60.....	250	20.3	5,073	440	411	174
1960-61.....	255	21.9	5,583	470	439	169
1961-62.....	277	25.7	7,118	650	607	183
1962-63.....	254	20.9	5,315	472	441	178
1963-64.....	296	28.9	8,554	759	710	177
1964-65.....	325	22.7	7,383	573	536	155
1965-66.....	288	22.7	6,542	550	514	168
1966-67.....	288	22.7	6,563	562	526	171
1967-68.....	294	27.6	8,110	740	692	182
1968-69.....	282	26.1	7,377	669	625	181
1969-70.....	235	24.1	5,676	537	502	189
1970-71.....	266	26.1	6,927	602	563	174
1971-72.....	301	21.4	6,438	571	534	177
1972-73.....	311	25.8	8,022	660	617	165
1973-74.....	319	20.6	6,570	558	522	170
1974-75.....	308	21.3	6,558	594	555	181

¹ Production reported on 96° basis prior to 1934, raw value basis thereafter.

² Raw value multiplied by 0.9346.

Source: Agricultural Stabilization and Conservation Service, U. S. Department of Agriculture.

FLORIDA — SUGAR PRODUCTION — ACREAGE — YIELDS

Crop Year	Sugarcane Used for Sugar			Sugar Produced		Raw Sugar 96° made per ton of sugarcane (Pounds) ¹
	Acres harvested (1000 acres)	Average yield of cane per acre (Tons)	Production (1,000 tons)	Raw Value Basis ² (In thousands of short tons)	Equivalent refined ²	
1928-29.....	0.7	18.6	13	1	1	115
1929-30.....	7	30.1	202	14	14	143
1930-31.....	12	28.8	351	27	25	152
1931-32.....	13	22.3	292	24	22	164
1932-33.....	13	33.4	421	37	35	177
1933-34.....	14	32.6	469	41	38	177
1934-35.....	14	27.8	383	28	26	148
1935-36.....	14	34.5	486	43	40	176
1936-37.....	17	34.0	565	52	48	184
1937-38.....	19	33.0	634	58	54	183
1938-39.....	24	36.4	882	93	87	211
1939-40.....	20	35.5	714	70	65	197
1940-41.....	29	32.1	933	98	91	209
1941-42.....	31	30.7	944	94	88	198
1942-43.....	21	30.6	648	61	57	187
1943-44.....	27	25.7	699	65	60	185
1944-45.....	27	28.8	780	69	64	176
1945-46.....	31	33.2	1,041	100	93	192
1946-47.....	32	32.6	1,037	94	88	181
1947-48.....	35	26.7	921	80	75	173
1948-49.....	35	28.7	1,010	80	75	158
1949-50.....	37	30.8	1,126	105	98	186
1950-51.....	37	31.3	1,169	109	102	186
1951-52.....	39	32.4	1,260	122	114	195
1952-53.....	43	34.9	1,495	154	144	207
1953-54.....	45	32.6	1,453	151	141	207
1954-55.....	39	32.6	1,258	132	123	210
1955-56.....	35	33.4	1,160	118	110	204
1956-57.....	30	39.7	1,197	128	120	214
1957-58.....	33	41.7	1,358	135	126	201
1958-59.....	34	37.8	1,303	135	126	208
1959-60.....	46.4	38.2	1,771	175	164	198
1960-61.....	48.9	31.8	1,554	160	150	205
1961-62.....	56.2	36.2	2,036	208	194	204
1962-63.....	114.3	35.4	4,050	380	355	188
1963-64.....	142.5	31.2	4,446	424	396	191
1964-65.....	219.8	29.3	6,439	574	536	178
1965-66.....	185.4	29.1	5,505	554	518	201
1966-67.....	190.7	31.8	6,057	652	609	215
1967-68.....	190.6	34.3	6,542	717	670	219
1968-69.....	182.1	29.5	5,368	546	510	203
1969-70.....	153.4	33.8	5,197	535	500	205
1970-71.....	170.0	33.4	5,670	652	609	230
1971-72.....	189.9	31.7	6,022	635	593	211
1972-73.....	243.8	38.1	9,289	961	898	207
1973-74.....	257.6	31.5	8,119	824	770	203
1974-75*.....	262.2	28.5	7,482	793	741	212

* Preliminary.

¹ Production reported on 96° basis prior to 1934, raw value basis thereafter.

² Raw value multiplied by 0.9346.

Source: Agricultural Stabilization and Conservation Service, U. S. Department of Agriculture.

CANE SUGAR: PRODUCTION IN PUERTO RICO

Crop Year Ended	Acreage in Cane		Sugarcane Harvested		Sugar Produced, Raw Value	
	Grown	Harvested	Total	Per acre in cane harvested	Total	Per ton of cane harvested
	Acres	Acres	Tons	Tons	Tons	Pounds
1940.....	303,389	252,969	8,976,231	35.5	1,026,188	228.6
1945.....	335,791	288,617	7,994,229	27.7	970,751	242.9
1950.....	382,011	367,093	10,614,632	28.9	1,298,643	244.7
1955.....	439,035	361,053	9,872,968	27.3	1,166,026	236.2
1960.....	371,644	327,961	9,996,878	30.5	1,019,033	203.9
1962.....	342,525	308,644	9,663,265	31.3	1,008,496	208.8
1963.....	337,526	303,041	10,122,518	33.4	989,235	195.5
1964.....	329,090	303,142	9,802,223	32.3	989,438	201.9
1965.....	316,263	287,644	8,806,972	30.6	896,943	203.7
1966.....	304,550	272,844	9,465,009	34.7	883,442	186.7
1967.....	280,851	263,336	8,160,195	31.0	818,294	200.6
1968.....	257,173	237,143	6,590,296	27.8	645,466	195.9
1969.....	235,166	180,069	5,901,967	32.8	483,532	163.9
1970.....	226,666	188,775	5,890,755	31.2	460,159	156.2
1971.....	N.A.	153,427	4,581,535	29.9	324,187	141.5
1972.....	N.A.	152,436	4,381,801	28.7	298,095	135.7
1973.....	N.A.	132,077	3,620,833	27.4	255,174	140.9
1974.....	N.A.	121,600	3,585,222	29.5	291,120	162.4

Source: Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture. N.A.—Not available.

CANE SUGAR: PRODUCTION IN CUBA

Crop Year ¹	Acreage in cane		Sugarcane harvested		Raw sugar produced	
	Grown	Harvested	Per acre	Total ²	Total ³	Per ton of sugarcane ²
	1,000 acres	1,000 acres	Short Tons	1,000 short tons	1,000 short tons	Pounds
1920...	2,085	2,041	18.78	38,335	4,243	221
1925...	2,695	2,469	21.09	52,068	5,894	226
1930...	2,800	2,648	16.40	43,435	5,305	244
1935....	1,974	1,643	15.12	24,847	2,883	232
1940....	2,325	1,883	16.58	31,220	3,157	202
1945....	2,528	2,343	12.90	30,224	3,923	260
1950....	3,014	2,885	16.26	46,916	6,126	261
1955....	3,554	2,059	18.64	38,381	5,001	261
1960....	3,457	3,104	16.82	52,212	6,462	247
1962...	N. A.	N. A.	N. A.	N. A.	5,308	N. A.
1963....	N. A.	N. A.	N. A.	N. A.	4,211	N. A.
1964....	N. A.	N. A.	N. A.	N. A.	4,400	N. A.
1965....	N. A.	N. A.	N. A.	N. A.	6,600*	N. A.
1966....	N. A.	N. A.	N. A.	N. A.	6,200	N. A.
1967....	N. A.	N. A.	N. A.	N. A.	6,874*	N. A.
1968....	N. A.	N. A.	N. A.	N. A.	5,859*	N. A.
1969....	N. A.	N. A.	N. A.	N. A.	6,100*	N. A.
1970....	N. A.	N. A.	N. A.	N. A.	8,250*	N. A.
1971....	N. A.	N. A.	N. A.	N. A.	6,600*	N. A.
1972....	N. A.	N. A.	N. A.	N. A.	4,837*	N. A.
1973....	N. A.	N. A.	N. A.	N. A.	5,785	N. A.
1974....	N. A.	N. A.	N. A.	N. A.	6,393	N. A.

* International Sugar Council.

¹ Harvesting usually begins in January and extends through June. The length of the growing season is normally 12 months.

² Some years cane for invert molasses is included in the cane production.

³ Excludes liquid and green sugar.

N. A.—Not available.

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

CANE SUGAR: PRODUCTION IN THE PHILIPPINE ISLANDS

Crop Year ¹	Sugarcane				Sugar Produced			Molasses
	Acreage		Calculated production for centrifugal sugar		Centrifugal as made	Muscovada and Panocha	Centrifugal sugar made per ton sugarcane ⁵	Produced
	Total ²	Harvested for centrifugal sugar	Per acre ³	Total ⁴				
	1,000 acres	1,000 acres	Short tons	1,000 short tons	1,000 short tons	1,000 short tons	Pounds	1,000 gallons
1921.....	595	.....	.....	1,981	219	314	221	5,597
1923.....	561	.....	.....	2,717	325	204	239	786
1924.....	592	.....	.....	4,954	552	228	223	1,277
1925.....	573	.....	.....	3,445	408	200	237	1,568
1926.....	587	.....	.....	5,023	587	180	234	1,153
1927.....	586	.....	.....	5,483	635	173	232	2,959
1928.....	637	.....	.....	6,771	769	157	227	5,405
1929.....	640	417	17.63	7,351	867	117	236	6,675
1930.....	633	387	20.20	7,816	871	87	223	11,817
1931.....	625	458	21.36	9,781	1,100	74	225	11,407
1932.....	663	512	22.36	11,449	1,285	58	224	25,372
1933.....	756	559	25.67	14,350	1,598	55	223	68,166
1934.....	522	325	18.59	6,044	700	54	232	52,993
1935.....	620	425	19.05	8,095	979	64	242	46,740
1936.....	635	436	21.87	9,535	1,118	68	234	52,836
1937.....	563	453	20.53	9,302	1,055	61	227	49,955
1938.....	568	392	23.54	9,227	1,092	57	237	49,448
1939.....	590	412	21.35	8,810	1,044	63	237	50,578
1940.....	551	373	23.42	8,734	1,035	113	237	49,163
1941-44	not available							
1945.....	72	16	7.31	117	13	56	222	546
1946.....	101	48	15.96	766	85	54	222	3,579
1947.....	203	182	19.70	3,586	398	38	222	16,972
1948.....	319	297	20.74	6,160	730	35	237	31,165
1949.....	346	316	19.18	6,062	693	36	229	28,469
1950.....	417	382	21.41	8,177	935	51	229	37,988
1951.....	496	466	21.36	9,952	1,077	62	216	51,957
1952.....	547	517	20.21	10,477	1,134	68	217	50,312
1953.....	655	545	23.92	13,038	1,434	76	220	64,082
1954.....	661	528	23.71	12,516	1,372	58	219	62,421
1955.....	596	468	23.23	10,871	1,219	60	224	49,108
1956.....	580	444	22.39	9,941	1,143	73	230	41,812
1957.....	599	463	25.30	11,712	1,378	75	235	60,091
1958.....	623	484	27.82	13,467	1,512	78	225	68,184
1959.....	597	504	27.29	13,754	1,529	64	222	66,053
1960.....	584	525	24.64	12,941	1,563	70	241	63,194
1961.....	592	535	26.74	14,306	1,618	41	226	67,547
1962.....	640	588	26.99	15,685	1,714	50	219	83,553
1963.....	760	722	24.13	17,421	1,856	52	213	101,480
1964.....	870	809	19.38	15,680	1,767	62	225	100,239
1965.....	790	735	19.92	14,641	1,590	63	217	79,042
1966.....	769	708	23.78	16,840	1,718	62	204	83,270
1967.....	810	756	22.47	16,989	1,759	63	207	94,433
1968.....	847	793	22.86	18,130	1,760	65	194	106,413
1969.....	986	932	25.35	25,630	2,124	66	180	152,082
1970.....	1,087	1,033	24.85	25,669	2,270	56	177	165,439
1971.....	1,126	1,080	20.92	22,597	2,062	59	182	144,594
1972.....	1,122	1,072	23.32	24,996	2,549	63	204	156,614
1973.....	1,183	1,134	25.36	28,753	2,914	56	203	179,334
1974.....	1,238	1,189	24.53	29,167	3,026	54	207	187,785

¹ Harvesting begins in October. The length of the growing season being about 11 months.

² Total harvested acreage includes acreage for both centrifugal and noncentrifugal sugar. The acreage for noncentrifugal sugar has been estimated on the assumption 1 acre of cane yields about 1.5 tons of noncentrifugal sugar for the year 1949.

³ Cane production divided by harvested acreage.

⁴ Prior to 1951, calculated cane production is the quantity of cane ground for centrifugal sugar, estimated on the basis of the reported yield of sugar per ton of cane. From 1951 to date, the cane production is reported.

⁵ As reported prior to 1950 and from 1952 to 1957. Other years computed.

⁶ Preliminary.

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

**EDIBLE SYRUPS: UNITED STATES PRODUCTION, FOREIGN TRADE, AND INDICATED DOMESTIC CONSUMPTION,
1935-39, 1940-1944 AND 1945-49 AVERAGES, AND 1950-74**

(000 GALLONS)

Year	PRODUCTION ¹								IMPORTS				
	SYRUPS								Maple Syrup	Edible Molasses and Cane Syrup ⁸	Shipments from Territories		
	Corn	Cane	Sorghum	Maple ²	Refiners	Edible Molasses	Honey	Total			Honey	Honey	Total
1935-39	91,110	22,855	14,328	2,723	2,930	4,970	15,343	154,259	101	2,048	15	182	2,346
1940-44	137,377	18,741	11,409	2,571	7,804	6,273	16,709	200,884	268	4,083	1,429	135	5,915
1945-49	143,145	20,255	8,851	1,510	11,648	8,971	18,842	213,222	319	1,074	1,275	89	2,757
1950	130,448	9,745	3,539	2,006	4,005	3,314	19,780	172,837	479	2,214	1,020	30	3,743
1951	131,831	8,775	3,671	1,742	4,971	4,339	21,923	177,252	323	2,050	692	.....	3,065
1952	127,405	5,510	2,856	1,603	3,405	3,284	23,091	167,154	522	5,710	720	.....	6,952
1953	131,767	5,540	2,418	1,208	3,907	4,077	18,996	167,913	442	1,793	831	.....	3,066
1954	133,071	4,805	2,552	1,672	3,814	2,958	18,372	167,244	371	2,015	777	.....	3,163
1955	138,226	4,730	2,405	1,578	3,853	2,820	21,666	175,278	457	2,305	837	.....	3,599
1956	141,504	4,990	3,594	1,529	3,882	3,193	18,169	176,861	643	2,046	406	.....	3,095
1957	142,089	3,965	2,516	1,697	3,620	2,384	20,447	176,748	757	573	404	.....	1,734
1958	153,481	3,135	2,282	1,392	4,892	2,553	22,116	189,851	656	1,286	335	.....	2,277
1959	162,197	3,617	2,286	1,137	3,999	3,084	20,083	196,403	691	2,138	383	.....	3,212
1960	169,776	3,676	1,943	1,143	4,134	2,714	20,611	203,997	908	1,884	1,049	.....	3,841
1961	180,397	3,519	.....	1,524	3,846	3,379	21,721	214,386	904	911	768	.....	2,583
1962	201,259	3,303	.....	1,460	2,691	3,075	21,189	232,977	929	3,827	604	.....	5,360
1963	215,573	2,702	.....	1,143	2,769	2,772	22,647	247,606	1,068	1,706	221	.....	2,995
1964	238,832	2,814	.....	1,546	2,862	2,685	21,323	270,062	666	2,119	417	.....	3,202
1965	243,682	2,989	.....	1,266	2,994	2,648	20,427	274,006	879	3,349	1,127	.....	5,355
1966	252,337	2,923	.....	1,476	2,493	2,563	20,403	282,195	938	3,061	806	.....	4,805
1967	255,860	2,121	.....	979	2,402	2,477	18,225	282,064	1,147	1,065	1,416	.....	3,628
1968	274,000 ⁴	2,346	.....	983	2,561	2,466	16,165	298,521	988	3,732	1,427	.....	6,147
1969	282,000 ⁴	2,661	.....	1,032	2,235	2,532	22,591	313,051	1,185	2,266	1,244	.....	4,695
1970	292,000 ⁴	.....	.....	1,110	1,695	2,121	18,736	315,662	956	2,165	749	.....	3,870
1971	304,000 ⁴	.....	.....	962	1,883	2,517	16,674	326,036	577	2,470	967	.....	4,014
1972	352,000 ⁴	.....	.....	1,099	2,077	2,290	18,081	375,547	710	1,694	3,291	.....	5,695
1973	410,000 ⁴	.....	.....	857	2,309	1,926	20,072	435,164	803	2,935	900	.....	4,638
1974 ⁵	468,000 ⁴	.....	.....	1,087	2,564	1,559	15,653	488,863	801	2,512	2,196	.....	5,509

Year	EXPORTS				INDICATED DOMESTIC CONSUMPTION					
	Corn Syrup	Edible Molasses and Syrup including Maple ⁶			SYRUPS					
		Cane Syrup	Maple ⁶	Honey	Total	Corn	Maple	Sorghum	Cane Syrup, Refiners Syrup, and Edible Molasses	Honey	Total
1935-39	3,027	765	191	3,983	88,083	2,824	14,328	32,038	15,349	152,622
1940-44	2,792	482	78	3,352	134,585	2,839	11,409	36,419	18,195	203,447
1945-49	3,220	1,108	244	4,572	139,925	1,830	8,851	40,840	19,944	211,390
1950	3,761	242	801	4,804	126,687	2,485	3,539	19,036	20,029	171,776
1951	4,287	231	1,075	5,593	127,544	2,065	3,671	19,904	21,540	174,724
1952	3,101	153	1,968	5,222	124,304	2,125	2,856	17,756	21,843	168,884
1953	3,241	267	2,789	6,297	128,526	1,650	2,418	15,050	17,038	164,682
1954	3,233	272	2,061	5,566	129,838	2,043	2,552	13,320	17,088	164,841
1955	3,386	248	1,739	5,373	134,840	2,035	2,405	13,460	20,764	173,504
1956	3,189	249	1,548	4,986	138,315	2,172	3,594	13,862	17,027	174,970
1957	2,745	250	1,681	4,676	139,344	2,454	2,516	10,292	19,200	173,806
1958	2,396	165	1,902	4,463	151,085	2,048	2,282	11,701	20,549	187,665
1959	2,245	155	1,062	3,462	159,952	1,828	2,286	12,683	19,404	196,153
1960	1,836	182	797	2,815	167,940	2,051	1,943	12,226	20,863	205,023
1961	1,370	173	607	2,150	179,027	2,428	.....	11,482	21,882	214,819
1962	1,514	140	1,158	2,812	199,745	2,389	.....	12,756	20,635	235,525
1963	2,055	192	2,125	4,372	213,518	2,211	.....	9,757	20,743	246,229
1964	1,632	205	760	2,597	237,200	2,212	.....	10,275	20,980	270,667
1965	1,003	.....	1,166	2,169	242,679	2,145	.....	11,980	20,388	277,192
1966	1,038	.....	1,219	2,257	251,299	2,414	.....	11,040	19,990	284,743
1967	1,113	.....	986	2,099	254,747	2,126	.....	8,065	18,655	283,593
1968	1,541	.....	684	2,225	272,459	1,971	.....	11,105	16,908	302,443
1969	2,169	.....	833	3,002	279,831	2,217	.....	9,694	23,002	314,744
1970	1,324	.....	688	2,012	290,676	2,066	.....	5,981	18,797	317,520
1971	1,324	.....	640	1,964	302,676	1,539	.....	6,870	17,001	328,086
1972	1,205	.....	346	1,551	350,795	1,809	.....	6,061	21,026	379,691
1973	1,377	.....	1,484	2,861	408,623	1,660	.....	7,170	19,488	436,941
1974 ⁵	1,742	.....	386	2,128	466,258	1,888	.....	6,635	17,463	492,244

¹Production of cane syrup, sorghum syrup, and edible molasses is of the fall of the preceding year. Estimates of sorghum discontinued beginning 1961; cane syrup discontinued beginning 1969. ²Does not include varying quantities produced on nonfarm lands in Somerset County, Maine. ³U.S. Department of Commerce molasses and sugar syrups series, less liquid sugar imports reported to Sugar Division, Agricultural Stabilization and Conservation Service. ⁴Unofficial estimates. ⁵Preliminary. ⁶Assumed to be largely refiners' syrup. Beginning 1965, data not available because of change in export classification.

Source: Economic Research Service. Data for 1949-58 in *Agricultural Statistics*, 1972, table 139.

Part III

U.S. SUGAR LAWS

Laws governing sugar in the United States are as old as the country itself. Following is a brief review.

SUGAR'S TAXATION HISTORY

Sugar is one of the world's most regulated commodities. Approximately 85 percent of total world production comes under some type of internal or external law or regulation.

Sugar in the United States has been under government regulation since the American Revolution.

The first piece of general legislation enacted by the first U.S. Congress in 1789 was the first sugar tariff of the United States.

It provided for a duty of one cent per pound on brown sugars; three cents on loaf; and, one and one-half cents on all other types of sugars.

From that time on, sugar tariffs provided a major source of revenue until the imposition of Federal income and corporate taxes.

Accordingly, the rates had a tendency to fluctuate somewhat depending upon the condition of the national treasury.

Because the purity of present-day refined sugars was unknown in the early days of the republic, complex tables of rates were required to assess the widely varying qualities of sugar which came into the U.S. from many parts of the world.

The Tariff Act of 1816 taxed loaf sugar at 12 cents per pound. There were other high tariffs during the Civil War period, after which tariff rates generally declined.

The Reciprocity Treaty of 1875 between the Kingdom of Hawaii and the United States provided for free entry of Hawaiian Sugar. Annexation in 1898 made Hawaii a domestic producer.

For four years beginning in 1890, sugar was placed on the free lists, and a bounty to encourage production was paid to domestic producers. Louisiana growers benefited most from this as the beet sugar industry was just getting underway and Hawaii was not yet a part of the United States.

The Spanish American War, beginning in 1898, had a major influence on American sugar supplies.

Puerto Rico in 1900 was given a preferential reduction in tariff charges. A year later, her sugar was placed on the free list.

The Philippines in 1902 received a 25 percent preferential tariff reduction. In 1909, she was permitted free entry on the first 300,000 tons of sugar exported to the U.S. In 1914, all of her sugar sales to the U.S. were placed on the free list.

Cuba in 1903 received a preferential tariff reduction of 20 percent below the full world tariff rate. Up to the early 1960's, Cuba retained a preferred tariff position among foreign suppliers of the American market. Cuba was considered America's sugar warehouse.

Because of political developments within Cuba and that country's slide into the Communist orbit, diplomatic relations between Cuba and the U.S. were severed in 1961 and its quota

SUGAR — LOW PRICED FOOD

Sugar in the United States is a low-cost food. The average American must work only 1.8 minutes to earn enough money to purchase a pound of refined sugar at retail—one of the smallest time-worked periods among modern nations of the world.

WORK TIME NEEDED TO PURCHASE ONE POUND SUGAR AT RETAIL, 1973

Country	Avg. Hourly Compensation in U.S. Dollars ¹	U.S. Cents Per Min.	Retail Price for Sugar 1973 ² (U.S. Cts.)	Minutes Worked Per Lb. of Sugar	Index U.S.=100
U.S.	5.19	8.65	15.1	1.7	100
Canada	4.69	7.82	16.3	2.1	124
Japan	2.18	3.63	26.3	7.2	424
France	3.07	5.12	17.9	3.5	206
Netherlands	3.93	6.55	19.4	3.0	176
Sweden	4.78	7.97	21.4	2.7	159
U.K.	2.25	3.75	12.6	3.4	200
W. Germany	4.55	7.58	19.3	2.5	147

¹U.S. Dept. of Labor—Division of Foreign Labor Statistics—available only for developed countries.

²International Sugar Organization.

subsequently allocated to other suppliers on a formula basis established by Congress.

The Philippines, granted independence by the United States in 1946, stayed on the free list until December 31, 1955.

U.S. DUTIES ON FOREIGN SUGAR

Excluding those areas which have received preferential treatment, the tariff duty paid by other suppliers of the U.S. market has been changed eight times over the years since 1897 when it was set at 1.685 cents per pound. It dipped slightly in the 1914-21 period and then

U. S. SUGAR CONSUMPTION* AND POPULATION

Five Year Intervals—1863-1928

Year	Total Sugar Consumption* (Short tons, raw value)	Population** (000's)	Per Capita Consumption (Pounds, refined value)
1863....	317,018	33,365	17.76
1868....	579,551	36,973	29.30
1873....	897,072	41,677	40.23
1878....	926,929	47,598	36.40
1883....	1,402,577	53,693	48.83
1888....	1,746,385	59,974	54.43
1893....	2,283,985	66,970	63.75
1898....	2,400,278	73,494	61.05
1903....	3,055,492	80,983	70.52
1908....	3,817,849	89,073	80.11
1913....	4,485,778	96,512	86.88
1918....	4,189,134	103,588	75.59
1923....	5,729,172	111,537	96.01
1928....	6,658,400	119,862	103.83

Yearly Intervals—1929-1973

1929....	6,835,360	121,526	105.13
1930....	6,857,760	123,077	104.15
1931....	6,702,080	124,039	100.99
1932....	6,438,880	124,840	96.40
1933....	6,387,041	125,579	95.07
1934....	6,331,585	126,374	93.64
1935....	6,633,928	127,250	97.44
1936....	6,706,195	128,053	97.89
1937....	6,671,402	128,825	96.79
1938....	6,643,253	129,825	95.64
1939....	6,867,518	130,880	98.08
1940....	6,890,668	132,122	97.49
1941 (a)	8,069,457	133,402	113.06 (a)
1942....	5,466,204	134,860	75.76
1943....	6,334,713	136,739	86.59
1944....	7,147,350	138,397	96.53
1945....	6,040,569	139,928	80.69

* Theoretical consumption. (Actually deliveries for consumption, and includes deliveries for U.S. military forces at home and abroad.)

** Includes Alaska, excludes Hawaii.

Source: Lamborn Sugar Market Report.

Year	Total Sugar Consumption* (Short tons, raw value)	Population** (000's)	Per Capita Consumption (Pounds, refined value)
1946....	5,620,708	141,389	74.31
1947....	7,447,834	144,126	96.59
1948....	7,342,971	146,631	93.61
1949....	7,580,225	149,188	94.97
1950....	8,279,330	151,683	102.02
1951....	7,736,573	154,360	93.68
1952....	8,104,160	157,028	96.47
1953....	8,484,900	159,636	99.35
1954....	8,206,606	162,417	94.44
1955....	8,399,081	165,270	94.99
1956....	8,903,877	168,176	98.96
1957....	8,733,988	171,198	95.36
1958....	9,030,271	174,060	96.97
1959....	9,181,146	177,261	96.81
1960....	9,260,833	180,085	96.12
1961....	9,610,929	183,093	98.11
1962....	9,751,927	185,933	98.04
1963....	9,988,831	188,619	98.99
1964....	9,670,693	191,262	94.51
1965....	10,020,287	193,653	96.72
1966....	10,299,344	195,904	98.27
1967....	10,245,342	198,045	96.70
1968....	10,927,340	200,029	102.11
1969....	10,654,760	201,975	98.61
1970....	11,309,516	204,159	103.54
1971....	11,288,057	206,311	102.27
1972....	11,415,469	208,078	102.54
1973....	11,482,498	209,628	102.38
1974†..	11,237,440	211,117	99.50

(a) During 1941, a large quantity of the deliveries went into the building up of the "invisible" supply, and was not consumed during that year. In 1942, the major portion of this invisible supply was recaptured by the OPA and reallocated for consumption during 1942.

† Preliminary.

climbed to 2.5 cents a pound during the 1930-34 period and subsequently declined to its present level of 0.625 cents beginning in 1951.

MODERN U.S. SUGAR LEGISLATION

The Depression of 1929 drove home the point that tariffs alone could not be the sole tool to regulate U.S. sugar supplies. In 1934, the Jones-Costigan Act amended the Agricultural Adjustment Act to include sugar as a basic commodity under the general farm program.

It provided for a processing tax on refined sugar, for benefit payments to sugarbeet and sugarcane growers under production adjustment contracts, and for quotas for domestic and foreign areas supplying the U.S. market.

The Supreme Court in 1936 declared the benefit payments and taxes on sugar unconstitutional, but quotas were not questioned and continued in effect.

The Sugar Act of 1937, which embodied the basic principles of the Jones-Costigan Act, was signed into law September 1 of that year and continued in effect until succeeded by the current law, the Sugar Act of 1948. However, the quota system was suspended for several years during the 1940's because of World War II.

The Sugar Act of 1948 has been extended seven times with various amendments. The seventh extension was signed by President Richard M. Nixon in October 1971. The Act was extended for three years until December 31, 1974.

U.S. SUGAR ACT

The United States Sugar Act, generally called the Sugar Act of 1948, as amended, was a federal law designed to achieve three major goals:

1. To assure consumers of adequate supplies of sugar at reasonable prices.
2. To maintain the domestic sugar industry.
3. To promote the export trade of the United States.

It was also designed to be self-supporting.

To a remarkable degree it achieved those goals. After 1934 when the law went into force, abundant supplies of sugar were available to American consumers at fair and reasonable prices. A vigorous sugar industry was developed within our national borders.

There were social gains too, in the improvement of wages and working conditions of farm laborers.

The program also put more than \$660 million into the U.S. Treasury above its costs.

HOW THE SUGAR ACT WORKED

The Act directed the Secretary of Agriculture in October of each year to estimate the consumption of sugar in the U.S. for the year ahead.

Once he had arrived at an estimate, the total amount of sugar it represented was allocated

among domestic and foreign sources of supply by a formula set down in the Act. These allocations were quotas—the amount of sugar each area was permitted to market in the United States in the ensuing year.

Roughly 40 percent of the total was assigned to 34 foreign countries, 21 of them in the Western Hemisphere.

If, as the year advanced, it appeared that the Secretary of Agriculture's estimate of consumption was too high or too low, he was required to revise the estimate to meet the changed conditions. In the event that any area—domestic or foreign—was unable to fill its quota, the Secretary reallocated the deficit to fill the void and thus maintain an even flow of sugar to consumers.

Deficits in domestic areas and foreign countries were reallocated to foreign countries.

END OF THE SUGAR ACT

The U.S. House of Representatives on June 5, 1974, by a vote of 209 to 175, rejected a bill which would have extended the 40-year-old U.S. Sugar Act through 1979.

This action came as sugar prices were climbing to an all-time high. Reportedly, some Congressmen and some consumers felt the Sugar Act was in part responsible for the high cost of sugar. Others opposed extending the Sugar Act because they thought the "compliance payments" feature of the Act was a subsidy program.

In fact, Hawaii's sugar growers paid some \$11.3 million in refinery taxes in 1973 to support the compliance payments program, but received in return only about \$9.5 million. In the 40 years the Act was in operation, the U.S. Treasury netted an estimated \$660 million refinery tax receipts over the amount paid to sugar growers for compliance payments. Under the Act, compliance payments were made to growers who complied with the certain features of the Sugar Act. To receive the compliance payment, each sugar grower had to abide by labor rules and regulations set by the Secretary of the Department of Agriculture; use no child labor in the fields; and stay within any acreage quotas which might be in force.

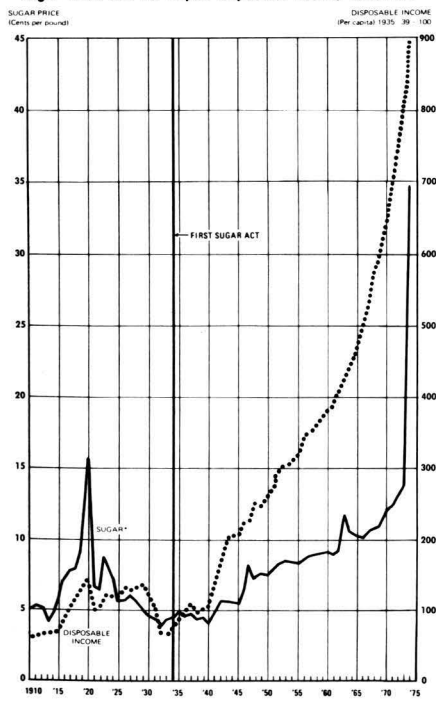
Because the compliance features of the Sugar Act were so often misunderstood, Hawaiian sugar growers early advocated an end to the tax-compliance payment program.

THE U.S. AND THE WORLD MARKET

When the 1948 Sugar Act expired at midnight, December 31, 1974, the United States became the only major nation in the world without special legislation governing the production, sale, export or import of sugar.

According to the Report to the Congress by

Sugar Prices and Per Capita Disposable Income, 1910-1974



the Comptroller General of the United States in July 1975, only about 12 million tons of sugar entered the world market without some legislative protection in the 1973-74 crop year. Traditionally, sugar entering this so-called "free market" is sugar produced without a guaranteed market, and this sugar often is sold in times of surplus at prices under what it cost to produce. In time of sugar shortages, however, the price for this "free market" sugar may soar.

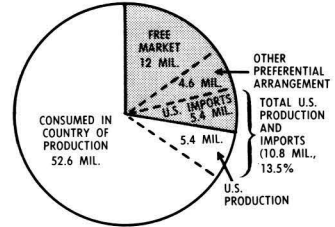
According to the Comptroller General's report, sugar is produced in more than 100 countries, and production and distribution controls mostly are "expressions of national policy."

The Report continued, "Each country has its own reasons for developing domestic sugar industries, ranging from more efficient use of available farmlands to preventing outflow of foreign exchange. In most countries, however,

the overriding reason for maintaining domestic sugar bases is to provide constant, reliable internal supplies of sugar."

The Comptroller General's Report included this illustration:

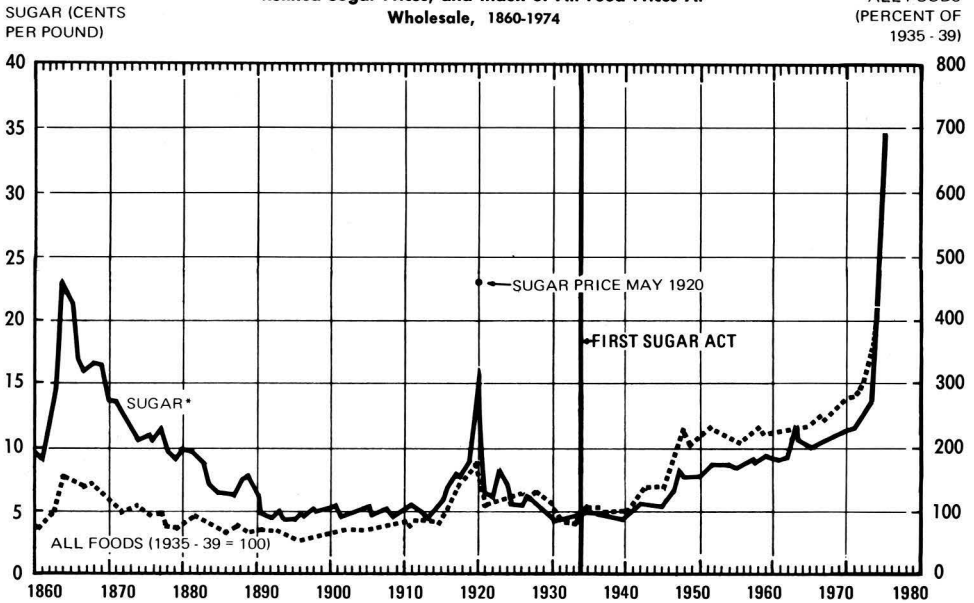
U.S. SUGAR PRODUCTION AND IMPORTS IN RELATION TO WORLD TRADE



CONSUMED IN COUNTRY OF PRODUCTION	58.0 MIL.	72%
WORLD TRADE	22.0 MIL.	28%
	80.0 MIL.	100%

Note A: Stated in million metric tons, raw value, (July 1973—June 1974)
Source: Council on wage and price stability.

Refined Sugar Prices, and Index of All Food Prices At Wholesale, 1860-1974



* REFINED SUGAR PRICES, NET CASH, NORTHEAST

HEARINGS ARE HELD

Rep. Thomas S. Foley, (D-Wash.) chairman of the House Committee on Agriculture, presided at committee hearings on sugar in mid July. Appearing before the Committee were industry representatives from Hawaii, members of Hawaii's Congressional delegation and a spokesman for the ILWU.

During the hearings in Washington D.C., witnesses included members of the Department of Agriculture, sugar producer and processor groups, industrial sugar users, labor representatives, consumer groups, representatives of foreign suppliers, representatives of general farm organizations, and persons from academic institutions.

HSPA STATEMENT

Roger H. Sullivan, Washington D.C. vice-president of HSPA, testified in favor of new sugar legislation. He was accompanied by Francis S. Morgan, HSPA president, and E. B. Holroyde, second vice-president of HSPA.

The HSPA statement proposed new sugar legislation. Sullivan told the Committee members, "We recommend a sugar program which will encourage production in all domestic areas. This would require a price objective which is reasonable for the consumer and which allows for a fair and reasonable return to the domestic producing industry. A mechanism should be provided for adjustment in the price formula to reflect changes in the cost of production, rates of inflation and other key fiscal

indices . . ."

Sullivan said, "Our interest in maintaining domestic production is obvious, and we think that it coincides with the broader national interest in assuring that the United States can produce a substantial portion of its own requirements.

"As the basis for further consideration of a new sugar program, we suggest an overall quota system. It should be structured to encourage domestic production and give assurance to foreign suppliers of participation in the U.S. market over a reasonable period of time."

Sullivan urged that any new sugar legislation considered by the Congress omit any excise tax and compliance payment mechanism.

CHARGES AGAINST SUGAR QUOTAS 1955, 1960, 1965-74 (Short tons, raw value)

Area	1955	1960	1965	1966	1967	1968
Domestic beet	1,797,327	2,164,692	3,024,978	3,024,142	2,823,695	3,085,242
Mainland cane	499,623	619,047	1,099,163	1,099,929	1,169,286	1,203,921
Hawaii	1,052,004	844,788	1,136,753	1,200,227	1,252,543	1,191,704
Puerto Rico	1,079,562	895,784	829,570	711,325	705,113	504,081
Virgin Islands	9,942	6,954	4,282	5,405	.....	.....
Philippine Islands						
Quota Sugar	977,375	979,783	1,178,216	1,186,123	1,122,767	1,124,002
Cuba	2,861,937	2,393,663	.....	.....	.....	.....
Other Foreign Countries: ¹						
Quota Sugar	118,524	434,208	2,647,150	3,128,093	3,310,126	.....
Non-Quota Sugar.. ..	.....	1,187,487	.....	.....	.....	3,841,660
TOTAL	8,396,294	9,526,406	9,920,112	10,355,244	10,383,530	10,950,610

Area	1969	1970	1971	1972	1973	1974
Domestic beet	3,215,577	3,569,398	3,437,908	3,510,797	3,511,836	3,024,078
Mainland cane	1,169,303	1,307,714	1,255,353	1,630,310	1,613,382	1,219,101
Hawaii	1,159,820	1,145,486	1,086,852	1,113,163	1,141,757	993,325
Puerto Rico	341,231	352,331	143,301	148,151	75,516	157,021
Texas cane area .....	.....	.....	.....	.....	.....	52,749
Philippine Islands						
Quota Sugar	1,124,431	1,298,226	1,591,737	1,431,761	1,454,390	1,472,259
Other Foreign Countries: ¹						
Quota Sugar	3,724,608	3,878,794	3,778,441	4,005,463	3,878,866	4,272,051
TOTAL	10,734,970	11,551,949	11,293,592	11,839,645	11,676,301	11,190,548

¹Excludes first ten tons imported.

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

UNITED STATES OF AMERICA
Total Foreign Imports (including Quota-Exempt) into U.S.A. (Mainland)
by Countries of Origin: 1972 to February, 1975

(Metric Tons—Raw Value)^a

Countries of Origin	Calendar Year			January/February	
	1972	1973	1974	1974	1975
Argentina	79,690	76,892	99,557	157	5,381
Australia	208,377	240,756	219,271	0	8
Bahamas	0	0	0	0	0
Bolivia	0	6,848	5,184	0	0
Brazil	578,176	591,561	710,778	153,864	11,883
British Honduras	35,904	43,099	52,308	8,733	6,839
China (Taiwan Province)	78,090	78,198	81,700	0	0
Colombia	71,564	68,089	95,099	0	1,667
Costa Rica	76,345	90,451	71,229	0	0
Dominican Republic	681,740	765,892	746,165	78,687	72,314
Ecuador	85,556	84,510	54,055	0	1,266
E.E.C.:	19,144	5,764	1	1	0
Belgium/Luxembourg	(0)	(0)	(1)	(1)	(0)
Ireland	(4,680)	(1,004)	(0)	(0)	(0)
United Kingdom	(14,284)	(4,760)	(0)	(0)	(0)
El Salvador	49,304	54,322	59,073	6,345	14,806
Fiji Islands	41,716	40,465	41,806	0	1
French West Indies	0	0	0	0	0
Guatemala	70,159	56,746	87,030	5,643	1
Haiti	20,431	13,875	15,938	0	934
Honduras	12,091	0	7,670	0	0
India	76,298	73,886	77,022	1	11
Malagasy Republic	11,901	11,004	11,873	0	0
Malawi	0	14,166	9,320	0	5,136
Mauritius	28,779	40,460	41,301	0	0
Mexico	588,149	577,724	488,173	134,791	2,805
Nicaragua	72,133	69,121	48,311	5,442	15,303
Panama	37,781	47,421	59,445	4,174	11,229
Paraguay	6,936	6,711	7,696	0	0
Peru	402,498	369,596	442,832	73,334	8,582
Philippines	1,298,858	1,319,389	1,335,894	119,968	47,407
South Africa	52,327	67,026	62,968	21,317	0
Swaziland	29,091	27,384	37,521	0	0
Sweden	9	8	4	0	0
Thailand	17,285	17,302	23,786	0	0
Venezuela	63,689	28,940	0	0	0
West Indies and Guyana	158,096	37,046	257,037	44,863	12,514
Other Countries	36	3	16	0	1,268
TOTAL	4,952,153	4,834,655	5,250,063	657,320	219,355

^aRefined values are converted to raw value at the present official standard rate of 93.46 to 100, except for exports which are converted to raw value at the rate of 92 to 100.

^bContinental U.S. imports including those for re-export either in the form of sugar or sugar-containing products.

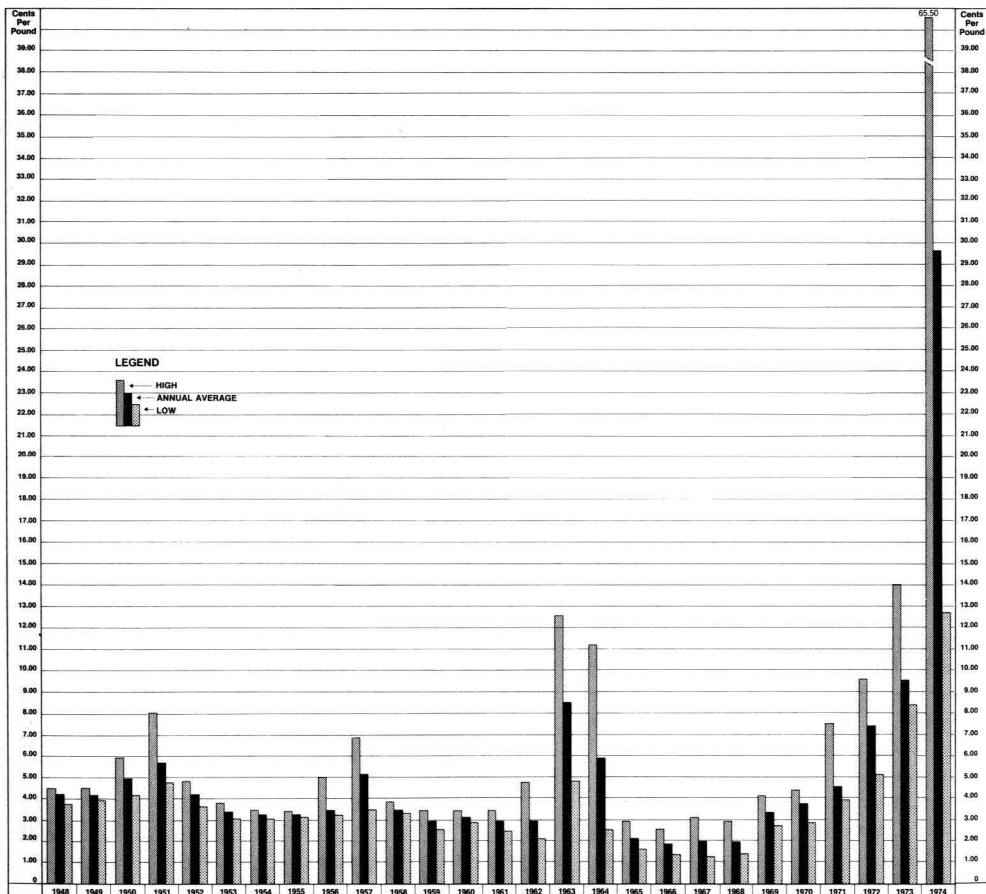
^cExports from Continental U.S.A. and Insular Areas to Foreign Countries.

^dSugar deliveries for export in sugar-containing manufactured products are included in this column.

Source: International Sugar Organization.

LAMBORN'S CHART OF WORLD SUGAR PRICES — 1948 - 1974

HIGHS - ANNUAL AVERAGES - LOWS
 In Cents per Pound - Raw Sugar 96°



Part IV

WORLD PRODUCTION

Sugar, a basic food, is produced by some 110 nations throughout the world. F. O. Licht in Germany estimates that total sugar production in the 1974-75 season will be 78,880,000 metric tons. Of this, 49,410,000 tons will be cane sugar and 29,470,000 tons will be beet sugar.

In addition, another 11 million tons of non-centrifugal sugar will be produced, according to estimates.

WORLD PRICE

In one form or another, the people of the world consume about 90 million tons of sugar each year. Most of it is consumed in the areas where it is grown. Some additional sugar is reserved for markets where the growers have government assistance or some form of preferential treatment.

The remaining world production—the fraction that has no “home”—constitutes the so-called “world market” or “free market.”

Prices in the world market are normally depressed, frequently below the cost of production in even the most efficient producing areas.

The world price bears not the faintest relationship to costs of production, or to decent living standards. It is simply a dumping price and is so recognized universally.

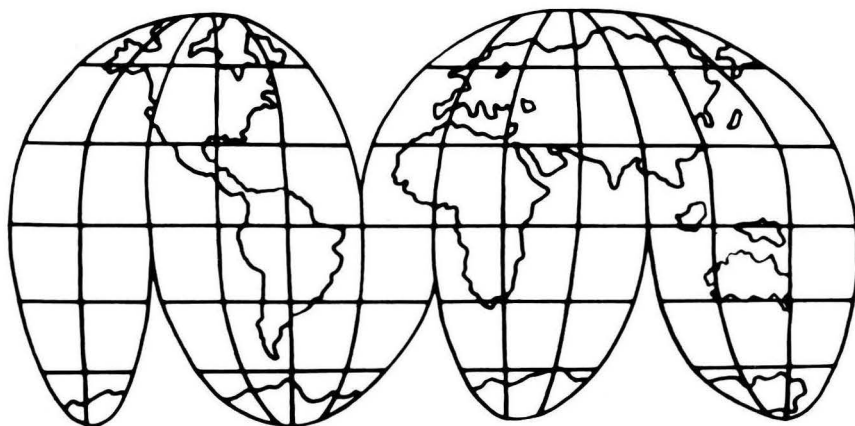
INTERNATIONAL SUGAR AGREEMENT

The International Sugar Agreement, 1973, which succeeded the International Sugar Agreement, 1968, came provisionally into force on January 1, 1974 and definitively into force on October 15, 1974. The present Agreement contains no economic clauses and its main purpose is to keep in being the International Sugar Organization to prepare the bases and framework of a new, fully effective International Sugar Agreement. In discharging this responsibility, the Council of the Organization was authorized

to arrange for studies to be made and discussions to be held between Members of the Agreement and with non-Members, as well as with other Organizations. The Council has also been empowered to request the Secretary-General of UNCTAD to convene a negotiating conference as soon as it considers it appropriate. The Council, at its first session in January 1974, established a Consultative Committee consisting of all Members of the Organization. This Committee held two meetings in 1974 and continued its work in 1975. The Committee established a Sub-Committee to assist it in its task which, in turn, set up two special Working Groups to undertake a technical examination of the matter of stocks for the operation of a future Agreement and of problems connected with price references in a future Agreement.

The Working Groups examined various issues to be dealt with and reported to the Consultative Committee in May 1975. The work of these Groups is being continued and that of one of the Groups has been extended to cover all aspects of supply management. This will require more time and, bearing in mind that the Agreement will expire on December 31, 1975, the Council will be invited to make it possible for the Agreement to be extended under the terms of Article 42 for a further year.

As at the end of December 1974 there was a total of 35 exporting and 19 importing countries which were parties to the 1973 International Sugar Agreement. At present there is a total of 35 exporting and 18 importing countries which are parties to the Agreement. The United States, which participated in the 1973 U.N. Sugar Conference at Geneva but is not a party to the present Agreement, accepted an invitation to observe at sessions of the International Sugar Council, as it had done under the previous Agreement, and at discussions of the bases and framework of a future Agreement.



CENTRIFUGAL SUGAR: Production in Specified Countries,
(IN THOUSANDS OF SHORT TONS)

Region and Country	Average					
	1965-66/ 1969-70	1970-71	1971-72	1972-73	1973-74	1974-75 ²
<u>NORTH AMERICA:</u>						
Bahamas	8	0	0	0	0	0
Barbados	185	151	125	130	121	100
Belize	64	73	78	79	99	87
Canada	151	107	164	161	126	111
Costa Rica	145	171	197	192	181	200
Cuba	6,253	6,530	4,837	5,787	6,393	6,063
Dominican Republic	886	1,209	1,256	1,259	1,316	1,290
El Salvador	132	174	204	207	256	279
Guadeloupe	168	166	88	133	107	118
Guatemala	187	225	259	298	358	435
Haiti	62	72	71	72	72	76
Honduras	54	67	68	65	80	85
Jamaica and Dep.	480	437	423	365	422	409
Martinique	43	31	24	25	15	12
Mexico	2,610	2,729	2,778	3,053	3,125	3,197
Nicaragua	120	187	183	157	176	217
Panama	70	95	96	94	119	150
St. Kitts	39	28	29	26	30	28
Trinidad-Tobago	247	239	256	206	206	146
U.S.-Continental (beet)	3,067	3,321	3,512	3,663	3,217	3,050
U.S.-Continental (cane)	1,212	1,253	1,206	1,620	1,381	1,463
U.S.-Hawaii	1,200	1,286	1,119	1,129	1,041	1,144
U.S.-Puerto Rico	658	321	298	255	290	300
U.S.-Virgin Islands	1	0	0	0	0	0
TOTAL	18,040	18,872	17,270	18,976	19,132	18,958
<u>SOUTH AMERICA:</u>						
Argentina	1,092	1,001	1,092	1,426	1,819	1,689
Bolivia	111	90	130	136	192	193
Brazil	4,984	5,642	6,227	6,795	7,672	8,157
Chile	168	227	191	169	100	140
Colombia	666	758	871	898	937	987
Ecuador	214	250	276	274	270	295
Guyana	364	413	352	298	381	369
Paraguay	45	62	61	62	80	89
Peru	837	995	1,015	1,014	1,125	1,131
Surinam	19	15	12	10	11	11
Uruguay	61	49	64	83	85	123
Venezuela	426	542	570	571	602	625
TOTAL	8,988	10,044	10,860	11,735	13,275	13,810
<u>WESTERN EUROPE:</u>						
EC:						
Belgium-Luxembourg	592	726	927	758	865	683
Denmark	338	295	358	377	405	457
France	2,411	2,972	3,530	3,289	3,474	3,246
Germany West	2,112	2,264	2,584	2,690	3,042	3,038
Ireland	152	165	201	186	208	158
Italy	1,533	1,321	1,367	1,381	1,275	1,078
Netherlands	751	787	923	833	917	856
United Kingdom	1,049	1,085	1,301	1,062	1,154	728
TOTAL EC.	8,937	9,615	11,189	10,577	11,342	10,245
Austria	331	358	325	428	408	438
Finland	58	66	69	97	94	94
Greece	130	206	170	142	177	206
Portugal (Azores & Madeira) ..	23	25	20	25	28	26
Spain	736	806	1,070	915	899	677
Sweden	261	241	294	322	291	338
Switzerland	68	65	84	74	86	79
TOTAL	10,546	11,382	13,222	12,579	13,325	12,103

Average 1965-66/1969-70, Annual 1970-71/1974-75¹

Region and Country	Average					
	1965-66/ 1969-70	1970-71	1971-72	1972-73	1973-74	1974-75 ²
EASTERN EUROPE:						
Albania	17	19	16	21	21	22
Bulgaria	275	250	275	254	292	259
Czechoslovakia	958	850	772	859	947	937
Germany East	655	551	573	794	777	772
Hungary	500	300	309	364	360	386
Poland	1,830	1,659	1,887	2,016	2,003	1,716
Romania	493	420	490	636	698	661
Yugoslavia	511	390	464	471	532	611
TOTAL	<u>5,238</u>	<u>4,439</u>	<u>4,786</u>	<u>5,413</u>	<u>5,631</u>	<u>5,364</u>
TOTAL EUROPE	<u>15,784</u>	<u>15,821</u>	<u>18,008</u>	<u>17,993</u>	<u>18,955</u>	<u>17,467</u>
TOTAL U.S.S.R.	10,605	9,904	8,813	8,984	10,549	8,818
AFRICA:						
Egypt	432	450	500	650	716	661
Ethiopia	79	134	143	159	165	176
Kenya	83	147	140	111	176	187
Malagasy Republic	117	115	121	121	127	121
Mauritius	671	674	688	756	768	549
Morocco	63	110	246	246	273	320
Mozambique	246	310	357	402	430	441
Reunion	265	230	201	250	277	263
Rhodesia	203	165	193	220	273	276
South Africa	1,650	1,542	2,056	2,111	1,909	2,076
Swaziland	160	180	207	188	209	220
Tanzania	92	103	99	101	117	121
Uganda	161	168	155	98	61	30
Zaire (Congo, K)	40	50	55	63	69	71
Other ³	414	491	515	524	551	571
TOTAL	<u>4,675</u>	<u>4,868</u>	<u>5,677</u>	<u>6,002</u>	<u>6,123</u>	<u>6,084</u>
ASIA:						
Burma	89	125	127	132	110	121
China-People's Republic of	1,747	2,499	2,115	2,708	2,899	2,866
China, Rep. of (Taiwan)	890	916	822	860	983	904
India	4,161	4,963	4,222	5,040	5,456	6,393
Indonesia	732	800	750	981	1,047	1,102
Iran	464	624	639	689	734	730
Japan	429	502	639	716	720	541
Nansei-Nanpo (Ryukyu)	232	238	150	5	5	5
Pakistan	543	758	392	518	701	644
Philippines	1,790	2,270	2,061	2,673	2,914	3,026
Thailand	340	584	694	716	1,025	1,213
Turkey	730	709	1,003	894	811	919
Other ⁴	123	120	184	201	321	338
TOTAL	<u>12,269</u>	<u>15,108</u>	<u>13,800</u>	<u>16,129</u>	<u>17,723</u>	<u>18,798</u>
OCEANIA:						
Australia	2,586	2,702	3,015	3,015	2,858	3,220
Fiji	393	421	376	413	386	397
TOTAL	<u>2,979</u>	<u>3,123</u>	<u>3,391</u>	<u>3,428</u>	<u>3,244</u>	<u>3,617</u>
WORLD TOTAL	<u>73,340</u>	<u>77,739</u>	<u>77,818</u>	<u>83,247</u>	<u>89,001</u>	<u>87,551</u>

NOTE: Due to rounding, may not add to area total.

¹ Years shown are crop year of the crop-harvesting season. For chronological arrangement here, all campaigns which begin not earlier than May of one year, nor later than April of the following year, are placed in the same crop-harvesting year. The entire season's production of each country is credited to the May/April year in which harvesting and sugar production began. Refined beet sugar is generally converted to raw value by multiplying by 1.087, while refined cane sugar is multiplied by 1.07 to obtain the raw value equivalent. ²Preliminary. ³Other Africa includes Afar-Issas, Algeria, Angola, Cameroon, Congo (Brazzaville), Ghana, Liberia, Malawi, Nigeria, Somali Republic, Sudan, Tunisia, and Zambia. ⁴Includes khandsari. ⁵Since January 1, 1972, included in Japan. ⁶Other Asia includes Afghanistan, Iraq, Israel, Lebanon, Nepal, South Korea, South Vietnam, Sri Lanka (Ceylon), and Syria. Bangladesh is included in Other Asia beginning in 1971-72.

Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of U.S. Agricultural Attaches and Foreign Service Officers, results of office research, and related information.

WORLD CENTRIFUGAL SUGAR PRODUCTION IN SPECIFIED

Region and Country	1973	1974	1975	1976	1977 ²
	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons
NORTH AMERICA:					
United States:					
Mainland cane	1,381	1,470	1,827	1,670	1,543
Hawaii	1,040	1,107	1,050	1,100	1,102
Puerto Rico	290	299	308	272	248
Total U.S. cane	2,711	2,876	3,185	3,042	2,894
Sugar beets	3,217	2,915	4,019	3,882	3,307
Total U.S.	5,928	5,791	7,204	6,924	6,201
Caribbean:					
Cuba	6,393	6,944	6,834	6,393	6,614
Dominican Republic	1,316	1,251	1,377	1,500	1,543
Other countries	973	896	963	874	940
Total Caribbean	8,682	9,091	9,174	8,767	9,097
Other Mainland:					
Mexico	3,092	2,972	2,974	2,973	3,175
Canada	126	103	155	182	130
Central America	1,269	1,439	1,660	1,853	2,025
Total Other Mainland	4,487	4,514	4,789	5,008	5,330
Total North America ³	19,098	19,397	21,167	20,699	20,628
SOUTH AMERICA:					
Argentina	1,819	1,689	1,487	1,722	1,764
Brazil	7,671	8,157	6,834	8,267	9,480
Colombia	937	1,001	1,064	972	959
Peru	1,124	1,091	1,054	1,014	1,058
Venezuela	580	584	509	488	551
Other countries	1,116	1,323	1,602	1,592	1,602
Total South America ³	13,247	13,845	12,550	14,055	15,414
EUROPE:					
Western Europe:					
E.C.-9 ⁴					
Belgium-Luxemburg ..	865	683	797	826	832
Denmark	405	457	465	458	569
France	3,588	3,250	3,570	3,272	4,313
Germany, Fed. Rep. of	2,756	2,687	2,800	3,014	3,020
Ireland	208	158	219	208	215
Italy	1,274	1,113	1,546	1,929	1,312
Netherlands	917	856	1,008	1,042	898
United Kingdom	1,154	681	766	852	1,102
Total E.C.-9 ³	11,167	9,885	11,171	11,601	12,261
Non E.C.					
Austria	408	438	564	431	441
Greece	177	206	338	424	386
Spain	886	659	1,030	1,593	1,439
Sweden	291	336	305	333	375
Other countries	216	190	183	218	261
Total Non E.C. ³	1,978	1,829	2,420	2,999	2,902
Total Western Europe ³	13,145	11,714	13,591	14,600	15,163

SUGAR SUPPLY AND DISTRIBUTION BY COUNTRIES, 1974 (cont.)

(Metric Tons—Raw Value)

Countries	SUPPLY		DISTRIBUTION	
	Production	Imports	Consumption	Exports
<i>CENTRAL AMERICA: continued</i>				
Guatemala	365,948	0	173,403	143,890
Haiti	68,000 ¹	22 ⁴	53,000 ¹	15,938 ⁵
Honduras	67,000 ¹	43	60,000 ¹	7,800
Jamaica	378,445	0	103,433 ²	278,364
Leeward and Windward Isl.	26,732	3,231	16,000	23,861
Mexico	2,838,178	0	2,343,632	495,535
Netherlands Antilles	0	6,000 ⁶	7,500 ¹	0
Nicaragua	165,000 ¹	0	90,000 ¹	66,043
Panama	115,000 ¹	175 ⁴	55,000 ¹	59,445
Panama Canal Zone	0	2,500 ¹	2,500 ¹	0
Trinidad & Tobago	186,815	2,783	46,116 ²	138,783
Virgin Isl. (U.K.)	0	450 ¹	450 ¹	0
TOTAL	12,025,455	24,122	3,885,759	8,195,474
<i>SOUTH AMERICA:</i>				
Argentina	1,513,625	0	1,100,269	643,769
Bolivia	165,199	0	117,935	45,046
Brazil	6,930,876	0	4,576,549	2,302,656
Chile	116,489	173,875	327,133	11,373
Colombia	894,820	0	749,716	128,661
Ecuador	280,000 ¹	0	220,500 ¹	54,055 ⁵
Guyana	352,740	23	33,154 ²	311,703
Paraguay	76,381	0	54,687	21,087
Peru	992,464	0	523,986 ³	462,171
Surinam	11,000 ¹	603 ⁴	11,000 ¹	0
Uruguay	89,968	20,664	112,200 ²	0
Venezuela	551,413	47,383	519,859	2,071
TOTAL	11,974,975	242,548	8,346,988	3,982,592
<i>ASIA:</i>				
Afghanistan	9,000 ¹	54,079 ⁴	60,000 ¹	0
Bangladesh	108,045	0	102,279	0
Brunei	0	5,500 ¹	6,000 ¹	0
Burma	8,000 ¹	0	80,000 ¹	0
China	3,900,000	410,562	4,200,000	50,500 ⁶
(Taiwan Province)	830,000 ¹	0	305,000 ¹	553,478
Hong Kong	0	88,792	85,694 ²	3,096
India	4,488,694	0	3,790,295	536,288
Indonesia ³	935,000 ¹	120,696 ⁴	1,050,000 ¹	0
Iran	523,763	607,952 ⁶	886,854 ⁶	17 ⁵
Iraq	20,000 ¹	392,405 ⁴	400,000 ¹	0
Israel	20,000 ¹	156,745 ⁴	200,000 ¹	0
Japan	626,146	2,853,141	3,336,060	17,526
Jordan	0	50,837	50,882	0
Khmer Republic	0	8,500 ¹	11,500 ¹	0

SUGAR SUPPLY AND DISTRIBUTION BY COUNTRIES, 1974 (cont.)

(Metric Tons—Raw Value)

<u>Countries</u>	<u>SUPPLY</u>		<u>DISTRIBUTION</u>	
	<u>Production</u>	<u>Imports</u>	<u>Consumption</u>	<u>Exports</u>
<i>ASIA: continued</i>				
Korea (North)	0	100,000 ^b	100,000 ¹	0
Korea, Republic of	0	307,936	241,414 ^b	72,517
Kuwait	0	53,010	34,000	10,000 ¹
Laos	0	2,000 ⁴	3,500 ¹	0
Lebanon	11,000 ¹	81,272 ⁴	83,000 ¹	1,533
Macao ³	0	2,958	2,923	0
Malaysia	20,000 ¹	352,096 ⁴	340,000 ¹	11,714 ^b
Maldives, Republic of	0	2,500 ¹	3,500 ¹	0
Mongolia	0	21,652 ⁴	28,000 ¹	0
Nepal	9,000 ¹	8,000	18,000 ¹	0
Pakistan	520,000 ¹	56	525,000 ¹	0
Persian Gulf	0	50,000 ^b	50,000 ¹	432
Philippines	2,525,000 ¹	0	850,000 ¹	1,468,351 ⁵
Saudi Arabia	0	66,250 ⁴	120,000 ¹	0
Singapore	0	112,057	91,456	23,345
Southern Yemen, Rep. of	0	38,628 ⁴	40,000 ¹	0
Sri Lanka	21,360	46,395	67,728	0
Syrian Arab Republic	18,000 ¹	225,480 ⁴	220,000 ¹	88 ⁵
Thailand	985,486	0	499,630	563,946
Timor ³	0	300 ¹	850 ¹	0
Vietnam (North)	0	86,670 ⁴	77,000 ¹	7,185 ⁵
Vietnam (South)	0	50,000 ¹	150,000 ¹	0
Yemen	0	22,989 ⁴	28,000 ¹	0
TOTAL	15,650,494	6,379,465	18,138,565	3,320,016
<i>OCEANIA:</i>				
Australia	2,937,868	0	783,659	1,807,949
British Oceania	0	4,000 ¹	4,000 ¹	0
Fiji	297,596	176	30,120	266,297
New Zealand	0	184,457	183,362	516
U.S. Oceania	0	5,500 ¹	5,500 ¹	0
Western Samoa	0	3,000 ¹	3,000 ¹	0
TOTAL	3,235,464	197,133	1,009,641	2,074,762
<i>AFRICA:</i>				
Algeria	25,000 ¹	408,256 ⁴	330,000 ¹	0
Angola ³	70,000 ¹	11,957	80,000 ¹	7,500 ¹
Botswana	0	12,000 ¹	12,000 ¹	0
Burundi	0	3,000 ¹	3,000 ¹	0
Cameroon	14,000 ¹	16,500 ^b	30,000 ¹	0
Cape Verde Islands ³	0	5,698	4,159	0
Central African Republic	0	2,730 ^b	3,400 ¹	0
Chad	0	21,000 ^b	25,000 ¹	0
Congo (Brazzaville)	28,623	0	8,466	23,007
Dahomey	0	7,500 ^b	8,200 ¹	0

Source: International Sugar Organization.

SUGAR SUPPLY AND DISTRIBUTION BY COUNTRIES, 1974 (cont.)

(Metric Tons—Raw Value)

Countries	SUPPLY		DISTRIBUTION	
	Production	Imports	Consumption	Exports
<i>AFRICA: continued</i>				
Egypt, Arab Republic of	534,000	103,000	637,400	0
Equatorial Guinea	0	800 ¹	800 ¹	0
Ethiopia	130,435	0	119,376	10,457
Gabon	0	4,257	3,907	0
Gambia	0	2,750 ²	2,800 ¹	0
Ghana	5,217	47,065	51,226 ¹	0
Guinea	0	12,500 ²	13,000 ¹	0
Guinea Bissau ³	0	2,300 ¹	2,300 ¹	0
Ivory Coast	0	49,702	54,457	0
Kenya	178,596	86,527	243,056	0
Liberia	0	8,000 ¹	8,000 ¹	0
Libya	0	92,236 ⁴	95,000 ¹	0
Malagasy Republic	121,887	0	74,595	14,026
Malawi	47,384	4,243	35,660	18,316
Mali	15,000 ¹	9,647 ⁴	25,000 ¹	0
Mauritania	0	24,375	22,305	0
Mauritius	737,966	24	34,982	725,793
Morocco	260,000 ¹	286,623 ⁴	480,000 ¹	10,000 ¹
Mozambique ³	300,000 ¹	0	130,000 ¹	177,888 ²
Niger	0	10,750 ¹	11,500 ¹	0
Nigeria	40,000 ¹	71,279 ⁴	180,000 ¹	0
Rhodesia	255,000 ¹	0	125,000 ¹	132,000 ²
Rwanda	521	2,446	3,000 ¹	0
St. Helena	0	220 ¹	220 ¹	0
St. Thome and Principe ³	0	750	790	0
Senegal	0	63,550 ⁴	78,000 ¹	0
Seychelles	0	1,614 ⁴	2,500 ¹	0
Sierra Leone, Republic of	0	21,739 ¹	24,500 ¹	0
Somalia	32,965	13,140	48,174 ²	0
South Africa	1,970,104	1,097	1,139,555	826,982
Spanish Sahara	0	350 ¹	360 ¹	0
Spanish Poss. in N. Africa	0	6,225	7,000 ¹	0
Sudan	120,000 ¹	130,000 ²	270,000 ¹	0
Swaziland	204,778	0	16,468	190,111
Tanzania ³	105,422	31,462	133,965	2,401
Togo	0	4,348 ²	5,000 ¹	0
Tunisia	4,359	140,609	138,069 ²	0
Uganda	43,933	2,253	48,968	0
Upper Volta	0	8,038 ¹	9,000 ¹	0
Zaire, Republic of	67,512	23,262 ¹	80,000 ¹	0
Zambia	64,782	11,815	86,070	0
TOTAL	5,377,484	1,767,646	4,946,228	2,138,481
WORLD TOTAL	78,697,996	21,568,456	79,765,699	21,732,604

¹Estimated. ²Calculated. ³Tel Quel. ⁴As reported by countries of origin. ⁵As reported by countries of destination. ⁶Partly estimated. ⁷Comores, F. Territ. of Afars & Issas, French Oceania, New Caledonia, New Hebrides and St. Pierre & Miquelon.

NON-CENTRIFUGAL SUGAR:¹

Production in Specified Countries, Average 1965-66/1969-70, Annual 1970-71/1974-75²
(IN THOUSANDS OF SHORT TONS)

Region and Country	Average 1965-66/ 1969-70	1970-71	1971-72	1972-73	1973-74	1974-75 ³
NORTH AMERICA:						
Costa Rica	44	46	44	30	44	44
El Salvador	28	14	14	11	18	18
Guatemala	47	50	50	60	55	57
Mexico	129	127	125	127	127	129
Nicaragua	16	14	13	13	13	13
Panama	4	2	2	8	2	2
TOTAL	267	253	248	248	259	263
SOUTH AMERICA:						
Brazil	N.A.	N.A.	N.A.	220	220	220
Colombia	726	772	805	744	772	827
Ecuador	41	44	44	44	44	44
Peru	14	14	14	15	14	14
Venezuela	41	40	39	36	39	44
TOTAL	823	870	902	1,060	1,089	1,150
ASIA:						
Burma	160	160	160	157	143	143
China, Peoples Rep.	760	805	810	816	904	898
China, Rep. of (Taiwan)	28	29	25	28	29	28
India	5,732	7,165	7,165	6,614	6,724	6,724
Indonesia	332	340	254	202	165	193
Japan	7	4	3	14	13	12
Nansei-Nanpo (Ryukyu)	15	15	15	4	4	4
Pakistan	706	772	1,323	1,543	1,520	1,543
Philippines	64	51	51	63	66	66
Thailand	198	248	280	298	386	386
Vietnam South	23	10	10	11	11	12
TOTAL	8,026	9,598	10,095	9,744	9,961	10,006
WORLD TOTAL	9,116	10,721	11,246	11,053	11,310	11,419

NOTE: Due to rounding, may not add to area total.

N.A.=Not available.

¹Noncentrifugal sugar includes all types of sugar produced by other than centrifugal process which is largely for consumption in the relatively few areas where produced. The estimates include such kinds known as piloncillo, panela, papelón, chancaca, radura, jaggery, gur, muscovado, panocha, etc. ²Years shown are last year's crop-harvesting season. For chronological arrangements here all campaigns which begin not earlier than May of one year, nor later than April of the following year, are placed in the same crop-harvesting year. The entire season's production of each country is credited to the May/April year in which harvesting and sugar production began. ³Preliminary. ⁴Since January 1, 1972, included in Japan.

Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. Agricultural Attaches and Foreign Service Officers, results of office research and related information.

NEW YORK COFFEE AND SUGAR EXCHANGE, INC.

The world's largest market for trading in raw sugar is New York. Here are located the principal buyers and sellers, or their agents, of raw sugar for the U.S. domestic market. In addition, a very large proportion of the sugars sold to world market buyers of sugar is also channeled through New York.

Of extreme importance in this market is the New York Coffee & Sugar Exchange, Inc.,

whereon sugars for both the U.S. and world markets are bought and sold for future delivery. The Exchange is located at 79 Pine Street, New York, N.Y. The Sugar Exchange, like all organized commodity markets, provides the opportunity for various vital economic functions to be performed.

The Exchange provides a market in which the sugar producer may hedge (sell) all or part

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PRICES OF WHITE REFINED SUGAR IN SELECTED COUNTRIES

Representative Prices for Years 1973 and 1974 (U.S. Cents per Pound)

Countries	Locality	Representative Prices			
		1973		1974	
		Wholesale	Retail	Wholesale	Retail
<u>NORTH AMERICA</u>					
Canada	Montreal	13.8	16.3	39.8	41.5
U.S.A	whole country	14.1	15.1	32.3	34.4
<u>CENTRAL AMERICA</u>					
Belize	Belize	6.1	6.9	6.8	7.7
Dominican Republic	whole country	6.0	8.0	.....	.....
El Salvador	whole country	.....	.....	9.1	10.0
Guatemala	whole country	7.1	8.0	7.0	8.0
Jamaica	whole country	13.0	13.5	13.0	13.3
Trinidad & Tobago	whole country	12.0	12.5	12.0	12.5
West Indies:					
Barbados	whole country	18.5	23.0	48.5	60.5
Leeward Islands:					
St. Kitts-Nevis	whole country	17.0	26.0	.....	.....
<u>SOUTH AMERICA</u>					
Argentina	.....	16.7	18.0	20.0	22.1
Bolivia	whole country	.....	.....	15.0	15.5
Brazil	Rio de Janeiro	.....	.....	9.06	9.46
Chile	Santiago	.....	.....	27.0	28.0
Ecuador	whole country	4.7	5.5	.....	.....
Guyana	whole country	16.1	17.2	40.1	43.3
Peru	whole country	6.3	6.6	6.3	6.6
Venezuela	whole country	.....	.....	12.2	13.1
<u>EUROPE</u>					
Austria	whole country	11.3	13.1	11.8	13.7
Belgium	whole country	.....	21.5	.....	.....
Cyprus	whole country	16.6	17.4	31.7	36.5
Denmark	whole country	14.0	19.0	.....	.....
Finland	whole country	18.2	23.8	28.7	36.6
France	whole country	.....	17.9	.....	.....
German Dem. Rep.	whole country	.....	.....	14.4	15.5
Germany, Fed. Rep. of	whole country	.....	19.3	.....	.....
Netherlands	whole country	.....	19.4	.....	.....
Norway	Oslo	21.8	27.5	50.7	56.4
Portugal	whole country	12.9	14.5	.....	.....
Sweden	whole country	14.7	21.4	21.9	29.8
Switzerland	whole country	16.8	21.3	.....	.....
Turkey	Ankara	11.7	12.6	16.0	18.6
United Kingdom	whole country	.....	12.6	.....	.....
<u>ASIA</u>					
Bangladesh	whole country	25.7	26.6	27.2	27.7
Hong Kong	whole country	26.0	35.4	32.6	44.9
India	Kanpur	13.3	13.4	11.8	11.9
Japan	Tokyo	21.8	26.3	26.9	34.7
Jordan	Amman	.....	.....	.....	22.2
Korea, Rep. of	whole country	20.1	21.8	36.0	40.0
Kuwait	whole country	.....	.....	14.1	15.5
Lebanon	whole country	10.6	11.4	.....	.....
Malaysia	East	12.5	15.0	.....	.....
	West	11.0	13.5	.....	.....
Saudi Arabia	whole country	15.0	17.0	.....	.....

Continued on Next Page

PRICES OF WHITE REFINED SUGAR IN SELECTED COUNTRIES (Cont.)

Representative Prices for Years 1973 and 1974 (U.S. Cents per Pound)

Countries	Locality	Representative Prices			
		1973		1974	
		Wholesale	Retail	Wholesale	Retail
ASIA (cont.)					
Singapore	whole country	12.9	13.3	13.9	14.8
Thailand	whole country	9.2	9.8	9.6†	10.3†
Vietnam (South)	whole country	22.6	24.9	.....	.....
AFRICA					
Egypt, Arab Republic		6.7	6.8	.....	.....
Ethiopia	whole country	15.1	16.4	15.0	16.0
Ghana	.....	.....	.....	17.3	19.4
Malagasy Rep.	Tananarive	9.5	12.3	11.0	14.4
Malawi	whole country	9.0	12.0	.....	.....
Mauritius	whole country	4.0	5.0	4.0	5.0
Somalia	whole country	.....	.....	30.8	32.8
South Africa	Durban	8.8	9.7	12.5	14.0
Swaziland	whole country	.....	.....	9.4	14.1
Tunisia	whole country	.....	.....	17.2	17.7
OCEANIA					
Australia	Capital Cities	.....	.....	11.5	13.5
Fiji	main centers	5.6	6.8	6.3	8.8
New Zealand	4 main cities	12.5	13.8

†Bangkok

†Whole country.

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of his anticipated production and thus guarantee his price. Amongst other advantages, this facilitates financing. Conversely, the sugar buyer can determine a price far in advance by buying on the Exchange. This enables the buyer to anticipate his requirements and establish his cost.

Each day during trading hours, there is a ready market for buying and selling. This is not the case in actuals.

The Exchange is a public market with all quotations and trades a matter of open record. This permits all who are interested in sugar to know its value from day to day and, if necessary, minute to minute. Through the Exchange function, there is recorded the meeting of minds of buyers and sellers as to values as represented by trades or bid and asked prices.

The Exchange serves as a guidepost for the future by providing a means of trading for delivery in position as much as a year and a half ahead. The quotations, representing, as they do, the thinking of the keenest students of the sugar market, foreshadow coming events. The Exchange disseminates information pertaining to sugar received from all corners of the earth.

To the Exchange trading floor come buying

and selling orders which may emanate from all parts of the sugar world—from producers, refiners, merchants, sugar consumers. The public is also represented through the speculative activity which is a necessity for the creation of a broad, stable, realistic commodity market.

In the "ring," which is the designation of the area within which trades may be made, specialists known as "floor brokers" execute the buying and selling orders of their clients. All trading is done by open outcry and there are adequate safeguards to assure equitable treatment for all traders, be they large or small.

At the conclusion of each day's trading, all purchases and sales are submitted by the broker members of the New York Coffee & Sugar Clearing Association to that Association. The Clearing Association intervenes as a principal in each transaction. It becomes the buyer on each sale made and the seller on each purchase made—thus protecting the integrity of all contracts made on the Exchange.

The brokers deposit margins with the Clearing Association as a guarantee that the contracts will be fulfilled. These margins are, moreover, maintained adequately each day as the market fluctuates.

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An additional protection is afforded through the Guarantee Fund of the Clearing House which is created by a deposit made by each firm at the time it joins the Clearing Association. The Guarantee Fund is available to make good any default by a member firm.

SUGAR FUTURES CONTRACTS DOMESTIC NO. 12 CONTRACT

The Domestic No. 12 raw sugar futures contract was initiated on October 1, 1974. The terms of the contract are similar to those of existing commercial contracts for actual raw sugar between sellers and refiners. Delivery must be made at a sugar refinery selected by the receiver or buyer at delivery points in New York, Philadelphia, Baltimore or New Orleans. Trading is permitted for delivery during an 18 month period. However, the trading months will be January, March, May, July, September, and November. The contract is for 50 long tons (112,000 lbs) of raw centrifugal cane sugar based on 96 degrees average polarization outturn.

Price quotations are on a pound price basis with minimum fluctuations of 1/100 or .01 cents per pound. Trading limits are 2¢ per pound above or below the previous day's settlement price with a maximum range of 4¢ per pound.

The No. 12 Contract replaces the No. 10 Contract which was phased out in July 1975.

WORLD NO. 11 CONTRACT

The World No. 11 raw sugar contract was initiated on May 5, 1970. It is truly international in scope and services the major non-communist sugar producing nations. Delivery points were amended in 1974 to include destinations in the United States as well as a port in almost any cane sugar producing country. However, shipment to the United States is under the proviso that it is not contrary to the laws of the country of origin.

Under the terms of the contract, both deliverer and receiver have considerable latitude. The deliverer or seller may select a port in one of a number of delivery points. The receiver or buyer charters the ocean-going vessel and determines the final destination of the raw sugar.

Growths of Argentina, Australia, Brazil, Belize (British Honduras), Colombia, Costa Rica, Dominican Republic, El Salvador, Ecuador, Fiji Islands, French Antilles, Guatemala, Haiti, Honduras, India, Jamaica, Mauritius, Mexico, Nicaragua, Peru, Republic of Congo (Brazzaville), Republic of the Philippines, Reunion, South Africa, Swaziland, Taiwan, Thailand, Trinidad and Venezuela are deliverable f.o.b. and stowed in bulk.

The trading months are January, March, May, July, September and October.

The trading unit, price quotations, minimum fluctuations, daily trading limits, trading period and basic grade are identical to those cited for the No. 12 Contract.

N.Y. TRADING HOURS

Trading hours of the Exchange are: *Domestic Sugar Contract No. 12 - 10:00 a.m. to 2:55 p.m.*
World Sugar Contract No. 11 - 10:00 a.m. to 3:00 p.m.

SPOT SUGAR PRICES DOMESTIC NO. 12 SPOT

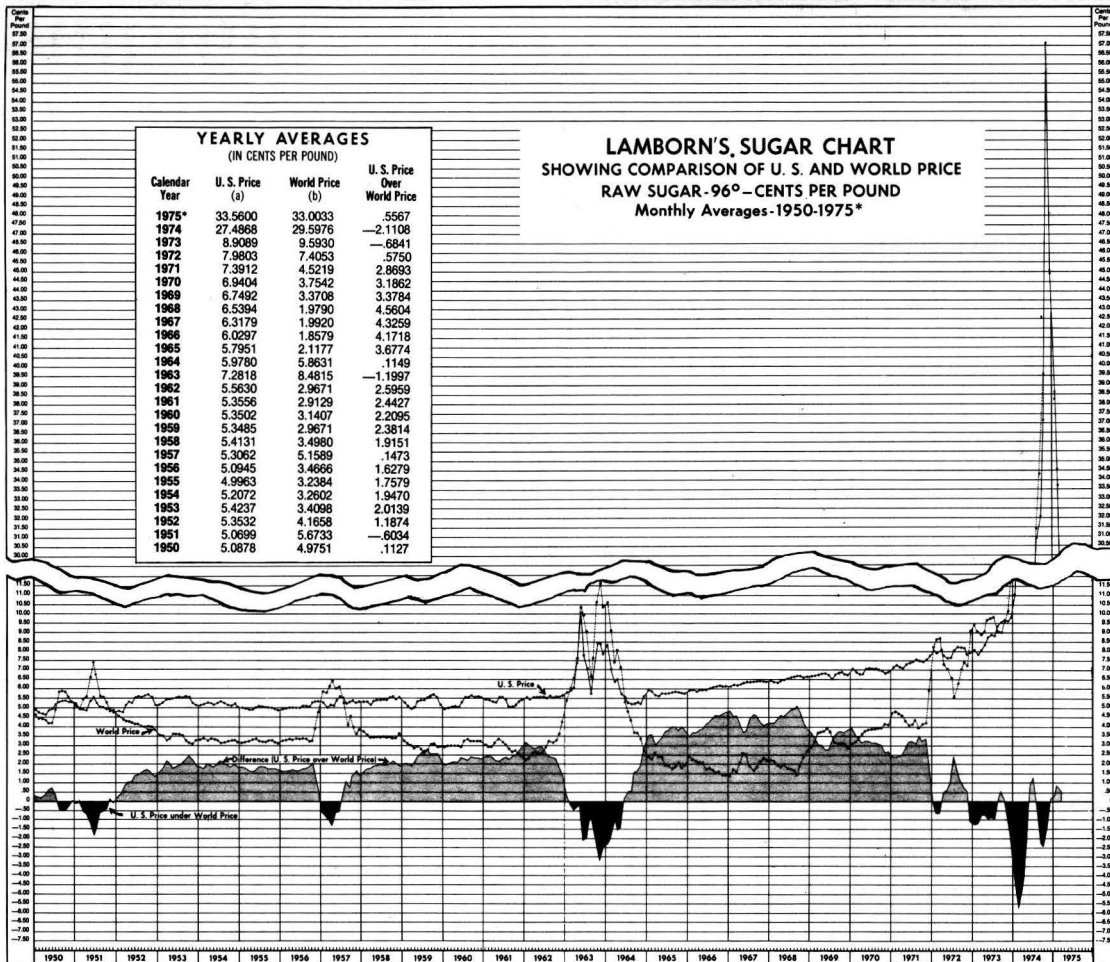
The domestic No. 12 spot sugar price is that value established by the Exchange for raw centrifugal cane sugar basis 96 degree polarization and deliverable in North of Hatteras ports (New York, including Yonkers, Philadelphia or Baltimore) and New Orleans (including Gramercy, Burnside and Reserve). Five members of the New York Coffee and Sugar Exchange comprise what is called the Spot Domestic Sugar Quotation Committee. In order to represent both buyer's and seller's interest, two committee members are generally selected from refiner interests and three from trade and commission houses.

In setting a spot price for a given day the Quotation Committee is guided by well-established but flexible criteria. The committee takes into consideration not only actual sales of raw sugar but also bids and offers and price changes of nearby futures. "Against Actuals" Trades (a futures transaction involving the simultaneous purchase and sale between two principals of an amount of raw sugar and its equivalent in futures) as well as inter-refiner and inter-operator business are excluded from the committee's consideration.

WORLD NO. 11 SPOT

The world spot price is determined in much the same way as the domestic No. 12 spot price. This quotation reflects the price of raw centrifugal cane sugar, 96 degree polarization, f.o.b. and stowed in bulk at usual delivery ports in the Caribbean, Brazil and other areas. Sales between the first and last days of the month providing for shipment during the same or following two months are considered within the spot delivery range. In the case of bids & offers within the spot range, the spot price may not be set lower than the bid nor higher than the offer, so that if sales had resulted, they would have qualified as spot sales. In the absence of sales, bids & offers, the Spot World Sugar Quotations Committee studies other transactions not strictly falling into the spot range.

Both the Domestic and World Spot Price Quotations are issued by their respective committees at approximately 2:00 p.m. on Exchange business days.



Part V

MISCELLANEOUS

INDUSTRY RESEARCH & EDUCATION

The sugar industry supports a broad program of research and education through two agencies—

THE SUGAR ASSOCIATION, INC.
INTERNATIONAL SUGAR RESEARCH
FOUNDATION, INC.

Both are non-profit membership corporations organized under the laws of the State of New York. Members include cane sugar refiners, sugar beet processors and raw sugar producers in the United States.¹ The International Sugar Research Foundation is also supported by sugar companies and associations in Canada, Great Britain, Belgium, Ireland, Finland, Portugal, Panama and South Africa. Each of the corporations has distinct functions to perform.

The Sugar Association, incorporated in 1949, enters into membership arrangements with the various American sugar companies, exercises control and direction in matters of general policy and allocates funds to carry out industry programs. The Association's functions include public relations, guidance of the American industry's research activities, educational work, advocacy of proper standards for processed foods and affirmation of the rightful place of sugar in the diet of man and as a raw material for industry. It works with ISRF, industrial users of sugar and with the technical services of cane sugar refiners, beet sugar processors, and raw sugar producers. It has developed a notably successful series of publications on sugar for consumer and media use. The most recent and authoritative is "Sugar in the Diet of Man."

International Sugar Research Foundation was incorporated in 1943 as Sugar Research Foundation, Inc., for the purposes of increasing knowledge of the rightful place of sugar in the diet, the optimum levels in food products and the potentials of sugar for use for non-food chemical and industrial purposes, all with the objective of increasing the consumption of sugar in ways consistent with the public interest. The change to International Sugar Research Foundation took place on July 1, 1968. Since 1943, several hundred research projects have been supported by Foundation grants to educational and other non-profit research institutions and by contract with research organizations with total expenditures of over \$6 million.

Food technology is of prime importance because about 98% of all the sugar which is distributed in the United States is consumed

as food, and 73% of it is in the form of processed foods, beverages and confections. Research has demonstrated that many food processors have underestimated the sweetness level or sugar content which consumers prefer in, for example, canned peaches, dessert cherries, ice cream, peas and whole kernel corn. Sugar has been found to have preeminent properties in enhancing the flavor of foods.

Research to develop new non-food uses for sugar in the chemical and manufacturing industries is another important field of work. No major non-food use has matured, but the sugar esters surfactants continue to attract attention for potential commercial production because of the current emphasis on reduction of water pollution. Their potential usefulness in drying oils for surface coatings, as developed by the Foundation's sponsored research, is being assessed. Current policies have placed additional emphasis upon research in the area of public health and in making all research results available for publication so they may be of increasing benefit to the member companies.

The Sugar Association and the International Sugar Research Foundation exist for the purposes of serving the industry by learning the truth about its product, by disseminating through education the truth about sugar, and through research, by seeking new uses for sugar as well as increasing sugar knowledge generally.

¹The Sugar Association, Inc. is the U.S. member of the International Sugar Research Foundation. Hawaiian Sugar Planters' Association and California and Hawaiian Sugar Company, through this membership in the Sugar Association, participate in the activities of the International Sugar Research Foundation.

GLOSSARY

BAGASSE: Fibrous residue remaining after sugarcane has been milled to extract the sugar-containing juices.

BLACKSTRAP MOLASSES: The final product remaining after all the commercially recoverable sucrose has been removed from the juices expressed from cane. This is a dark colored, heavy, viscous liquid.

BRIX: The measure of density of a solution containing sucrose as determined by a hydrometer.

CALORIE: Unit expressing the energy-producing value of food. A pound of sugar contains 1,790 calories. A standard teaspoon contains 18.

DEXTROSE: A widely occurring crystallizable, simple sugar which contains 6 carbon atoms in contrast to 12 found in sucrose. It is obtained in commercial quantities by the action of acid on cornstarch. It is less sweet than sucrose.

FRUCTOSE: An alternate chemical name for levulose.

GLUCOSE: (1) An alternate chemical name for dextrose. (2) A name given to corn syrups which are obtained by the action of acids and/or enzymes on cornstarch. Commercial corn syrups are nearly colorless and very viscous. They consist principally of dextrose and another sugar, maltose, combined with gummy organic materials known as dextrans, in water solution.

GUR: Cane juice, concentrated nearly to dryness by boiling over an open fire, without centrifuging and with no other purification than by skimming. This ancient process is still used for producing a large share of the sugar consumed in India and some other countries. The crude product is high in glucose and correspondingly low in sucrose.

HIGH FRUCTOSE CORN SYRUP: High fructose corn syrups (HFCS) are produced by the enzymatic conversion of a portion of the glucose in corn syrup to fructose.

Composition of presently available products ranges from 50 to 55% glucose and 42 to 47% fructose on dry solids, the balance being other saccharides. Dry solids average about 71% on total weight. The product is roughly comparable to invert syrup made from sucrose in terms of sweetness and physical properties.

HIGH TEST MOLASSES: A concentrated, clarified cane juice which has been inverted (usually about 2/3) to prevent sucrose from crystallizing at the high concentrations normally employed.

INVERT OR INVERT SUGAR: This is the mixture of equal parts of dextrose and levulose pro-

duced by the action of acid or enzymes on solutions of sucrose.

LEVULOSE: A highly soluble, simple sugar, also containing 6 carbon atoms. It crystallizes with great difficulty. It is not produced in commercial quantities as such but used in considerable quantities in combination with dextrose and sucrose in invert sugars. It is generally considered sweeter than sucrose.

LIQUID SUGAR: A concentrated solution of refined sucrose or of a mixture of sucrose and invert sugar.

MASSECUITE: A dense mass of sugar crystals mixed with mother liquor obtained by evaporation.

MOLASSES: The mother liquor separated from sugar crystals in massecuite.

MUSCOVADO: Unrefined or raw sugar obtained from the juice of the sugarcane by evaporation and draining off the molasses.

PANELA: Low-grade brown sugar; generally comes in round chunks that resemble loaves of bread.

PANOCHA: Mexican raw sugar.

PAPELON: Crude brown sugar produced especially in Cuba and Northern South America.

PLANT CROP: The sugarcane crop started with seed pieces (setts).

POLARIZATION: Designated as "pol" and is the value determined by direct or single polarization of the normal weight solution (of sucrose) in a saccharimeter or polariscope. (Based on Spencer and Meade.)

RAPADURA: Raw sugar in Brazil.

RATOON: Second and subsequent crops grown from the root systems of previous plantings of sugarcane. Usually one or more ratoon crops are harvested before the fields are plowed and replanted.

SOFT SUGARS: These are highly refined, dark colored, molasses-flavored sugars which are frequently called brown sugars. They contain non-sucrose materials.

SUCROSE: A sweet crystallizable, colorless sugar which constitutes the principal sugar of commerce. Refined cane and beet sugars are essentially 100% sucrose. Under certain conditions sucrose breaks down to dextrose and levulose.

SYRUP: Concentrated clarified cane juice before crystallization.

TEL QUEL: Literally, such as (it is). When used describing sugar it means "as made," hence of a polarization usually varying among mills and producing areas.

TURBINADO: Direct consumption raw sugar of high polarization which must be dried in a granulator to a very low moisture content.

