

## Section 22

# MANUFACTURES

This section presents statistics on the manufacturing segment of the economy, including sugar processing and pineapple canning.

The number of manufacturing establishments in Hawaii increased from 672 in 1963 to 773 in 1972 and 946 in 1977. The value added by manufacture rose from \$326 million in 1967 to \$410 million in 1972 and \$791 million in 1977. Three-fourths of all manufacturing activity in the State was on Oahu in 1977. Food processing -- mostly sugar and pineapple -- accounted for more than 44 percent of the value added by manufacture in that year. Between 1969 and 1979, the general excise and use tax base increased 55 percent for sugar processing, 41 percent for pineapple canning, and 102 percent for all other manufacturing. There were three pineapple canneries and 14 sugar mills in Hawaii in mid-1979, in each case about half as many as ten years earlier. The production of canned pineapple fruit and juices in 1979 amounted to 19 million actual cases, well below the levels of earlier years. Sugar production in 1979 amounted to 1.06 million short tons, about the same level as in other recent years. The value of sugar production (including commercial molasses) was \$346 million, well below the record set in 1974 but still the third best year in Island history. Important manufactures other than food processing include apparel (\$45.5 million in value added in 1977), printing and publishing (\$94.4 million), and prefabricated metal products (\$22.8 million).

Sources for data on this subject include the United States Census of Manufactures, most recently conducted for 1977, the Annual Survey of Manufactures, and publications of the Hawaii State Department of Agriculture and Department of Taxation, Hawaiian Sugar Planters' Association, and Pineapple Growers Association of Hawaii. Historical Statistics of Hawaii, Section 16, reviews the figures for earlier years. Statistics for the nation as a whole appear in Section 29 of the Statistical Abstract of the United States: 1979.

Table 441.--MANUFACTURES: 1963 TO 1977

Year	All employees		Production workers		
	Number (1,000)	Payroll (millions of dollars)	Number (1,000)	Hours (millions)	Wages (millions of dollars)
1963 ..	25.1	109.0	18.7	33.2	67.5
1964 ..	25.0	113.7	18.3	33.1	69.4
1965 ..	25.4	118.1	18.7	34.0	73.5
1966 ..	24.8	123.8	18.7	34.3	78.2
1967 ..	25.4	139.6	19.0	35.9	86.9
1968 ..	23.2	134.0	17.4	32.2	83.3
1969 ..	23.9	145.3	17.9	33.2	90.8
1970 ..	24.8	168.7	18.1	35.3	102.8
1971 ..	24.4	176.6	17.5	34.3	105.7
1972 ..	24.8	191.1	17.7	33.1	113.7
1973 ..	24.3	195.5	17.5	31.9	117.9
1974 ..	22.5	210.4	15.8	28.8	116.6
1975 ..	23.7	236.7	16.9	30.6	133.0
1976 ..	24.2	266.4	17.1	30.8	153.9
1977 ..	25.1	276.4	17.2	31.3	160.3
Year	Number of establish- ments	Value added by manufacture (millions of dollars)	Cost of materials 1/ (millions of dollars)	Value of shipments 1/ (millions of dollars)	New capital expenditures (millions of dollars)
1963 ..	672	261.1	(NA)	(NA)	15.4
1964 ..	(NA)	263.8	372.0	638.4	17.7
1965 ..	(NA)	292.1	365.9	655.5	17.2
1966 ..	(NA)	310.8	371.5	680.9	24.1
1967 ..	697	326.2	399.6	723.4	26.0
1968 ..	(NA)	353.9	381.9	737.1	15.6
1969 ..	(NA)	351.0	408.3	758.1	19.8
1970 ..	(NA)	408.6	451.1	856.9	40.5
1971 ..	(NA)	435.0	465.9	899.9	28.0
1972 ..	773	410.0	548.3	955.6	46.7
1973 ..	(NA)	496.1	592.9	1,086.4	36.6
1974 ..	(NA)	913.8	952.9	1,848.2	50.2
1975 ..	(NA)	685.4	1,116.2	1,800.3	51.5
1976 ..	(NA)	700.3	1,156.8	1,854.8	55.6
1977 ..	946	790.9	1,173.4	1,976.8	53.0

NA Not available.

1/ Aggregate cost of materials and value of shipments figures for manufacturing industries include extensive duplication, since products of some industries are used as materials by others.

Source: U.S. Bureau of the Census, 1977 Census of Manufacturers, Geographic Area Series, Preliminary Report, Hawaii, MC77-A-12(P), August 1979.

Table 442.-- MANUFACTURES, BY COUNTIES: 1977

County	All establishments		All employees		Production workers	
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (millions of dollars)	Number (1,000)	Hours (millions)
State total	946	231	25.1	276.4	17.2	31.3
Honolulu .....	758	191	19.7	214.9	13.1	23.1
Hawaii .....	99	16	2.4	30.3	1.9	3.6
Kauai .....	26	6	0.7	8.3	0.5	1.0
Maui .....	63	18	2.3	22.9	1.7	3.6
County	Production workers-- con.	Value added by manufacture (millions of dollars)	Cost of mate- rials 1/ (millions of dollars)	Value of ship- ments 1/ (millions of dollars)	New capital expend- itures (millions of dollars)	
	Wages (millions of dollars)					
State total	160.3	790.9	1,173.4	1,976.8	53.0	
Honolulu .....	117.0	591.2	982.3	1,584.8	33.2	
Hawaii .....	22.0	83.0	73.8	157.7	12.3	
Kauai .....	5.6	25.4	44.9	70.3	2.6	
Maui .....	15.6	91.3	72.4	164.0	4.9	

Note: Payroll and shipments data for small establishments--typically single-unit companies with less than 20 employees (cutoff varied by industry)--were obtained from administrative records of other government agencies instead of from census report forms. These data were then used in conjunction with industry averages to estimate the other items in the table for these small establishments. This technique was also used for a few other establishments whose reports were not received at time data were tabulated.

1/ Aggregate of cost of materials and value of shipments figures for industry groups (2- and 3-digit) and for all manufacturing industries includes extensive duplication, since products of some industries are used as materials by others.

Source follows next table.

Table 443.-- MANUFACTURES, BY INDUSTRY GROUPS AND SELECTED INDUSTRIES: 1977

1972 SIC code	Industry group and industry <u>1</u> /	All establishments		All employees		Production workers	
		Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (millions of dollars)	Number (1,000)	Hours (millions)
	All industries .....	946	231	25.1	276.4	17.2	31.3
20	Food and kindred products .....	217	62	10.8	112.6	8.0	14.9
202	Dairy products .....	11	5	0.5	7.5	0.2	0.4
203	Preserved fruits and vegetables .....	38	6	3.6	28.0	3.2	5.4
2033	Canned fruits and vegetables .....	12	5	3.4	26.2	3.0	5.1
205	Bakery products .....	24	7	0.8	9.8	0.4	0.8
2051	Bread, cake, and related products ..	20	6	0.7	9.1	0.4	0.7
206	Sugar, confectionery products ...	34	20	3.8	44.4	2.8	5.8
2061	Raw cane sugar .....	15	14	3.3	39.5	2.4	5.1
208	Beverages .....	17	6	0.5	7.1	0.2	0.4
209	Misc. foods, kindred products ...	66	7	1.1	8.8	0.8	1.3
23	Apparel, other textile products	157	55	3.8	25.1	3.2	5.3
232	Men's and boys' furnishings .....	30	11	0.7	4.5	0.6	1.1
233	Women's and misses' outerwear ...	89	33	2.5	16.3	2.1	3.4
25	Furniture and fixtures .....	30	6	0.7	6.3	0.3	0.6
251	Household furniture .....	18	5	0.6	5.3	0.3	0.5
27	Printing and publishing .....	157	27	2.5	34.9	1.3	2.1
2711	Newspapers .....	25	12	1.5	21.0	0.6	0.9
275	Commercial printing .....	84	7	0.6	7.7	0.4	0.7
28	Chemicals and allied products ..	23	6	0.5	5.4	0.3	0.5
34	Fabricated metal products .....	36	9	0.8	10.8	0.7	1.3
37	Transportation equipment .....	21	4	0.6	10.8	0.5	1.0
373	Ship, boat building, repairing ..	16	4	0.6	10.5	0.5	1.0
39	Misc. manufacturing industries	83	11	1.2	7.1	0.9	1.4
	Central admin. offices, auxiliaries	22	9	1.4	22.9	-	-

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Table 443.-- MANUFACTURES BY INDUSTRY GROUPS AND SELECTED INDUSTRIES: 1977 - Con.

1972 SIC code	Industry group and industry <u>1/</u>	Production workers - con.	Value added by manu- facture	Cost of mate- rials <u>2/</u> (millions of dollars)	Value of ship ments <u>2/</u> (millions of dollars)	New capital expendi- tures (millions of dollars)
		Wages (millions of dollars)	(millions of dollars)			
	All industries .....	160.3	790.9	1,173.4	1,976.8	53.0
20	Food and kindred products .....	73.0	349.2	448.2	796.9	25.8
202	Dairy products .....	3.0	20.3	41.1	61.4	1.2
203	Preserved fruits and vegetables ..	22.3	91.7	96.5	188.1	1.5
2033	Canned fruits and vegetables .....	21.0	87.1	89.8	176.9	1.2
205	Bakery products .....	5.0	20.6	13.3	33.8	0.6
2051	Bread, cake and related products ..	4.6	18.2	11.0	29.1	0.5
206	Sugar, confectionery products ...	31.1	159.8	165.3	325.2	18.3
2061	Raw cane sugar .....	27.9	145.0	141.2	286.2	17.8
208	Beverages .....	2.4	21.1	30.6	51.4	2.1
209	Misc. foods, kindred products ...	5.1	19.0	32.9	51.7	0.9
23	Apparel, other textile products	16.7	45.5	33.2	78.4	(D)
232	Men's and boys' furnishings .....	3.2	7.6	6.5	14.1	(D)
233	Women's and misses' outerwear ...	10.5	27.5	20.0	47.4	(D)
25	Furniture and fixtures .....	2.7	17.4	6.8	23.8	(D)
251	Household furniture .....	2.0	15.8	5.4	20.8	(D)
27	Printing and publishing .....	16.8	94.4	30.0	124.2	10.3
2711	Newspapers .....	8.2	67.2	15.5	82.7	(D)
275	Commercial printing .....	5.2	14.5	9.1	23.5	(D)
28	Chemicals and allied products ..	2.5	17.7	31.7	49.9	1.4
34	Fabricated metal products .....	8.2	22.8	52.9	77.0	3.4
37	Transportation equipment .....	9.3	17.0	13.3	30.2	(D)
373	Ship, boat building, repairing ..	9.1	16.4	12.5	28.8	(D)
39	Misc. manufacturing industries	4.0	14.0	13.0	26.7	0.3
	Central admin. offices, auxiliaries	-	-	-	-	-

Footnotes and source on next page.

Table 443. -- MANUFACTURES, BY INDUSTRY GROUPS AND SELECTED INDUSTRIES: 1977 -- Con.

Note: Payroll and shipments data for small establishments -- typically single-unit companies with less than 20 employees (cutoff varied by industry) -- were obtained from administrative records of other government agencies instead of from census report forms. These data were then used in conjunction with industry averages to estimate the other items in the table for these small establishments. This technique was also used for a few other establishments whose reports were not received at time data were tabulated.

(D) Withheld to avoid disclosing operations of individual companies.

1/ Statistics for some industry groups and industries have been withheld to avoid disclosing operations of individual companies and to permit further verification of data for smaller industries. Statistics for industry groups shown include data for all component industries, regardless of whether data are shown for individual industries in group.

2/ Aggregate of cost of materials and value of shipments figures for industry groups (2- and 3-digit) and for all manufacturing industries includes extensive duplication, since products of some industries are used as materials by other.

Source: U.S. Bureau of the Census, 1977 Census of Manufactures, Geographic Area Series, Preliminary Report, Hawaii, MC77-A-12(P), August 1979.

Table 444.-- MANUFACTURING EMPLOYMENT AND VALUE ADDED BY  
MANUFACTURE, FOR SELECTED INDUSTRY GROUPS: 1972 AND 1977

1972 SIC code	Industry group and industry	All employees (1,000)		Value added by manufacture (million dollars)	
		1972	1977	1972	1977
	All industries .....	24.8	25.1	410.0	790.9
20	Food and kindred products .....	11.9	10.8	215.4	349.2
2033	Canned fruits, vegetables .....	4.8	3.4	69.0	87.1
205	Bakery products .....	.7	.8	11.4	20.6
206	Sugar, confectionary products ..	3.8	3.8	76.7	159.8
2061	Raw cane sugar .....	3.4	3.3	67.1	145.0
23	Apparel, other textile products ..	3.3	3.8	29.6	45.5
25	Furniture and fixtures .....	.7	.7	7.9	17.4
27	Printing and publishing .....	2.5	2.5	46.2	94.4
37	Transportation equipment .....	.2	.6	2.7	17.0

Source: U. S. Bureau of the Census, 1977 Census of  
Manufactures, Preliminary Report, Hawaii, MC77-A-12(P), August 1979.

Table 445.-- MANUFACTURING LABOR COSTS, CAPITAL EXPENDITURES,  
ASSETS, AND RENTAL PAYMENTS: 1975 AND 1976

[In millions of dollars.]

Item	1975	1976
Labor costs, total .....	272.1	308.0
Payroll .....	236.7	266.4
Social security and other required payments ...	16.8	20.1
Employer payments for other programs .....	18.5	21.5
Expenditures for new plant and equipment, total .	51.5	55.6
New structures and additions to plant .....	12.8	15.0
New machinery and equipment .....	38.7	40.6
Gross book value of depreciable assets, end of year, total .....	673.7	709.0
Structures and building .....	227.4	243.6
Machinery and equipment .....	446.2	465.3
Rental payments, total .....	15.3	17.5
Structures and building .....	9.0	11.0
Machinery and equipment .....	6.3	6.5

Source: U.S. Bureau of the Census, Annual Survey of Manu-  
factures, 1976, M76(AS)-6, p. 228.



Table 446.-- GENERAL EXCISE TAX BASE FOR SUGAR PROCESSING,  
PINEAPPLE CANNING, AND MANUFACTURING: 1969 TO 1979

(In thousands of dollars)

Year reported <u>1/</u>	Total	Sugar processing	Pineapple canning	Manufacturing <u>2/</u>
1969 .....	592,692	196,744	116,466	279,482
1970 .....	575,222	175,337	114,634	285,251
1971 .....	599,686	190,209	124,548	284,929
1972 .....	638,059	205,962	124,265	307,833
1973 .....	692,715	213,095	123,597	356,023
1974 .....	934,613	454,660	103,686	376,268
1975 .....	1,166,923	605,521	131,655	429,748
1976 .....	783,751	275,078	95,488	413,186
1977 <u>3/</u> ...	862,412	284,000	111,942	466,470
1978 <u>3/</u> ...	917,163	291,000	131,665	494,498
1979 .....	1,035,159	305,738	164,200	565,221

1/ Calendar year in which reported, including "prior years" reports. Income received in December is reported the following January and hence these annual totals generally refer to an "income year" ended June 30.

2/ Excludes sugar processing, pineapple canning, and petroleum refining.

3/ Partly estimated.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual tabular release).

Table 447.-- PINEAPPLE CANNERIES, BY ISLANDS: 1969 TO 1979

(As of the end of the canning season.)

Year	State total	Maui	Oahu	Kauai
1969 .....	6	2	3	1
1970 .....	4	1	2	1
1971 .....	4	1	2	1
1972 .....	4	1	2	1
1973 .....	3	1	2	-
1974 .....	3	1	2	-
1975 .....	3	1	2	-
1976 .....	3	1	2	-
1977 .....	3	1	2	-
1978 .....	3	1	2	-
1979 .....	3	1	2	-

Source: The Pineapple Growers Association of Hawaii, records; First Hawaiian Bank, Research Division, records.

Table 448.-- EMPLOYMENT AND EARNINGS IN THE PINEAPPLE INDUSTRY: 1970 TO 1979

(Includes field and cannery employment and earnings.)

Year	Full-time equivalent employment	Total wages and salaries (dollars)	Earnings per full-time equivalent employee (dollars)
1970 ...	7,779	52,580,858	6,759
1971 ...	7,403	51,194,731	6,915
1972 ...	7,110	48,376,978	6,804
1973 ...	5,759	42,613,741	7,400
1974 ...	4,894	37,764,230	7,716
1975 ...	4,915	42,137,633	8,573
1976 ...	4,657	44,918,405	9,645
1977 ...	4,924	52,413,689	10,645
1978 ...	4,953	55,397,760	11,185
1979 ...	4,979	61,751,124	12,402

Source: Hawaii Employers Council, unpublished estimates.

Table 449.-- HAWAIIAN PINEAPPLE PRODUCTION: 1968-69 TO 1979

(Hawaiian pack only; excludes overseas production by Hawaiian companies.)

Year <u>1/</u>	Canned fruit		Canned juice		Frozen concentrate	
	1,000 actual cases	1,000 standard cases <u>2/</u>	1,000 actual cases	1,000 standard cases <u>3/</u>	1,000 equivalent 6/10 cases	1,000 standard cases <u>3/</u>
1968-1969 ..	17,728	12,116	10,930	8,600	692	633
1969-1970 ..	16,971	11,596	11,814	9,000	731	669
1970-1971 ..	17,718	12,028	10,590	8,100	1,016	929
1971-1972 ..	17,961	12,537	11,004	8,400	789	722
1972-1973 ..	15,891	11,108	9,282	7,400	633	580
1973-1974 ..	14,042	9,550	8,470	6,600	886	810
1974-1975 ..	11,584	8,110	5,643	4,400	438	400
1975-1976 ..	12,142	8,200	6,173	4,800	471	520
1976-1977 ..	12,160	8,270	7,295	5,600	346	320
1977-1978 ..	12,482	8,490	8,403	5,750	294	270
1978-1979 ..	11,142	7,620	7,386	5,760	290	265
1979 .....	10,930	7,470	7,699	6,010	308	280

1/ Pack year ended May 31 through 1978-1979 and calendar year 1979.

2/ 24 #2 1/2 can, 45-lb. cases.

3/ 24 #2 1/2 can, 42 1/2-lb. cases.

Source: The Pineapple Growers Association of Hawaii, Pineapple Fact Book/Hawaii 1973 (January 1973), p. 18, and records; Hawaii Agricultural Reporting Service, Statistics of Hawaiian Agriculture (annual), and records.

Table 450.-- SUGAR COMPANIES AND MILLS, BY ISLANDS: 1969 TO 1979

Year (as of Dec. 31)	State total	Hawaii	Maui	Oahu	Kauai
<b>Companies:</b>					
1969 .....	24	10	3	4	7
1970 .....	23	10	3	3	7
1971 .....	23	10	3	3	7
1972 .....	21	10	3	2	6
1973 .....	19	8	3	2	6
1974 .....	17	7	3	2	5
1975 .....	16	6	3	2	5
1976 .....	15	5	3	2	5
1977 .....	15	5	3	2	5
1978 .....	14	4	3	2	5
1979 .....	14	4	3	2	5
<b>Mills:</b>					
1969 .....	26	12	4	4	6
1970 .....	26	12	4	4	6
1971 .....	26	12	4	4	6
1972 .....	23	12	4	2	5
1973 .....	21	10	4	2	5
1974 .....	20	9	4	2	5
1975 .....	17	7	4	2	4
1976 .....	17	7	4	2	4
1977 .....	16	6	4	2	4
1978 (revised)	14	5	3	2	4
1979 .....	14	5	3	2	4

Source: Hawaiian Sugar Planters' Association, records.

Table 451.-- SUGAR AND MOLASSES PRODUCTION: 1969 TO 1979

Year	Cane land (acres)		Cane used for sugar (short tons)	Sugar produced (short tons)		Molasses produced (short tons)
	Total area	Harvested area		96° raw value	Equivalent refined	
1969 ...	242,216	113,232	10,839,272	1,182,414	1,105,060	340,330
1970 ...	238,997	113,816	10,457,377	1,162,071	1,086,000	322,480
1971 ...	232,278	115,810	10,685,019	1,229,976	1,149,510	330,227
1972 ...	229,611	108,456	9,929,068	1,118,883	1,045,708	307,543
1973 ...	226,580	108,189	9,645,452	1,128,529	1,054,723	301,500
1974 ...	224,227	95,826	9,082,684	1,040,742	972,677	293,380
1975 ...	221,426	105,125	9,485,299	1,107,199	1,034,788	301,335
1976 ...	221,551	99,926	9,172,649	1,050,457	981,757	275,352
1977 ...	220,729	96,770	8,994,388	1,033,739	966,132	284,349
1978 ...	220,697	99,355	9,263,190	1,028,933	961,641	310,238
1979 ...	218,773	100,611	9,632,135	1,059,737	990,430	325,831

Source: Hawaiian Sugar Planters' Association, HSPA Sugar Manual 1979, pp. 10-11, and information supplied June 6, 1980.

Table 452.-- AVERAGE RAW SUGAR PRICE AND SUGAR INDUSTRY EMPLOYMENT  
AND EARNINGS: 1969 TO 1979

Year	Average raw sugar price <u>1/</u> (cents per lb.)	Hourly-rated employees		Industry wide strikes (weeks)	Average daily earnings <u>2/</u> (dollars)	
		Average number <u>3/</u>	Total man-days		Wages	Employee benefits
1969 ...	7.75	9,213	2,066,244	5	23.26	9.76
1970 ...	8.08	8,908	2,139,183	-	24.24	10.00
1971 ...	8.52	8,610	2,077,011	-	26.08	10.27
1972 ...	9.10	8,127	1,934,563	-	29.09	11.23
1973 ...	10.30	7,900	1,897,369	-	30.86	12.48
1974 ...	29.43	7,700	1,744,346	6	34.41	15.81
1975 ...	22.49	7,800	1,937,973	-	37.34	15.66
1976 ...	13.31	7,500	1,854,272	-	43.12	17.28
1977 ...	11.11	7,200	1,660,298	3	43.92	19.97
1978 ...	13.74	7,200	1,771,530	-	47.06	21.28
1979 ...	15.20	7,065	1,762,838	-	50.49	22.21

1/ Average New York raw sugar price computed over all the days of the year (Hawaiian basis). The New York spot price was discontinued November 2, 1977; figures since then are based on Clearing Association settlement prices.

2/ For non-supervisory employees.

3/ Adults only.

Source: Hawaiian Sugar Planters' Association, HSPA Sugar Manual (annual, 1970-1979), as revised, and information supplied June 6, 1980.

Table 453.-- VALUE OF SALES AND GOVERNMENT PAYMENTS FOR PINEAPPLE  
AND SUGAR PRODUCTION: 1969 TO 1979

(Calendar year data unless otherwise specified.)

Year	Pineapple (\$1,000,000)		Sugar (\$1,000)		
	Canned fruit and juices <u>1/</u>	Fresh market sales <u>2/</u>	Value of production <u>3/</u>		Government payments
			Raw sugar 96°	Commercial molasses	
1969 ..	123.0	2.4	171,498	7,501	10,463
1970 ..	135.0	3.6	180,680	7,061	10,261
1971 ..	137.7	3.7	196,253	6,669	10,722
1972 ..	140.5	4.9	176,550	8,052	9,667
1973 ..	135.0	7.4	203,788	18,370	9,510
1974 ..	118.2	8.9	659,227	17,390	8,646
1975 ..	126.6	10.1	354,600	11,500	-
1976 ..	130.0	14.5	245,500	11,500	-
1977 ..	140.0	21.6	219,100	7,700	48,700
1978 ..	128.0	29.4	269,500	15,700	8,100
1979 ..	160.0	30.2	322,200	23,500	-

1/ Value of canned fruit and juices and by products shipped out-of-State and sold within State. Prior to 1979, data are for pack years beginning June 1.

2/ Value FAS shipping point for outshipments, delivered wholesalers local sales.

3/ Beginning with 1972, point of delivery changed from refinery to mill.

Source: Hawaii Agricultural Reporting Service, Statistics of Hawaiian Agriculture (annual) and records.