

# 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 618 in 1958 to 697 in 1967 and 773 in 1972. The value added by manufacture rose from \$165 million in 1958 to \$326 million in 1967, \$410 million in 1972 and \$908 million in 1974. About 46 percent of all manufacturing activity in the State was on Oahu in 1974. Food processing—mostly sugar and pineapple—accounted for more than three-fourths of the value added by manufacture in that year. Between 1966 and 1976, the general excise and use tax base increased 54 percent for sugar processing, dropped 10 percent for pineapple canning, and rose 101 percent for all other manufacturing. There were three pineapple canneries and 17 sugar mills in Hawaii in mid-1976. The production of canned pineapple fruit and juices in 1975-1976 dropped to 18.3 million actual cases, well below the levels of earlier years, but fresh pineapple sales remained high. Sugar production in 1976 amounted to 1.05 million short tons, about the same level as in other recent years. The value of production (including raw sugar and commercial molasses) was \$252 million, well below the record set in 1974 but still the third best year in Island history.

Sources for data on this subject include the United States Census of Manufactures, most recently taken as of 1972, 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. Statistics for the nation as a whole appear in Section 28 of the *Statistical Abstract of the United States: 1976*.

**Table 333. — MANUFACTURING: 1964 TO 1974**

Year <sup>1</sup>	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)
	Total	With 20 employees or more	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)				
1964....	(NA)	(NA)	25,000	113.7	18,300	33.1	69.4	268.8	372.0	638.4	17.7
1965....	(NA)	(NA)	25,400	118.1	18,700	34.0	73.5	292.1	365.9	655.5	17.2
1966....	(NA)	(NA)	24,800	123.8	18,700	34.3	78.2	310.8	371.5	680.9	24.1
1967....	697	215	25,400	139.6	19,000	35.9	86.9	326.2	399.6	723.4	26.0
1968....	(NA)	(NA)	23,200	134.0	17,400	32.2	83.3	353.9	381.9	737.1	15.6
1969....	(NA)	(NA)	23,900	145.3	17,900	33.2	90.8	351.0	408.3	758.1	19.8
1970....	(NA)	(NA)	24,800	168.7	18,100	35.3	102.8	408.6	451.1	856.9	40.5
1971....	(NA)	(NA)	24,400	176.6	17,500	34.3	105.7	435.0	465.9	899.9	28.0
1972....	773	238	24,800	191.1	17,700	33.1	113.7	410.0	548.3	955.6	46.7
1973....	(NA)	(NA)	24,300	195.5	17,500	31.9	117.9	496.1	592.9	1,086.4	36.6
1974....	(NA)	(NA)	21,400	202.0	15,000	28.0	113.5	908.0	947.8	1,831.7	50.2

NA Not available.

<sup>1</sup>Data for 1967 and 1972 are from the Census of Manufactures for those years. Data for other years are from the Annual Survey of Manufactures and are subject to considerable sampling variation. Because of changes in definitions over time, data are not entirely comparable from year to year; see sources for discussion.

Source: U.S. Bureau of the Census, *Census of Manufactures, 1967*, MC67(3)-12, table 2; *Census of Manufactures, 1972*, MC72(3)-12, table 2; *Annual Survey of Manufactures, 1973*, M73(AS)-6, p. 205; and records.

Table 334. — MANUFACTURING, BY GEOGRAPHIC AREA: 1972

Standard metropolitan statistical area, county, and city	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)				
Hawaii, total .....	773	238	25.0	191.7	17.7	33.1	113.8	410.3	548.5	956.1	47.2
STANDARD METROPOLITAN STATISTICAL AREA											
COUNTIES											
Honolulu.....	612	193	19.6	148.9	13.9	25.4	85.9	321.2	412.4	731.8	33.1
Hawaii .....	85	24	2.5	20.4	1.7	3.4	12.8	49.8	51.9	101.4	10.7
Honolulu.....	612	193	19.6	148.9	13.9	25.4	85.9	321.2	412.4	731.8	33.1
Kauai .....	28	8	.8	5.8	.6	1.1	4.0	13.0	28.9	42.0	1.4
Maui .....	48	13	2.1	16.5	1.6	3.3	11.0	26.3	55.3	80.9	2.1
CITIES WITH 450 OR MORE EMPLOYEES											
Ewa Beach and Barbers Point.....	8	6	.5	5.4	.4	.7	3.8	15.9	30.8	46.4	11.9
Hilo .....	57	11	.9	6.9	.6	1.1	3.9	14.1	9.1	23.0	.6
Honolulu.....	534	169	17.1	126.6	12.2	22.3	72.6	261.1	282.5	542.5	16.8
Kahului.....	5	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Waipahu.....	11	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

Source follows table 335.

**Table 335. — MANUFACTURING, BY INDUSTRY GROUP AND INDUSTRY: 1972**

Ind. code	Industry group and industry	Establishments		All employees		Production workers		Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)
		Total	With 20 employees or more	Number (1,000)	Payroll (million dollars)	Number	Man-hours (millions)			
	All manufacturing .....	773	238	25.0	191.7	17.7	33.1	410.3	548.5	956.1
20	Food and kindred products .....	209	70	11.9	87.8	8.8	17.0	215.4	308.3	513.0
201	Meat products.....	18	8	0.4	2.7	0.3	0.5	5.9	24.0	30.0
202	Dairy products .....	11	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
203	Preserved fruits, vegetables ..	38	5	4.9	28.2	4.4	8.0	70.5	71.3	141.8
2033	Canned fruits, vegetables...	15	5	4.8	27.4	4.3	7.8	69.0	69.4	138.4
204	Grain mill products .....	8	6	0.2	1.7	0.1	0.2	5.6	20.9	26.5
205	Bakery products.....	18	8	0.7	6.3	0.4	0.8	11.4	7.8	19.3
206	Sugar, confectionery products	37	24	3.8	32.8	2.6	5.4	76.7	136.5	202.7
2061	Raw cane sugar .....	18	18	3.4	29.5	2.3	4.8	67.1	110.4	177.5
208	Beverages .....	21	8	(D)	(D)	(D)	(D)	(D)	(D)	(D)
209	Misc. foods, kindred products.	56	6	0.7	4.5	0.5	1.1	9.4	13.3	22.7
23	Apparel, other textile products ..	120	55	3.3	15.4	2.9	5.2	29.6	17.4	46.4
24	Lumber and wood products.....	38	12	0.9	7.4	0.7	1.3	13.1	12.4	25.3
25	Furniture and fixtures.....	26	11	0.7	5.1	0.4	0.7	7.9	11.1	18.4
26	Paper and allied products .....	11	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)
27	Printing and publishing.....	117	21	2.5	22.8	1.3	2.2	46.2	17.3	63.6
28	Chemicals and allied products ..	21	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
29	Petroleum and coal products....	5	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)
30	Rubber, misc. plastics products .	11	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
32	Stone, clay, glass products .....	42	13	1.1	12.3	0.8	1.6	31.8	24.7	56.5
33	Primary metal industries .....	3	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)
34	Fabricated metal products.....	33	10	(D)	(D)	(D)	(D)	(D)	(D)	(D)
35	Machinery, except electrical ....	28	3	0.4	3.4	0.3	0.5	4.8	3.6	7.7
37	Transportation equipment .....	6	2	0.2	2.1	0.2	0.3	2.7	2.5	5.2
39	Misc. manufacturing industries .	55	9	0.8	4.0	0.7	1.2	6.9	4.8	11.9
—	Administrative and auxiliary....	22	14	0.9	11.9	—	—	—	—	—

(D) Withheld to avoid disclosing figures for individual companies.

Source of tables 334 and 335: U.S. Bureau of the Census, *Census of Manufactures, 1972, Hawaii*, MC72(3)-12.

Table 336. — MANUFACTURING, BY INDUSTRY GROUP AND ISLAND: 1973

Island and industry group	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)
	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)					
State total .....	24.3	195.5	17.5	31.9	117.9	496.1	592.9	1,086.4	36.6	116.4
Island:										
Oahu .....	19.0	153.3	13.4	24.2	89.1	370.5	456.1	822.2	17.1	92.6
Other islands .....	5.3	42.2	4.1	7.7	28.8	125.6	136.8	264.2	19.5	23.8
Industry group: <sup>1</sup>										
Food and kindred products <sup>2</sup> ....	10.7	84.4	8.2	15.0	54.3	260.2	316.3	575.8	26.2	44.4
Canned fruits and vegetables <sup>3</sup>	4.0	23.3	3.6	5.9	17.7	78.4	71.9	150.1	(D)	22.2
Raw cane sugar .....	3.2	29.8	2.3	4.8	20.1	102.8	107.2	210.0	20.3	6.2
Lumber and wood products .....	.8	6.9	.6	1.2	5.2	10.0	11.2	21.6	.1	4.5
Furniture and fixtures .....	.8	5.5	.5	.9	2.5	8.7	11.4	19.3	.0	4.8
Printing and publishing .....	2.5	24.9	1.2	2.2	12.0	55.8	17.8	73.7	2.8	3.6
Stone, clay, glass products .....	1.2	13.4	.8	1.7	8.7	35.7	27.8	63.1	3.1	6.0
Machinery, exc. electrical .....	.4	3.8	.3	.5	2.9	4.1	3.7	9.0	.1	1.2
Transportation equipment .....	.3	3.5	.2	.4	2.8	6.2	3.9	10.0	.0	2.4

(D) Withheld to avoid disclosing figures for individual companies.

<sup>1</sup>Reported separately only for major groups, and hence does not add to indicated State total.

<sup>2</sup>Total value of shipments for this group includes extensive duplication arising from shipments between establishments in the same industry classification.

<sup>3</sup>Establishments in this industry reported value of production instead of value of shipments. Consequently, the formula for computing value added by manufacture was modified to exclude any change in finished products inventories between the beginning and end of the year.

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures: 1973*, M73(AS)-6, pp. 208 and 218.

**Table 337. — MANUFACTURING, BY INDUSTRY GROUP AND ISLAND: 1974**

Island and industry group	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)
	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)					
State total .....	21.4	202.0	15.0	28.0	113.5	908.0	947.8	1,831.7	50.2	167.2
Island:										
Oahu .....	16.5	156.0	11.4	20.9	83.6	420.6	763.3	1,160.9	30.7	140.1
Other islands .....	4.9	46.0	3.6	7.1	29.9	487.4	184.5	670.8	19.5	27.1
Industry group: <sup>1</sup>										
Food and kindred products .....	10.1	89.5	7.2	13.5	55.3	711.6	390.0	1,095.3	26.4	60.0
Canned fruits and vegetables .	3.0	19.4	2.7	4.6	15.1	87.2	50.9	138.1	0.5	27.6
Raw cane sugar .....	3.0	31.3	2.1	4.5	21.3	509.2	123.3	631.9	17.8	9.6
Lumber and wood products .....	0.7	5.2	0.5	1.0	3.4	10.1	6.7	16.8	0.8	1.7
Furniture and fixtures .....	0.8	6.1	0.5	0.8	2.9	10.6	8.7	18.7	0.1	4.5
Printing and publishing .....	2.7	26.9	1.4	2.4	12.8	62.1	26.9	88.6	2.7	8.9
Stone, clay, glass products .....	1.5	22.4	1.2	2.7	15.2	49.9	54.7	103.5	3.0	14.4

<sup>1</sup>Reported separately only for major groups, and hence does not add to indicate State total.  
Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1974* (forthcoming).

**Table 338. — PINEAPPLE CANNERIES AND SUGAR MILLS:  
1966 TO 1976**

Year	Pineapple canneries <sup>1</sup>	Sugar <sup>2</sup>	
		Companies	Mills
1966.....	6	25	27
1967.....	6	25	26
1968.....	6	25	26
1969.....	6	24	26
1970.....	4	23	26
1971.....	4	23	26
1972.....	4	21	23
1973.....	4	19	21
1974.....	3	17	20
1975.....	3	16	17
1976.....	3	15	17
ISLANDS: 1976			
Hawaii .....	—	5	7
Maui .....	1	3	4
Oahu .....	2	2	2
Kauai .....	—	5	4

<sup>1</sup>Variable dates, usually after the end of the canning season.

<sup>2</sup>As of December 31.

Source: The Pineapple Growers Association of Hawaii, records; Hawaiian Sugar Planters' Association, records.

**Table 339. — GENERAL EXCISE TAX BASE FOR SUGAR PROCESSING, PINEAPPLE CANNING,  
AND MANUFACTURING: 1966 TO 1976**  
(In thousands of dollars)

Year reported <sup>1</sup>	Total	Sugar processing	Pineapple canning	Manu- facturing <sup>2</sup>
1966.....	490,119	178,909	105,747	205,463
1967.....	521,122	171,155	131,695	218,272
1968.....	533,288	184,663	114,554	234,071
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

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

<sup>2</sup>Excludes sugar processing and pineapple canning.

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

**Table 340. — HAWAIIAN PINEAPPLE PRODUCTION: 1965 TO 1976**  
(Hawaiian pack only; excludes overseas production by Hawaiian companies.)

Pack year ended May 31	Canned fruit		Canned juice		Frozen concentrate	
	1,000 actual cases	1,000 standard cases <sup>1</sup>	1,000 actual cases	1,000 standard cases <sup>2</sup>	1,000 equivalent 6/10 cases	1,000 standard cases <sup>2</sup>
1965-1966 .....	17,833	12,595	11,881	9,200	1,019	932
1966-1967 .....	19,005	13,168	11,323	8,800	1,062	972
1967-1968 .....	17,002	11,994	10,794	8,400	643	588
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	8,380	6,173	4,800	471	430

<sup>1</sup>24 #2½ can, 45-lb. cases.

<sup>2</sup>24 #2½ can, 42½-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 341. — EMPLOYMENT AND EARNINGS IN THE PINEAPPLE INDUSTRY:  
1970 TO 1975**

(Includes field and cannery employment and earnings.)

Year	Full-time equivalent employment	Total wages and salaries (dollars)	Earnings per full-time equiv- alent 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

Source: Hawaii Employers Council, unpublished estimates.



**Table 342. — SUGAR PRODUCTION: 1966 TO 1976**

Year	Cane land (acres)		Cane used for sugar (short tons)		Sugar produced (short tons)		Average New York raw sugar price cwt. (dollars)	Average daily earnings of workers (dollars) <sup>1</sup>	Field worker man-hours per ton (raw value)
	Total area	Harvested area	Total	Per acre	Converted to 96° raw value	Equivalent refined			
1966.....	237,499	111,005	10,969,925	98.82	1,234,121	1,153,409	6.99	19.76	10.50
1967.....	239,813	111,837	11,045,949	98.74	1,191,042	1,113,148	7.28	21.35	10.64
1968.....	242,476	113,525	11,279,920	99.36	1,232,182	1,151,597	7.52	21.62	9.98
1969.....	242,216	113,232	10,839,272	95.73	1,182,414	1,105,060	7.75	23.26	9.44
1970.....	238,997	113,816	10,457,377	91.88	1,162,071	1,086,000	8.08	24.24	9.50
1971.....	232,278	115,810	10,685,019	92.26	1,229,976	1,149,510	8.52	26.08	9.04
1972.....	229,611	108,456	9,929,068	91.55	1,118,883	1,045,708	9.10	29.09	9.22
1973.....	226,580	108,189	9,645,452	89.15	1,128,529	1,054,723	10.30	30.86	9.20
1974.....	224,227	95,826	9,082,684	94.76	1,040,742	972,677	29.43	34.41	9.32
1975.....	221,426	105,125	9,485,299	90.23	1,107,199	1,034,788	22.49	37.34	(NA)
1976.....	(NA)	(NA)	(NA)	(NA)	1,050,457	(NA)	13.32	(NA)	(NA)

NA Not available.

<sup>1</sup>Cash wage only, excluding the value of employees benefits.

Source: Hawaiian Sugar Planters' Association, *HSPA Manual 1976*, pp. 8-11, and records.

**Table 343. — VALUE OF SALES AND GOVERNMENT PAYMENTS FOR PINEAPPLE AND SUGAR PRODUCTION: 1966 TO 1976**

Year	Pineapple (\$1,000,000)		Sugar (\$1,000)		
	Canned fruit and juices <sup>1</sup>	Fresh market sales <sup>2</sup>	Value of production <sup>3</sup>		Government payments
			Raw sugar 96°	Commercial molasses	
1966.....	124.5	3.2	170,957	8,558	10,831
1967.....	130.5	2.8	172,421	7,945	10,570
1968.....	125.0	2.5	182,455	6,621	10,861
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.....	105.5	14.5	240,500	11,500	—

<sup>1</sup>Value of canned fruit and juices and byproducts shipped out-of-state and sold within State, as estimated by Bank of Hawaii.

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

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

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