

Table
Number **Table Name**

(Click on the table number to go to corresponding table)

Narrative

22.01	Statistical Summary of Manufactures (NAICS 31-33): 1999 to 2004
22.02	Detailed Manufacturing Statistics (NAICS) 31 - 33): 1997 and 2002
22.03	Statistical Summary of Manufacturing (NAICS 31- 33), by Counties: 2002
22.04	Manufacturing, by Selected Industry Groups (NAICS 31 - 33): 2002
22.05	Manufacturing, by Selected Industry Groups (NAICS 31 - 33): 2003
22.06	Manufacturing Employment and Wages, Annual Averages, Selected NAICS Codes: 2004
22.07	General Excise Tax Base for Manufacturing: 1987 to 2005
22.08	Industrial and High-Technology Parks, by Island: 2005
22.09	Pineapple Companies and Canneries, and Sugar Companies and Mills, 1950 to 2005, and by Island, 2004 and 2005
22.10	Sugar and Molasses Production: 1991 to 2005
22.11	Value of Sales for Pineapple and Sugar Production: 1980 to 2004

Section 22

MANUFACTURES

This section presents statistics on the manufacturing segment of the economy, including sugar processing and pineapple canning. Additional information on manufacturing workers appears in Sections 12 and 15.

Sources for data on this subject include the *U.S. 1997 Economic Census*, the *U.S. Annual Survey of Manufactures*, publications of the Hawaii State Department of Agriculture and the Hawaii State Department of Taxation, and the *Hawaiian Sugar Manual* of the former Hawaiian Sugar Planters' Association, now the Hawaii Agriculture Research Center. *Historical Statistics of Hawaii*, Section 16, contains the figures for earlier years. Statistics for the nation as a whole appear in Section 21 of the *Statistical Abstract of the United States: 2006*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES
(NAICS 31- 33): 1999 TO 2004**

[Industry groups with 950 employees or more; for 2002 data, with 100 employees or more.
Statistics based on the North American Industry Classification System (NAICS)]

Subject	1999	2000	2001	2002	2003	2004
All employees						
Number (1,000)	15.2	14.6	14.4	13.2	13.6	14.0
Payroll (million dollars)	409.4	428.0	447.4	421.3	434.4	522.3
Production workers						
Number (1,000) 1/	10.0	9.6	9.1	8.9	9.0	8.9
Hours (millions)	18.0	18.0	16.7	16.8	17.6	21.7
Wages (million dollars)	217.2	232.0	224.7	254.7	269.1	322.5
Value added by manufacture (million dollars)	1,236.1	1,357.2	907.3	1,217.7	1,224.5	1,489.3
Cost of materials 2/ (million dollars)	1,810.6	2,444.1	2,268.6	2,246.5	2,641.9	3,123.5
Value of shipments 2/ (million dollars)	3,024.5	3,732.3	3,196.4	3,460.2	3,879.7	4,560.5
Total capital expenditures (million dollars)	89.9	105.4	157.2	83.0	91.3	98.9

1/ Average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

2/ Aggregate of total cost of materials and total value of shipments includes extensive duplication, since products of some industries are used as materials of others.

Source: U.S. Census Bureau, *Annual Survey of Manufactures, Geographic Area Statistics, 2000*, M00(AS)-3 (March 2002), table 2; *2001*, M01(AS)-3 (January 2003), table 2; *2003*, M03(AS)-3 (May 2005), table 2; *2004*, M04 (AS)-3 (January 2006), table 2

<<http://www.census.gov/mcd/asm-as3.html>> accessed July 24, 2006;

U.S. Census Bureau, *2002 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), table 1 <<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005.

**Table 22.02-- DETAILED MANUFACTURING STATISTICS
(NAICS 31 - 33): 1997 and 2002**

[Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to the 1997 Economic Census]

Item	Value	
	1997	2002
Companies 1/	895	(NA)
All establishments 2/	921	929
1 to 19 employees	762	772
20 to 99 employees	130	135
100 employees or more	29	22
All employees 3/	15,109	13,200
Total compensation (\$1,000)	503,407	512,860
Annual payroll	405,045	421,269
Total fringe benefits	98,362	91,591
Production workers, average for year	9,899	8,865
On March 12	9,835	8,858
On May 12	9,768	8,830
On August 12	10,194	8,880
On November 12	9,799	8,859
Production-worker hours (1,000)	18,362	16,837
Production-worker wages (\$1,000)	231,595	254,713
Total cost of materials (\$1,000)	1,941,147	2,246,539
Materials, parts, containers, packaging, etc., used	1,673,002	1,904,259
Resales	152,624	246,016
Purchased fuels	51,118	41,001
Purchased electricity	23,281	21,969
Contract work	41,122	33,294
Quantity of electricity purchased for heat and power (1,000 kWh)	245,275	204,563
Quantity of electricity generated less sold for heat and power (1,000 kWh)	(4/)	356,114
Total value of shipments (\$1,000)	3,192,532	3,460,199
Value of resales	181,478	280,656
Value added (\$1,000)	1,262,448	1,217,728
Total inventories, beginning of year (\$1,000)	336,547	366,172
Finished goods	175,028	195,042
Work-in-process	46,214	74,346
Materials and supplies	115,305	96,784

Continued on next page.

**Table 22.02-- DETAILED MANUFACTURING STATISTICS
(NAICS 31 - 33): 1997 and 2002 -- Con.**

Item	Value	
	1997	2002
Total inventories, end of year (\$1,000)	351,344	370,990
Finished goods	188,052	237,652
Work-in-process	47,984	31,358
Materials and supplies	115,308	101,980
Gross value of depreciable assets (acquisition costs) at beginning of year (\$1,000)	1,221,564	1,386,417
Total capital expenditures (new and used)	100,707	82,960
Buildings and other structures	38,742	13,569
Machinery and equipment	61,965	69,391
Automobiles, trucks, etc., for highway use	(NA)	5,399
Computers and peripheral data processing equipment	(NA)	4,080
All other expenditures for machinery and equipment	(NA)	59,912
Total retirements	24,447	33,527
Gross value of depreciable assets at end of year (\$1,000)	1,297,824	1,435,850
Depreciation charges during year (\$1,000)	68,301	76,908
Total rental payments (\$1,000)	38,447	51,216
Buildings and other structures	23,072	36,161
Machinery and equipment	15,375	15,055

NA Not available.

1/ For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

2/ Includes establishments with payroll at any time during the year.

3/ Average number of production workers for pay period that includes the 12th of March, May,

4/ Withheld to avoid disclosing data for individual companies; data are included in higher level totals. August, and November plus other employees for payroll period that includes the 12th of March.

Source: U.S. Census Bureau, *1997 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC97M31A-HI (May 2000), table 5; U.S. Census Bureau, *2002 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), table 5
<<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005.

**Table 22.03-- STATISTICAL SUMMARY OF MANUFACTURING
(NAICS 31 - 33), BY COUNTY: 2002**

[For the State, industries with 100 employees or more; for the counties, industries with 500 employees or more. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to the 1997 Economic Census]

Subject	State total	City and County of Honolulu	Hawaii County	Kauai County 1/	Maui County
All establishments 2/ With 20 employees or more	929 157	683 132	114 14	39 3	93 8
All employees					
Number	13,200	10,253	1,246	210	1,491
Payroll (\$1,000)	421,269	326,845	38,289	5,903	50,232
Production workers					
Number 3/	8,865	6,855	740	129	1,141
Hours (1,000)	16,837	12,920	1,466	247	2,204
Wages (\$1,000)	254,713	195,266	20,463	3,344	35,640
Value added by manufacture (\$1,000)	1,217,728	948,546	97,719	14,403	157,060
Cost of materials 4/ (\$1,000)	2,246,539	2,017,417	102,186	13,047	113,889
Value of shipments 4/ (\$1,000)	3,460,199	2,959,134	204,377	26,132	270,556
Total capital expenditures (\$1,000)	82,960	59,572	6,371	443	16,574

1/ Kauai data calculated as residual by the Hawaii State Department of Business, Economic Development & Tourism.

2/ Includes establishments with payroll at any time during the year.

3/ Average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

4/ Aggregate of cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

Source: U.S. Census Bureau, 2002 *Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), tables 1 and 3 <<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005. Calculations by the Hawaii State Department of Business, Economic Development & Tourism.

**Table 22.04-- MANUFACTURING, BY SELECTED INDUSTRY GROUPS
(NAICS 31 - 33): 2002**

[Industry groups and industries with 100 employees or more. Statistics based on the North American Industry Classification System (NAICS)]

Subject	Total	Food NAICS 311	Apparel NAICS 315	Printing & related support NAICS 323	Cement & concrete product NAICS 3273	Fabricated metal product NAICS 332	Furniture & related product NAICS 337	Miscel- laneous NAICS 339
All establishments 1/ Number	929	259	86	120	31	42	40	148
20 employees or more	157	54	14	19	16	8	7	11
All employees Number	13,200	5,224	1,109	1,615	756	454	350	1,089
Payroll (\$1,000)	421,269	145,699	22,934	49,469	37,929	17,075	11,122	30,099
Production workers Number 2/ Hours (1,000)	8,865 16,837	3,597 6,693	908 1,716	945 1,638	485 1,064	304 583	267 524	641 1,146
Wages (\$1,000)	254,713	90,162	13,759	27,938	24,314	10,584	7,183	14,898
Value added by manufact. (\$1,000)	1,217,728	478,098	49,136	107,855	99,106	41,599	25,900	49,938
Cost of materials 3/ (\$1,000)	2,246,539	427,972	32,045	60,697	92,111	44,842	18,753	40,288
Value of shipments 3/ (\$1,000)	3,460,199	908,464	80,776	166,901	189,628	85,666	44,579	88,765
Total capital expenditures (\$1,000)	82,960	26,914	(4/)	(4/)	10,477	1,350	(4/)	(4/)

1/ Includes establishments with payroll at any time during the year.

2/ Average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

3/ Aggregate of cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

4/ Withheld to avoid disclosing data of individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, *2002 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), table 1 <<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005.

**Table 22.05-- MANUFACTURING, BY SELECTED INDUSTRY GROUPS
(NAICS 31 - 33): 2003**

[Industry groups with 950 employees or more. Statistics based on the North American Industry Classification System (NAICS)]

Subject	Total	Food NAICS 311	Food, bakeries & tortilla NAICS 3118	Apparel NAICS 315	Apparel, cut & sew NAICS 3152	Printing & related support NAICS 323	Miscel- laneous NAICS 339	Other miscel- laneous NAICS 3399
All employees								
Number 1/	13,564	5,361	1,676	1,009	1,004	1,339	1,345	1,094
Payroll (\$1,000)	434,350	141,250	37,399	21,726	21,586	43,520	37,982	30,335
Production workers								
Number 1/	8,988	3,571	1,034	779	774	900	685	510
Hours (1,000)	17,649	6,619	1,762	1,693	1,684	1,836	1,291	957
Wages (\$1,000)	269,084	86,801	23,769	14,078	13,978	32,655	15,343	9,891
Value added (\$1,000)	1,224,485	530,021	95,893	38,176	37,936	91,836	50,697	36,174
Cost of materials 2/ (\$1,000)	2,641,892	523,622	44,931	33,235	32,977	49,684	45,275	41,032
Value of shipments 2/ (\$1,000)	3,879,733	1,050,259	142,556	71,975	71,477	140,481	93,412	74,736
Total capital expendit. (\$1,000)	91,327	28,419	9,626	237	236	1,992	2,316	2,216

1/ Average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

2/ Aggregate of cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

Source: U.S. Census Bureau, *Geographic Area Statistics: 2003, Annual Survey of Manufactures*, M03(AS)-3 (May 2005), table 2 <<http://www.census.gov/mcd/asm-as3.html>> accessed June 8, 2005.

**Table 22.06-- MANUFACTURING EMPLOYMENT AND WAGES,
SELECTED NAICS CODES: 2004**

[Excludes establishments without payroll. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to 1997]

NAICS code	Kind of Business	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
	Total	1,075	15,489	504,555	32,576
311	Food	304	6,510	167,648	25,751
3113	Sugar & confectionery product	22	844	26,124	30,965
3114	Fruit & vegetable preserving & specialty	29	829	22,739	27,422
3115	Dairy product	11	358	17,058	47,614
3116	Animal slaughtering & processing	26	614	14,007	22,798
3118	Bakeries & tortilla	128	1,841	40,332	21,914
3121	Beverage	28	701	28,478	40,625
314	Textile product mills	26	155	3,349	21,580
315	Apparel	96	1,106	23,593	21,327
3212	Plywood & engineered wood product	6	116	3,797	32,761
3219	Other wood product	23	145	4,078	28,156
3231	Printing & related support activities	133	1,309	41,618	31,800
325	Chemical	30	376	13,978	37,134
326	Plastics & rubber products	20	271	8,821	32,519
3271	Clay product & refractory	6	33	574	17,179
3272	Glass & glass product	10	57	1,495	26,226
3273	Cement & concrete product	31	822	45,622	55,479
3279	Other non-metallic mineral products	15	180	6,491	36,059
332	Fabricated metal product	45	489	19,815	40,563
333	Machinery	8	42	1,451	34,345
336	Transportation equipment	29	637	26,322	41,305
3366	Ship and boat building	20	603	24,760	41,039
337	Furniture & related product	62	618	25,109	40,640
3391	Medical equipment & supplies	46	220	7,153	32,588
3399	Other miscellaneous	115	908	24,175	26,617

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Wages, Annual Averages 2004*, table 10 <<http://www.bls.gov/cew/cewbultn04.htm>> accessed April 10, 2006.

**Table 22.07-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1987 TO 2005**

[In thousands of dollars. Data exclude sugar processing, pineapple canning, and petroleum refining, and are on a cash basis accounting. Manufactured goods shipped out of State were exempted from the general excise tax by Act 239, SLH 1987, effective January 1, 1988]

Year 1/	Tax base	Year 1/	Tax base	Year 1/	Tax base
1987	595,140	1994	618,238	2001	611,292
1988	629,303	1995	614,771	2002	612,658
1989	630,997	1996	622,889	2003	638,863
1990	728,387	1997	581,259	2004	642,245
1991	714,407	1998	535,371	2005	677,280
1992	714,470	1999	585,305		
1993	717,423	2000	586,039		

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 November 30.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Collections" (annual). Beginning in 1997, <http://www.state.hi.us/tax/a5_3txcolrptarchive.htm> accessed March 20, 2006.

**Table 22.08-- INDUSTRIAL AND HIGH-TECHNOLOGY PARKS,
BY ISLAND**

Subject	State	Hawaii	Maui	Molokai	Oahu	Kauai
Number of parks	22	5	3	1	12	1
Total acres	4,755.03	1,651.00	649.00	18.23	2,403.80	33.00

Source: Pacific Business News, *Book of Lists 2006 Edition* (December 23, 2005), p. 106.

**Table 22.09-- PINEAPPLE COMPANIES AND CANNERIES, AND
SUGAR COMPANIES AND MILLS, 1955 TO 2005,
AND BY ISLAND, 2004 AND 2005**

Year	Pineapple (end of canning season)		Sugar (December 31)	
	Companies	Canneries	Companies 1/	Mills
1955	10	8	28	26
1960	8	9	27	27
1965	6	6	25	27
1970	4	4	23	26
1975	3	3	16	17
1980	3	3	15	14
1985	3	2	14	12
1990	4	2	12	12
1994	3	1	9	10
1995	3	1	8	10
1996	3	1	4	6
1997	3	1	4	6
1998	3	1	4	6
1999	3	1	4	6
2000	3	1	3	4
2001	3	1	2	2
2002	3	1	2	2
2003	3	1	2	2
2004	3	1	2	2
2005	3	1	2	2
ISLANDS: 2004				
Hawaii	-	-	-	-
Maui	1	1	1	1
Oahu	2	-	-	-
Kauai	-	-	1	1
ISLANDS: 2005				
Hawaii	-	-	-	-
Maui	1	1	1	1
Oahu	2	-	-	-
Kauai	-	-	1	1

1/ In operation; excludes cooperatives.

Source: Pineapple Growers Association of Hawaii, records; *Hawaiian Sugar Manual (annual)*; Dole Food Company, records; Hawaii Agriculture Research Center, records.

Table 22.10-- SUGAR AND MOLASSES PRODUCTION: 1991 TO 2005

Year	Cane land (acres)		Cane used for sugar (short tons)	Sugar produced (short tons)		Molasses produced (short tons)
	Total area	Harvested area 1/		96° raw value	Equivalent refined	
1991	155,609	67,716	5,852,668	724,100	676,744	202,214
1992	145,790	62,123	5,432,286	652,304	609,643	203,739
1993	121,322	64,705	5,506,072	677,405	633,103	211,658
1994	98,413	64,951	5,268,859	658,538	615,470	200,835
1995	81,957	48,507	3,952,347	492,346	460,147	163,305
1996	68,816	36,769	3,542,460	437,262	408,665	145,369
1997	67,820	32,033	2,923,594	356,917	333,575	131,173
1998	67,585	30,347	2,725,744	353,893	330,748	125,909
1999	60,758	35,329	2,891,499	367,532	343,495	141,481
2000	43,821	30,194	2,364,357	301,165	281,469	101,329
2001	50,410	19,293	1,876,613	246,203	230,101	85,894
2002	47,476	21,311	2,108,810	270,084	252,421	89,885
2003	47,733	19,851	2,029,761	261,009	243,939	89,631
2004	43,465	21,790	1,978,821	257,866	241,002	80,466
2005	40,145	21,735	1,754,581	252,342	235,839	72,675

1/ The average growth of a crop is 22 to 26 months. Only a portion of the total acreage in cane is harvested each year.

Source: Hawaiian Sugar Planters' Association, *Hawaiian Sugar Manual* (annual), and records; Hawaii Agriculture Research Center, records.

**Table 22.11-- VALUE OF SALES FOR PINEAPPLE AND SUGAR PRODUCTION:
1980 TO 2004**

[In millions of dollars]

Year	Pineapple		Sugar	
	Canned fruit and juices 1/	Fresh market sales 2/	Raw sugar 96°	Commercial molasses
1980	192.2	34.3	566.4	27.7
1981	172.0	45.6	314.2	13.7
1982	156.1	49.9	343.9	7.6
1983	171.6	47.4	396.5	13.7
1984	202.0	47.6	382.9	10.1
1985	171.7	50.8	331.9	8.9
1986	184.9	53.5	348.4	13.5
1987	202.9	48.5	325.0	10.9
1988	191.7	55.3	312.9	11.1
1989	182.7	59.2	313.6	8.4
1990	161.6	54.3	319.0	9.9
1991	172.7	51.9	261.0	9.7
1992	141.8	55.9	229.2	8.4
1993	86.6	54.0	242.9	9.0
1994	81.1	53.0	239.2	8.7
1995	72.5	62.5	190.5	9.7
1996	78.2	68.8	160.8	8.0
1997	73.0	63.7	127.5	5.0
1998	81.3	63.8	130.3	2.8
1999	72.3	72.5	129.5	1.8
2000	60.8	71.4	93.1	2.8
2001	67.7	68.9	86.4	4.2
2002	71.0	73.0	95.9	4.4
2003	3/ 64.4	3/ 78.5	95.9	3.1
2004	57.3	65.9	91.7	2.4

1/ Value of canned fruit and juices and by-product shipped out-of-State and sold within State.

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

3/ Revised from previous *Data Book*.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaii Agriculture* (annual)

<<http://www.nass.usda.gov/hi/stats/stat-pgs.htm>>; records.