

Section 19

AGRICULTURE

This section presents statistics on agricultural land, farms, crops, livestock, dairy products, poultry, and aquaculture. Related information appears in Sections 6 (land use), 12 and 15 (agricultural employment and earnings), and 22 (food processing).

Important sources for data on agriculture include the *United States Census of Agriculture*, most recently published for 1997, the annual report on *Statistics of Hawaiian Agriculture* issued by the Hawaii Agricultural Statistics Service, and data compiled by the former Hawaiian Sugar Planters' Association, now the Hawaii Agriculture Research Center, and the Aquaculture Development Program of the Hawaii State Department of Land and Natural Resources. Agricultural data for earlier years are summarized in *Historical Statistics of Hawaii*, Section 13. National statistics appear in Section 23 of the *Statistical Abstract of the United States: 1998*.

**Table 19.01-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1992 AND 1997**

Item		1992	1997
Farms	number	5,336	5,473
Land in farms	acres	1,588,843	1,439,071
Average size of farm	acres	298	263
Value of land and buildings:			
Average per farm	dollars	722,189	632,281
Average per acre	dollars	2,425	2,405
Estimated market value of all machinery and equipment:			
Average per farm	dollars	53,207	38,709
Farms by size:			
1 to 9 acres		3,410	3,456
10 to 49 acres		1,342	1,417
50 to 179 acres		313	318
180 to 499 acres		133	139
500 to 999 acres		34	43
1,000 acres or more		104	100
Total cropland			
	farms	4,735	4,882
	acres	293,371	292,107
Harvested cropland			
	farms	4,472	4,594
	acres	136,431	100,094
Irrigated land			
	farms	2,220	2,241
	acres	134,338	76,971
Market value of agricultural products sold			
Average per farm	\$1,000 dollars	552,054	496,935
Crops, including nursery and greenhouse crops	\$1,000	103,458	90,798
Livestock, poultry, and their products	\$1,000	453,410	401,411
		98,644	95,524
Farms by value of sales:			
Less than \$2,500		1,790	1,638
\$2,500 to \$4,999		754	743
\$5,000 to \$9,999		715	797
\$10,000 to \$24,999		863	989
\$25,000 to \$49,999		484	535
\$50,000 to \$99,999		291	323
\$100,000 or more		439	448

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**Table 19.01-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1992 AND 1997 -- Con.**

Item		1992	1997
Total farm production expenses	\$1,000	466,826	398,567
Average per farm	dollars	87,486	(NA)
Net cash return from agriculture sales for the farm unit	farms	5,336	(NA)
Average per farm	\$1,000 dollars	85,228 15,972	(NA) (NA)
Operators by principal occupation:			
Farming		2,926	3,052
Other		2,410	2,421
Operators by days worked off farm:			
Any		2,864	2,827
200 days or more		1,487	1,566
Livestock and poultry:			
Cattle and calves inventory	farms	874	829
	number	191,230	181,732
Beef cows	farms	655	625
	number	87,620	93,711
Milk cows	farms	57	44
	number	10,816	8,389
Cattle and calves sold	farms	699	660
	number	82,788	66,726
Hogs and pigs inventory	farms	253	248
	number	28,570	29,440
Hogs and pigs sold	farms	200	190
	number	47,831	38,066
Sheep and lambs inventory	farms	62	(NA)
	number	22,938	(NA)
Chicken inventory 1/	farms	177	140
	number	935,278	726,534
Broilers and other meat-type chickens sold	farms	14	9
	number	1,201,331	478,672

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**Table 19.01-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1992 AND 1997 -- Con.**

Item		1992	1997
Selected crops harvested:			
Sugarcane for sugar	farms	31	13
	acres	62,915	31,483
	tons	5,488,214	2,873,712
Pineapples harvested	farms	21	27
	acres	15,500	12,992
	tons	556,748	348,428
Vegetables harvested	farms	602	657
	acres	5,129	6,549
Land in orchards	farms	2,537	2,786
	acres	38,590	37,906

1/ Data for 1992 are for chickens 3 months old or older inventory.

Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service, *1997 Census of Agriculture, Vol.1, Part 11, Hawaii* (March 1999), table 1, pp. 10-11.

Table 19.02-- FARMS AND LAND IN FARMS, FOR COUNTIES: 1997

Item		Hawaii	Honolulu	Kauai	Maui
Farms	number	3,319	880	468	806
Land in farms	acres	870,012	79,927	197,042	292,090
Average size of farm	acres	262	91	421	362
Value of land and buildings:					
Average per farm	dollars	574,464	565,361	847,704	818,342
Average per acre	dollars	2,192	6,225	2,013	2,258
Estimated market value of all machinery and equipment:					
Average per farm	dollars	21,997	33,250	81,111	88,989
Farms by size:					
1 to 9 acres		2,062	664	262	468
10 to 49 acres		893	156	135	233
50 to 179 acres		207	28	35	48
180 to 499 acres		71	17	22	29
500 to 999 acres		32	3	3	5
1,000 acres or more		54	12	11	23
Total cropland					
	farms	3,035	777	386	684
	acres	102,991	29,237	(D)	(D)
Harvested cropland					
	farms	2,897	749	343	605
	acres	32,410	15,355	20,086	32,243
Irrigated land					
	farms	857	629	275	480
	acres	7,425	16,303	18,212	35,031
Market value of agricultural products sold					
Average per farm	\$1,000 dollars	168,111	142,965	57,474	128,385
Crops, including nursery and greenhouse crops	\$1,000	50,651	162,460	122,808	159,287
Livestock, poultry, and their products	\$1,000	129,018	103,477	52,832	116,084
	\$1,000	39,094	39,488	4,642	12,301

D Withheld to avoid disclosing data for individual farms.

Source: U.S. Dept. of Agriculture, National Agricultural Statistics Service, *1997 Census of Agriculture, Vol.1, Part 11, Hawaii* (March 1999), p.150.

**Table 19.03-- NUMBER OF FARMS, FARM ACREAGE, AND FARM
EMPLOYMENT: 1980 TO 1997**

Year	Number of farms 1/	Farm acreage 2/ (1,000)	Farm employment 3/		
			Self-employed farm operators	Unpaid family members 3/	Hired workers
1980	4,300	1,970	3,400	1,100	10,550
1981	4,400	1,965	3,100	900	10,500
1982	4,500	1,960	2,600	1,300	13,000
1983	4,500	1,900	2,500	1,500	13,000
1984	4,600	1,850	2,200	1,300	11,800
1985	4,600	1,800	2,200	1,200	10,600
1986	4,600	1,750	2,050	1,200	9,700
1987	4,650	1,720	2,600	1,100	10,700
1988	4,650	1,720	2,600	1,100	10,300
1989	4,650	1,720	2,400	1,100	9,800
1990	4,700	1,680	2,500	1,000	9,600
1991	4,700	1,630	3,100	1,100	9,600
1992	4,800	1,590	3,100	1,300	9,500
1993 4/	5,200	1,560	2,800	1,100	8,700
1994 4/	5,300	1,530	2,700	1,200	8,100
1995 4/	5,300	1,470	2,700	1,000	7,300
1996 4/	5,400	1,440	2,700	1,000	7,400
1997	5,500	1,440	2,700	1,200	7,000

1/ Based on farm definition of \$1,000 or more of agricultural sales.

2/ Includes land not in crop and pasture, such as farm house lots, roads, woodlots, etc.

3/ Working 15 or more hours per week.

4/ Number of farms and Hired workers numbers for 1993-96 have been revised from previous year databook.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.04-- VALUE OF CROP AND LIVESTOCK SALES: 1980 TO 1997

[\$1,000]

Year	All crops and livestock	Crops				Livestock
		All crops	Sugar (unprocessed cane)	Pine-apples (fresh equiv.)	Other crops	
1980	634,101	552,877	385,100	76,596	91,181	81,224
1981	489,502	401,348	207,500	89,745	104,103	88,154
1982	507,268	428,860	230,800	94,364	103,696	78,408
1983	568,414	481,926	266,900	100,376	114,650	86,488
1984	550,517	463,502	256,200	89,928	117,374	87,015
1985	528,649	445,826	222,400	90,530	132,896	82,823
1986	564,717	481,312	233,800	99,720	147,792	83,405
1987	557,298	469,565	218,000	99,286	152,279	87,733
1988	573,962	485,293	209,900	107,402	167,991	88,669
1989	585,048	493,261	210,300	98,310	184,651	91,787
1990	595,030	506,586	213,800	106,365	186,421	88,444
1991	551,382	464,139	174,900	107,775	181,464	87,243
1992	520,227	431,958	153,700	102,100	176,158	88,269
1993	506,475	421,593	163,000	79,850	178,743	84,882
1994	503,780	427,150	160,100	78,890	188,160	76,630
1995 1/	492,683	421,089	127,700	87,360	206,029	71,594
1996 1/	494,565	428,671	108,100	95,914	224,657	65,894
1997	485,743	418,016	85,500	91,721	240,795	67,727

1/ 1995 and 1996 Total crops sales and Total livestock sales figures have been revised from previous year databook table.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.05-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, BY COUNTIES OR ISLANDS: 1987, 1995, 1996, AND 1997

County or island and year 1/	Number of farms 2/	Farm acreage 3/ (1,000)	Farm employment 4/		
			Self-employed farm operators	Unpaid family members 5/	Hired workers
State total:					
1987	4,650	1,720	2,600	1,100	10,700
1995	5,300	1,470	2,700	1,000	7,300
1996	5,400	1,440	2,700	1,000	7,400
1997	5,500	1,440	2,700	1,200	7,000
Hawaii County:					
1987	2,700	1,010	1,725	750	3,800
1995	3,150	890	1,750	550	2,550
1996	3,250	870	1,800	600	2,600
1997	3,300	870	1,800	700	2,450
Maui County:					
1987	600	360	260	140	2,800
1995	800	295	300	100	1,850
1996	800	290	300	150	1,850
1997	800	290	300	100	1,850
Oahu:					
1987	950	125	460	160	2,800
1995	900	85	500	250	1,900
1996	900	80	450	200	2,000
1997	900	80	500	300	1,900
Kauai County:					
1987	400	225	160	50	1,300
1995	450	200	200	150	1,000
1996	450	200	200	100	1,000
1997	500	200	200	100	850

1/ 1995 and 1996 data have been revised from previous year databook table.

2/ Based on farm definition of \$1,000 or more of agricultural sales.

3/ Includes land not in crops and pasture, such as farm house lots, roads, woodlots, etc.

4/ Data not comparable among years shown due to changes in survey periods; sum of county estimates may not add due to rounding.

5/ Working 15 hours or more per week.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); *Hawaii Agricultural Labor* (quarterly); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

**Table 19.06-- VALUE OF CROP AND LIVESTOCK SALES, BY COUNTIES
OR ISLANDS: 1987, 1995, 1996 AND 1997**

[\$1,000]

County or island and year	All crops and livestock 1/	Crops				Livestock 1/
		All crops 1/	Sugar (unpro- cessed cane)	Pine- apples 2/ (fresh equiv.)	Other crops 1,2/	
State total:						
1987	557,298	469,565	218,000	99,286	152,279	87,733
1995	492,683	421,089	127,700	87,360	206,029	71,594
1996	494,565	428,671	108,100	95,914	224,657	65,894
1997	485,743	418,016	85,500	91,721	240,795	67,727
Hawaii County:						
1987	180,306	153,891	64,400	(Z)	89,491	26,415
1995	145,721	128,564	12,200	(Z)	116,364	17,157
1996	141,433	125,428	1,700	(Z)	123,728	16,005
1997	149,700	131,876	-	(Z)	131,876	17,824
Maui County:						
1987	146,717	136,126	66,900	46,366	22,860	10,591
1995	124,657	114,064	59,400	24,775	29,889	10,593
1996	126,587	116,444	57,200	27,144	32,100	10,143
1997	127,608	116,453	53,900	28,295	34,258	11,155
Oahu:						
1987	166,738	121,084	35,500	52,920	32,664	45,654
1995	162,668	123,074	21,000	62,585	39,489	39,594
1996	156,590	121,045	10,400	68,770	41,875	35,545
1997	142,355	107,536	-	63,426	44,110	34,819
Kauai County:						
1987	63,537	58,464	51,200	(Z)	7,264	5,073
1995	59,637	55,387	35,100	(Z)	20,287	4,250
1996	69,955	65,754	38,800	(Z)	26,954	4,201
1997	66,080	62,151	31,600	(Z)	30,551	3,929

Z Less than \$50,000.

1/ 1995 and 1996 data have been revised from previous year databook table.

2/ County data may fail to add exactly to State total.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual);
and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

**Table 19.07-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES:
1987, 1995, 1996, AND 1997**

Subject	1987	1995	1996	1997
Acreage in crop (1,000 acres):				
Sugarcane	181.1	83.8	68.8	68.7
Pineapples (land used for pineapple)	36.1	19.9	20.0	19.9
Vegetables and melons (harvested acreage)	5.6	6.0	6.2	6.5
Fruits, excluding pineapples	7.0	7.0	7.1	8.0
Coffee 1/	2.4	6.8	6.6	7.0
Macadamia nuts	21.5	20.3	20.2	20.2
All other crops 1/	6.0	6.5	8.4	12.6
Number of crop farms:				
Sugar	100	9	7	4
Pineapples	12	15	20	15
Vegetables and melons	660	690	950	1,000
Fruits (excluding pineapples)	774	924	1,040	1,043
Coffee	630	580	560	585
Macadamia nuts	650	650	680	700
Taro	140	190	180	160
Flowers and nursery products	670	705	690	670
Volume of crop marketings:				
Sugar, unprocessed cane (1,000 tons)	8,014	3,953	3,544	2,925
Pineapples, fresh equivalent (1,000 tons)	692	345	347	324
Vegetables and melons (1,000 lb.)	95,330	89,100	92,420	100,850
Fruits, excluding pineapples (1,000 lb.)	99,330	83,520	74,260	73,750
Coffee, parchment (1,000 lb.)	1,800	5,400	6,400	9,400
Macadamia nuts, in shell (1,000 lb.) 1/	42,700	51,000	56,500	58,000
Taro (1,000 lb.)	6,300	6,800	5,700	5,500
Value of crop sales (\$1,000):				
Sugar (unprocessed cane)	218,000	127,700	108,100	85,500
Pineapples (fresh equivalent)	99,286	87,360	95,914	91,721
Vegetables and melons	30,556	38,604	40,672	44,626
Fruits (excluding pineapples) 1/	17,431	28,218	26,521	29,564
Coffee (parchment)	4,860	16,200	20,800	28,200
Macadamia nuts (in shell)	35,868	37,740	44,070	43,500
Taro	1,676	3,264	2,793	2,805
Seed Crops 2/	(NA)	13,000	20,250	22,800
Flowers and nursery products	54,731	68,175	68,870	68,160

NA Not Available

1/ Data have been revised from previous year databook table.

2/ Seed crops have been included in this table, replacing field crops of previous years.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.08-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES, BY COUNTIES OR ISLANDS: 1997

Subject	Hawaii County	Maui County	Oahu	Kauai County
Acreage in crop (1,000 acres):				
Sugarcane	-	43.1	-	25.6
Pineapples (land used for pineapple)	(2/)	9.1	10.8	(2/)
Vegetables and melons (harvested acreage)	2.1	1.4	2.9	0.1
Fruits, excluding pineapples	5.6	0.3	1.3	0.8
Coffee	2.5	(D)	(D)	(D)
Macadamia nuts	(D)	(D)	(D)	(D)
All other crops	1.7	1.2	8.2	1.5
Number of crop farms:				
Sugar	-	2	-	2
Pineapples	6	4	2	3
Vegetables and melons	440	105	400	55
Fruits (excluding pineapples)	704	86	129	124
Coffee	575	(D)	(D)	(D)
Macadamia nuts	(D)	(D)	(D)	(D)
Taro	85	15	10	50
Flowers and nursery products	312	106	202	50
Volume of crop marketings:				
Sugar, unprocessed cane (1,000 tons)	-	1,784	-	1,141
Pineapples, fresh equivalent (1,000 tons)	(3/)	188	136	(3/)
Vegetables and melons (1,000 lb.)	35,465	26,590	37,825	970
Fruits, excluding pineapples (1,000 lb.)	51,250	1,990	8,700	11,810
Coffee, parchment (1,000 lb.)	2,850	(D)	(D)	(D)
Macadamia nuts, in shell (1,000 lb.)	(D)	(D)	(D)	(D)
Taro (1,000 lb.)	1,300	(D)	(D)	3,300
Value of crop sales (\$1,000):				
Sugar (unprocessed cane)	-	53,900	-	31,600
Pineapples (fresh equivalent)	(4/)	28,295	63,426	(4/)
Vegetables and melons	17,585	11,692	14,499	850
Fruits (excluding pineapples)	21,018	1,136	4,814	2,596
Coffee (parchment)	16,245	(D)	(D)	(D)
Macadamia nuts (in shell)	(D)	(D)	(D)	(D)
Taro	698	(D)	(D)	1,657
Seed crops 5/	(D)	(D)	(D)	(D)
Flowers and nursery products	35,290	8,320	22,720	1,930

D Withheld to avoid disclosure of individual operations.

2/ Less than 50 acres.

1/ Kauai, Maui, and Molokai combined to avoid disclosure of individual operations.

3/ Less than 500 tons.

4/ Less than \$50,000.

5/ seed crops have been included in this table, replacing field crops of previous years.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.09-- SPECIALTY CROPS, FRUITS, AND VEGETABLES: 1997

[Data shown for crops with sales in excess of \$1,000,000]

Crop	Acreage harvested	Yield per acre (1,000 lb.)	Production (1,000 lb.)	Farm price (cents per lb.)	Value of sales (\$1,000)
Specialty crops:					
Coffee (1997-98)	5,800	1.6	9,400	300.0	28,200
Fresh herbs	1,300	...	2,360
Ginger roots	275	44.0	12,100	75.0	8,107
Macadamia nuts (1996-97)	19,200	3.0	65,000	66.9	43,500
Seed crops (1997-98)	2,300	...	3,950	...	22,800
Fruits:					
Bananas	1,020	13.4	13,700	38.0	5,206
Guavas	670	...	15,900	12.2	1,940
Papayas	1,985	19.5	38,800	48.9	18,978
Vegetables:					
Cabbage, Chinese	390	19.7	7,700	23.0	1,771
Cabbage, head	650	20.0	13,000	20.5	2,665
Cucumbers	440	12.5	5,500	40.0	2,200
Onions, dry	185	9.2	1,700	98.0	1,666
Onions, green	155	9.0	1,400	96.0	1,344
Peppers, green	200	10.0	2,000	49.0	980
Potatoes, sweet	240	10.0	2,400	52.0	1,248
Taro	1/ 450	...	5,200	51.0	2,652
Tomatoes	340	30.0	10,200	54.0	5,508
Watercress	1/ 35	...	1,020	115.0	1,173
Watermelons	840	20.0	16,800	18.0	3,024

1/ Acreage in crop.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

**Table 19.10-- SUGARCANE ACREAGE, BY TYPE OF IRRIGATION:
1984 TO 1998**

Year	Total cane land	Irrigated cane land		Unirrigated cane land
		Drip	Furrow or overhead	
1984	188,396	86,925	26,325	75,146
1985	187,858	89,129	24,323	74,406
1986	184,179	90,877	19,526	73,776
1987	180,967	88,812	18,602	73,553
1988	177,693	88,387	17,791	71,515
1989	170,816	86,030	16,687	68,099
1990	161,991	83,252	15,129	63,610
1991	155,608	80,366	13,745	61,497
1992	145,790	76,132	13,008	58,777
1993	121,322	74,557	11,595	35,170
1994	98,413	68,547	10,753	19,113
1995	81,957	62,462	8,416	11,079
1996	68,816	56,147	7,511	5,158
1997	67,820	55,585	7,115	5,120
1998	67,585	55,828	6,620	5,137

Source: Hawaiian Sugar Planters' Association, records; Alexander & Baldwin, Inc., "Water to the Roots," *Ampersand*, Spring 1987, pp. 3-6; and Hawaii Agricultural Research Center, records.

**Table 19.11-- GOVERNMENT PAYMENTS FOR AGRICULTURE:
1986 TO 1997**

[\$1,000]

Year	Amount	Year	Amount	Year	Amount
1986	2,810	1990	657	1994 1/	2,911
1987	344	1991	730	1995 1/	947
1988	465	1992	734	1996 1/	580
1989	396	1993	2,018	1997 1/	584

NA Not available.

1/ 1994-1997 data may not be comparable with previous data.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual);
and <http://www.econ.ag.gov/briefing/fbe/fi/figpdmu.htm>

**Table 19.12-- FRESH FRUIT AND VEGETABLE ARRIVALS IN HONOLULU,
BY SOURCE: 1994 TO 1996**

[1,000 pounds, net]

Source	1994	1995	1996
Total arrivals 1/	307,386	297,800	294,525
From Hawaii	84,374	81,840	74,947
Oahu	20,264	27,618	32,380
Other islands	64,109	54,222	42,568
Hawaii	31,735	27,451	24,574
Maui	13,037	12,434	9,352
Molokai	19,149	14,006	8,187
Kauai	188	330	455
From U.S. Mainland	216,942	210,306	213,763
From foreign countries	6,070	5,653	5,815

Data subject to revisions.

1/ Ship and plane arrivals.

Source: Hawaii State Department of Agriculture, Market Analysis and News Branch, *Honolulu Arrivals, Fresh Fruits and Vegetables, 1994-1996*, table 1, and records.

**Table 19.13-- LIVESTOCK INVENTORY, 1985 TO 1997, AND BY
GEOGRAPHIC AREAS, 1997**

[In thousands]

Year and geographic area	All cattle and calves 1/	Milk cows 1/	Hogs and pigs 2/ 3/	Chickens (excluding broilers) 2/	Bee colonies
1985	209	11	55	1,210	9
1986	199	12	50	1,185	9
1987	203	12	47	1,212	9
1988	212	12	43	1,217	9
1989	205	11	39	1,216	9
1990	215	11	36	1,183	10
1991	200	10	34	1,213	10
1992	178	11	35	1,109	9
1993	165	11	33	1,012	9
1994	175	11	35	981	9
1995	171	10	34	933	8
1996	166	10	27	876	8
1997	164	9	27	863	9
GEOGRAPHIC AREAS: 1997					
Hawaii County	111.8	2.2	1.3	(D)	(NA)
Maui	21.2	1.0	4.5	(D)	(NA)
Molokai and Lanai	6.4	0.0	(4/)	(D)	(NA)
Oahu	13.3	5.0	17.7	713	(NA)
Kauai County	11.3	0.6	3.5	(D)	(NA)

NA Not available.

D Withheld to avoid disclosing data for individual operations.

1/ As of January 1 of the following year.

2/ As of December 1.

3/ 1996 data have been revised from previous year databook table.

4/ Combined with Maui.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.14-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS, AND VALUE OF LIVESTOCK SALES: 1987, 1995, 1996, AND 1997

Subject	1987	1995	1996	1997
Number of livestock operations, Dec. 31:				
Cattle 1/	900	800	800	800
Hogs	600	350	350	350
Milk	90	60	60	60
Eggs	55	55	55	55
Honey	14	17	25	23
Volume of livestock marketings:				
Beef (dressed weight; 1,000 lb.) 2/	34,335	7,895	10,161	10,024
Pork (dressed weight; 1,000 lb.) 3/	8,431	6,239	6,210	4,579
Milk (million lb.)	153.7	139.4	125.9	119.3
Eggs (million)	223.3	186.0	179.0	172.0
Honey (1,000 lb.)	1,710	1,032	1,240	1,314
Value of livestock sales (\$1,000):				
Cattle 4/	27,401	14,639	11,905	14,323
Hogs 3/ 4/	8,509	6,672	6,732	4,902
Milk	31,201	32,146	29,234	29,479
Eggs	14,291	13,516	12,963	12,914

1/ Includes beef, dairy, and dairy replacement operations.

2/ Includes slaughter cattle, but excludes calves shipped out-of-state.

3/ 1996 data have been revised from previous year databook table.

4/ Excludes interfarm sales; includes out-of-state sales of slaughter cattle and feeder calves.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

Table 19.15-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS, AND VALUE OF LIVESTOCK SALES, BY COUNTIES OR ISLANDS: 1997

Subject	Hawaii County	Maui County	Oahu	Kauai County
Number of livestock operations, Dec. 31:				
Cattle 1/	410	190	60	140
Hogs	60	70	160	60
Milk	30	5	15	10
Eggs	25	7	19	4
Honey	14	5	(2/)	4
Volume of livestock marketings:				
Beef (dressed weight; 1,000 lb.) 3/	5,184	2,844	967	1,029
Pork (dressed weight; 1,000 lb.)	394	933	2,846	406
Milk (million lb.)	(D)	(D)	76.4	(D)
Eggs (million)	(D)	(D)	137.9	(D)
Honey (1,000 lb.)	(D)	(D)	(D)	(D)
Value of livestock sales (\$1,000):				
Cattle 4/	8,404	4,345	563	1,011
Hogs 4/	404	1,008	3,036	454
Milk	(D)	(D)	19,204	(D)
Eggs	(D)	(D)	9,930	(D)

D Withheld to avoid disclosure of individual operations.

1/ Includes beef, dairy, and dairy replacement operations.

2/ Oahu combined with Maui County to avoid disclosure of individual operations.

3/ Includes slaughter cattle but excludes calves shipped out-of-state.

4/ Excludes interfarm sales; includes out-of-state sales of slaughter cattle and feeder calves.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual); and http://www.nass.usda.gov/hi/stats/t_of_c.htm.

**Table 19.16-- FLORICULTURE AND NURSERY PRODUCTS, 1992 TO 1997,
AND BY ISLANDS, 1994 TO 1997**

Island and year	Number of farms	Growing area					Wholesale value (\$1,000)
		Total (acres)	Green-house (1,000 sq. ft.)	Artificial shade structure (1,000 sq. ft.)	Natural shade area (acres)	Open field (acres)	
State total:							
1992	686	2,497	3,880	22,025	13	1,890	69,679
1993	662	2,384	4,565	19,955	21	1,800	69,513
1994	660	2,290	3,770	21,600	18	1,690	67,005
1995	705	2,698	3,770	24,215	15	2,040	68,175
1996 1/	690	2,212	2,820	23,405	10	1,600	68,870
1997	370	2,158	2,805	23,885	10	1,535	68,160
Islands, 1994:							
Hawaii	304	1,175	2,715	16,330	18	720	31,337
Kauai	40	106	105	390	0	95	1,899
Maui/Molokai	102	499	310	505	0	480	7,912
Oahu	214	510	640	4,375	0	395	25,857
Islands, 1995:							
Hawaii	333	1,630	2,910	18,880	15	1,115	32,608
Kauai	46	105	40	375	0	95	1,801
Maui/Molokai	106	465	270	375	0	450	7,796
Oahu	220	498	550	4,585	0	380	25,970
Islands, 1996: 1/							
Hawaii	316	1,240	1,990	17,815	10	775	34,275
Kauai	52	69	60	345	0	60	1,965
Maui/Molokai	111	428	230	335	0	415	7,515
Oahu	211	475	540	4,910	0	350	25,115
Islands, 1997:							
Hawaii	312	1,363	2,000	18,805	10	875	35,290
Kauai	50	65	60	355	0	55	1,830
Maui/Molokai	106	308	235	345	0	295	8,320
Oahu	202	422	510	4,380	0	310	22,720

1/ Data have been revised from previous year databook table.

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers & Nursery Products, Annual Summary* (August 10, 1998), pp. 10 and 13.

**Table 19.17-- FLORICULTURE AND NURSERY PRODUCTS, BY
COMMODITY: 1997**

[Shown for commodities with value of sales over \$500,000 and growers with total sales of
\$10,000 or more]

Commodity	Number of farms having sales	Number sold		Value of sales (\$1,000)
		Unit	Number	
Selected cut flowers:				
Anthuriums	61	1,000 dozens	838	7,421
Heliconias	47	1,000 dozens	46	510
Proteas	30	1,000 stems	1,413	1,166
Orchids:				
Sprays: Dendrobium	56	1,000 dozens	368	2,547
Potted: Dendrobiums	63	1,000 pots	1,409	6,388
Lei or individual flowers:				
Vanda, Miss Joaquim	9	Million blooms	22.3	657
Plumerias	11	Million blooms	31.8	833
Dendrobiums	35	Million blooms	24.8	725
Foliage:				
Potted, primarily for--				
Indoor or patio use	60	...	(NA)	13,362
Landscape use	62	...	(NA)	3,515
Unfinished stock	16	...	(NA)	511
Potted flowering plants:				
Poinsettias	28	1,000 pots	238	900
Ornamentals and trees	42	...	(NA)	1,561
Plant rentals	37	...	(NA)	2,925

NA Not available.

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers & Nursery Products, Annual Summary*, (August 10, 1998), pp. 3-8.

Table 19.18-- OUT-OF-STATE SALES OF FLORICULTURE AND NURSERY PRODUCTS: 1993 TO 1997

[\$1,000. Based on F.O.B. island value. Includes both wholesale and retail sales]

Type	1993	1994	1995	1996	1997
Total sales	40,740	36,775	38,985	38,390	41,400
Anthuriums, cut	11,115	10,310	10,395	9,705	10,945
Foliage, potted	9,655	9,090	9,910	9,500	10,320
Other flowers, nursery products	19,970	17,375	18,680	19,185	20,135

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers & Nursery Products, Annual Summary*, (August 10, 1998), p. 18.

Table 19.19-- LAND EVALUATION RATING, FOR SIX MAJOR ISLANDS: 1985

[Thousand acres. The Land Evaluation and Site Assessment Commission land evaluation rating is a composite index, scaled from 0 to 100, based on measurements of soil productivity and the suitability of land for agricultural purposes. Data exclude Kahoolawe, Niihau, Lehua, Kaula, and the Northwestern Hawaiian Islands]

Land evaluation rating	Six-island total	Hawaii	Maui	Lanai	Molokai	Oahu	Kauai
Total area	4,042	2,579	466	90	166	386	355
90 to 100	66	-	17	3	7	39	-
80 to 89	137	17	39	11	16	33	20
70 to 79	189	95	20	20	6	27	40
60 to 69	212	125	36	(Z)	9	22	20
50 to 59	221	113	64	3	10	12	18
40 to 49	309	227	40	6	10	18	7
30 to 39	605	543	29	1	3	11	17
20 to 29	492	282	55	48	50	30	26
10 to 19	1,813	1,176	165	15	55	194	206
Under 10	-	-	-	-	-	-	-
Mean rating	32.8	29.8	40.8	36.7	37.6	40.1	32.9

Z Less than 500 acres.

Source: Land Evaluation and Site Assessment Commission, *A Report on the State of Hawaii Land Evaluation and Site Assessment System* (February 1986), Exhibit A.

Table 19.20-- AGRICULTURAL LABOR: WORKERS ON FARMS, STATE OF HAWAII, 1993-1998

Year	Farm employment			Hired Workers by type of farm			
	Total	Self-Employed farm operators	Unpaid workers 1/	Hired workers 2/	Sugar	Pineapple	Other
1993	12,600	2,800	1,100	8,700	2,500	1,400	4,800
1994	11,950	2,700	1,200	8,100	2,300	1,300	4,500
1995	11,050	2,700	1,000	7,300	1,700	1,200	4,400
1996	11,100	2,700	1,000	7,400	1,400	1,200	4,800
1997	10,900	2,700	1,200	7,000	1,200	1,300	4,500
1998	11,250	2,700	1,150	7,450	1,200	1,200	5,050

1/ Includes family members and others working 15 or more hours per week.

2/ Sum of hired workers by type of farm may not add to hired workers total due to rounding.

Source: Hawaii Agricultural Statistics Service, Hawaii Agricultural Labor, Quarterly, various issues.

**Table 19.21-- GENERAL EXCISE TAX BASE FOR PRODUCING:
1987 TO 1998**

[In thousands of dollars. Data are on a cash basis accounting. "Producing" refers to the raising and production of agricultural products in their natural state, the production of natural resource products, fishing, and aquaculture]

Year 1/	Amount	Year 1/	Amount	Year 1/	Amount
1987	274,202	1991	301,884	1995	457,538
1988	298,261	1992	408,662	1996	479,009
1989	326,400	1993	474,861	1997 2/	505,557
1990	317,337	1994	467,174	1998	478,201

1/ 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.

2/ 1997 data revised from previous year databook.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual tabular release, as revised 2/18/99).

**Table 19.22-- AGRICULTURAL CHEMICALS USED, INCLUDING
FERTILIZER: 1987 TO 1997**

Chemicals used		1987	1992	1997
Any chemicals, fertilizer, or lime used 1/	farms	4,105	4,476	4,531
Commercial fertilizer	farms	3,524	4,028	4,051
	acres on which used	225,457	200,723	133,927
	\$1,000	30,717	30,574	25,653
Agricultural chemicals	farms	3,881	3,853	3,834
	\$1,000	18,233	20,396	17,187
Sprays, dusts, granules, fumigants, etc., to control --				
Insects on hay and other crops	farms	2,008	1,790	1,604
	acres on which used	68,150	53,593	34,673
Nematodes in crops	farms	663	489	350
	acres on which used	15,792	15,587	11,086
Diseases in crops and orchards	farms	1,151	1,018	1,033
	acres on which used	(D)	21,036	33,343
Weeds, grass, or brush in crops and pasture	farms	2,887	2,820	2,685
	acres on which used	235,871	178,422	122,576
Chemicals used for defoliation or for growth control of crops or thinning of fruit	farms	212	157	184
	acres on which used	57,481	40,292	15,184

D Withheld to avoid disclosing data for individual farms.

1/ Data for 1987 include farms on which lime was applied alone or together with fertilizer and/or chemicals.

Source: U.S. Department of Agriculture, *1997 Census of Agriculture, AC97-A-11, Hawaii*, (March 1999), p. 23.

Table 19.23-- AQUACULTURE INDUSTRY OPERATIONS: 1970 TO 1996

Year	Number of operations, Dec. 31	Acreage, Dec. 31	Production (1,000 lb.)	Value (\$1,000)
1970	2	193	20	11
1971	2	193	17	17
1972	2	193	18	23
1973	3	203	34	34
1974	4	213	41	136
1975	10	234	82	178
1976	14	235	94	210
1977	25	246	123	281
1978	25	320	178	525
1979	23	493	246	1,531
1980	37	575	320	1,655
1981	41	547	338	1,868
1982	44	643	551	2,625
1983	42	496	345	1,605
1984	47	474	441	2,300
1985	48	465	583	2,780
1986	44	444	1,015	3,549
1987	45	437	1,689	6,263
1988	44	477	1,170	5,560
1989	46	479	1,264	6,835
1990	53	489	1,452	9,241
1991	71	595	1,207	6,884
1992	83	615	1,272	7,134
1993	90	640	1,296	7,469
1994	105	605	990	9,036
1995	107	635	1,410	13,307
1996	115	695	1,992	15,656

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, records.

**Table 19.24-- AQUACULTURE OPERATIONS, ACREAGE, PRODUCTION,
AND VALUE, BY COUNTIES: 1995 AND 1996**

Subject	State total	Hawaii	Maui	Honolulu	Kauai
1995					
Number of operations	107	40	18	38	11
Acreage (Dec. 31)	635	175	35	400	25
Production (1,000 lb.)	1,409.6	1,055.9	50.1	303.6	(NA)
Shellfish	414.6	262.1	40.0	112.5	(NA)
Finfish	125.2	40.0	10.1	75.1	(NA)
Algae	869.8	753.8	-	116.0	(NA)
Other 1/	(NA)	(NA)	(NA)	(NA)	(NA)
Value (\$1,000)	13,306.5	11,402.2	279.1	1,625.2	(NA)
Shellfish	3,462.4	2,569.6	240.2	652.6	(NA)
Finfish	769.5	342.3	38.2	389.0	(NA)
Algae	8,685.9	8,428.7	-	257.2	(NA)
Other 1/	388.7	61.6	0.7	326.4	(NA)
1996					
Number of operations	115	43	19	42	11
Acreage (Dec. 31)	695	230	40	400	25
Production (1,000 lb.)	1,991.9	1,612.5	75.1	304.3	(NA)
Shellfish	616.8	432.8	60.0	124.0	(NA)
Finfish	129.2	66.6	15.1	47.5	(NA)
Algae	1,245.9	1,113.1	(NA)	132.8	(NA)
Other 1/	(NA)	(NA)	(NA)	(NA)	(NA)
Value (\$1,000)	15,655.7	13,197.3	402.8	2,055.6	(NA)
Shellfish	4,315.5	3,188.7	350.0	776.8	(NA)
Finfish	1,191.6	764.9	52.8	373.9	(NA)
Algae	9,082.4	8,779.1	(NA)	303.3	(NA)
Other 1/	1,066.2	464.6	(NA)	601.6	(NA)

NA Not available.

1/ Nonfood products: ornamental fish, seedstock, other.

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, records.