

## Section 19

# AGRICULTURE

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

There were 4,400 farms in Hawaii in 1987, with a total area of 1.95 million acres. The value of crop sales in 1987 was \$469 million, or 80 percent higher than the total for 1977. Livestock sales amounted to \$88 million, or 35 percent more than the 1977 level. Combined crop and livestock sales in 1987 ranged from \$63 million in Kauai County to \$181 million on the Big Island. Major crops were sugar (\$218 million in sales, up 51 percent over the decade), pineapple (\$99 million, or 59 percent over the 1977 total), flowers and nursery products (\$56 million, or 298 percent more than in 1977), and macadamia nuts (\$36 million, up 347 percent). Diversified crops, defined as all crops other than sugar and pineapple, rose from \$54 million in 1977 to \$152 million in 1987, or approximately 183 percent. About 670 farms sold \$56 million of flowers and nursery products in 1987, chiefly anthuriums, potted foliage, and orchids. Important products of livestock farms as of 1987 included cattle (\$27 million in sales), milk (\$31 million), and eggs (\$14 million). In 1987, Hawaii produced 36 percent of the fresh market vegetables consumed locally, 28 percent of the fresh market fruits, 31 percent of the beef and veal, 19 percent of the chickens, and 84 percent of the eggs.

Aquaculture has been growing in importance in recent years, with an aggregate value rising from \$1,655,000 in 1980 to \$6.3 million in 1987. Shellfish production amounted to 1.2 million pounds in 1987, with a value of \$4.5 million.

Statistics on Hawaiian agriculture exclude pakalōlō (marijuana) and other illicit plants. Authorities confiscated \$1.9 billion worth of marijuana in 1987, but the proportion escaping detection is unknown.

Important sources for data on agriculture include the United States Census of Agriculture, most recently published for 1982, the annual report on Statistics of Hawaiian Agriculture issued by the Hawaii Agricultural Statistics Service, and data compiled by the Hawaiian Sugar Planters' Association and the Aquaculture Development Program of the 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: 1988.

Table 575.-- FARMS, LAND IN FARMS, AND LAND USE: 1982 AND 1978

Subject	1982	1978
Farms ..... number ...	4,595	4,310
Land in farms ..... acres ....	1,957,501	1,988,282
Average size of farm ..... acres ....	426	461
Value of land and buildings:		
Average per farm ..... dollars ..	778,471	413,948
Average per acre ..... dollars ..	1,826	897
Farms by size:		
1 to 9 acres .....	2,743	2,527
10 to 49 acres .....	1,261	1,211
50 to 179 acres .....	320	296
180 to 499 acres .....	126	146
500 to 999 acres .....	33	24
1,000 to 1,999 acres .....	33	32
2,000 acres or more .....	79	74
Land in farms according to use:		
Total cropland ..... farms ....	3,856	3,565
acres ....	346,113	333,262
Harvested cropland ..... farms ....	3,538	3,299
acres ....	155,960	158,639
Cropland used only for pasture or grazing ..... farms ....	400	272
acres ....	33,557	27,191
Other cropland ..... farms ....	855	1,089
acres ....	156,596	147,432
Woodland, including woodland pastured ... farms ....	148	146
acres ....	117,270	145,802
Pastureland and rangeland other than cropland and woodland pastured ..... farms ....	743	611
acres ....	1,132,849	1,143,095
Land in house lots, ponds, roads, wasteland, etc. .... farms ....	2,227	1,859
acres ....	361,269	366,123
Irrigated land ..... farms ....	1,544	1,493
acres ....	145,982	159,323

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC82-A-11 (September 1984), Chapter 1, tables 1 and 4.

Table 576.-- CHARACTERISTICS OF FARM OPERATORS: 1982 AND 1978

Subject	1982	1978
Farms by type of organization:		
Individual or family ..... number ....	3,852	3,614
acres .....	481,212	656,332
Partnership ..... number ....	351	326
acres .....	130,761	222,668
Corporation:		
Family held ..... number ....	272	233
acres .....	507,280	377,595
Other than family held ..... number ....	80	93
acres .....	492,941	595,644
Other -- cooperative, estate or trust, institutional, etc. number ....	40	44
acres .....	345,307	136,043
Operators by principal occupation and residence:		
Farming <sup>1/</sup> .....	2,565	2,239
Residence on farm operated .....	1,629	1,287
Residence not on farm operated .....	657	516
Other than farming <sup>1/</sup> .....	2,030	2,071
Residence on farm operated .....	1,043	890
Residence not on farm operated .....	779	660
Average age of operators .....	52.7	52.7
Female operators:		
Farms ..... number ....	615	579
Land in farms ..... acres .....	129,674	132,173
Operators reporting days of work off farm:		
Any .....	2,534	2,495
100 days or more .....	2,024	1,878

<sup>1/</sup> Components do not sum to category total because of non-reporting.

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Preliminary Report, Hawaii, AC82-A-15-000(P) (January 1984), table 2, and 1982 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC82-A-11 (September 1984), Chapter 1, tables 5 and 46.

Table 577.-- GENERAL EXCISE TAX BASE FOR PRODUCING:  
1977 TO 1987

[In thousands of dollars. Data are on a cash basis accounting]

Year <u>1/</u>	Amount	Year <u>1/</u>	Amount	Year <u>1/</u>	Amount
1977 <u>2/</u> ....	136,869	1981 ....	176,582	1985 ....	262,791
1978 <u>2/</u> ....	151,955	1982 ....	173,891	1986 ....	250,954
1979 .....	156,873	1983 ....	220,298	1987 ....	274,202
1980 .....	143,694	1984 .....	242,641		

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/ Partly estimated.

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

Table 578.-- MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD, BY COUNTIES:  
1982 AND 1978

Year	State total	Hawaii	Honolulu	Kauai	Maui
Total sales (\$1,000):					
1982 .....	558,608	206,427	144,028	70,957	137,196
1978 .....	419,251	148,399	118,608	48,679	103,564
Sales per farm (dollars):					
1982 .....	121,569	81,302	147,570	173,066	204,771
1978 .....	97,274	65,490	112,639	131,920	166,502

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC82-A-11 (September 1984), Chapter 2, table 3.

Table 579.-- FARMS, LAND IN FARMS, AND LAND USE, FOR COUNTIES: 1982

Subject	Hawaii	Hono- lulu	Kauai	Maui <sup>1/</sup>
Farms ..... number ..	2,539	976	410	670
Land in farms ..... acres ..	1,172,448	125,932	255,981	403,140
Average size of farm ..... acres ..	462	129	624	602
Value of land and buildings:				
Average per farm ..... dollars	639,822	389,732	1,833,704	1,225,224
Average per acre ..... dollars	1,385	3,017	2,930	2,036
Farms by size:				
1 to 9 acres .....	1,468	768	191	316
10 to 49 acres .....	746	141	136	238
50 to 179 acres .....	178	27	51	64
180 to 499 acres .....	68	17	16	25
500 to 999 acres .....	21	8	1	3
1,000 to 1,999 acres .....	13	8	7	5
2,000 acres or more .....	45	7	8	19
Land in farms according to use:				
Total cropland ..... farms ..	2,286	757	286	507
..... acres ..	135,796	50,614	51,868	107,835
Harvested cropland ..... farms ..	2,123	732	240	443
..... acres ..	59,629	(D)	24,039	(D)
Cropland used only for				
pasture or grazing .... farms ..	195	32	77	96
..... acres ..	17,438	(D)	2,670	(D)
Other cropland ..... farms ..	514	142	78	121
..... acres ..	58,729	22,696	25,159	50,012
Woodland, including woodland				
pastured ..... farms ..	80	22	13	33
..... acres ..	80,103	20,366	1,636	15,165
Pastureland and rangeland				
other than cropland and				
woodland pastured ..... farms ..	339	84	145	175
..... acres ..	788,077	27,873	108,759	208,140
Land in house lots, ponds,				
roads, wasteland, etc. .. farms ..	1,109	475	251	392
..... acres ..	168,472	27,079	93,718	72,000
Irrigated land ..... acres ..	11,870	36,131	34,414	63,567

D Withheld to avoid disclosing data for individual farms.

<sup>1/</sup> Includes Kalawao (no farms in 1982).

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC82-A-11 (September 1984), Chapter 2, tables 1, 2, and 4.

Table 580.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT:  
1970 TO 1987

Year	Number of farms <u>1/</u>	Farm acreage <u>2/</u> (1,000)	Farm employment <u>3/</u>		
			Self-employed farm operators	Unpaid family members	Hired workers
1970 .....	4,500	2,300	3,200	1,450	12,450
1971 .....	4,400	2,300	3,050	1,500	11,810
1972 .....	4,300	2,300	3,050	1,550	11,220
1973 .....	4,300	2,300	3,050	1,550	10,770
1974 .....	3,800	2,200	3,040	1,660	10,180
1975 .....	3,900	2,150	3,060	1,720	11,040
1976 .....	4,000	2,100	2,890	1,560	11,240
1977 .....	4,100	2,050	2,840	1,550	11,300
1978 .....	4,300	1,980	2,890	1,810	11,600
1979 .....	4,300	1,980	3,020	1,520	10,800
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	1,960	2,500	1,500	13,000
1984 .....	4,600	1,950	2,200	1,300	11,800
1985 .....	4,400	1,950	2,200	1,200	10,600
1986 .....	4,300	1,950	2,050	1,200	9,700
1987 .....	4,400	1,950	2,600	1,100	10,700

1/ Based on farm definition of \$600 or more of agricultural sales prior to 1974 and \$1,000 or more thereafter.

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

3/ Annual averages through 1980, and varying dates thereafter.

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

Table 581.-- VALUE OF CROP AND LIVESTOCK SALES: 1970 TO 1987

[\$1,000]

Year	All crops and livestock	Crops				Live-stock
		All crops	Sugar (unprocessed cane)	Pine-apples (fresh equiv.)	Other crops	
1970 .....	213,667	172,019	110,600	39,500	21,919	41,648
1971 .....	221,692	178,639	115,800	40,300	22,539	43,053
1972 .....	232,497	186,255	117,300	43,900	25,055	46,242
1973 .....	265,771	210,502	141,900	39,600	29,002	55,269
1974 .....	575,432	517,523	442,300	40,259	34,964	57,909
1975 .....	377,575	319,304	237,000	41,616	40,688	58,271
1976 .....	327,820	265,498	164,700	52,983	47,815	62,322
1977 .....	325,182	260,164	144,200	62,249	53,715	65,018
1978 .....	380,655	308,098	182,700	63,090	62,308	72,557
1979 .....	441,253	362,789	217,600	69,409	75,780	78,464
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 <u>1/</u> ...	568,413	481,925	266,900	100,376	114,649	86,488
1984 .....	550,517	463,502	256,200	89,928	117,374	87,015
1985 <u>1/</u> ...	528,649	445,826	222,400	90,530	132,896	82,823
1986 <u>I/</u> ...	564,717	481,312	233,800	99,720	147,792	83,405
1987 .....	556,987	469,048	218,000	99,286	151,762	87,939

1/ Revised from Data Book 1987, table 579.

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

Table 582.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, BY COUNTIES OR ISLANDS: 1977, 1986, AND 1987

County or island	Number of farms <u>1/</u>	Farm acreage <u>2/</u> (1,000) <sup>-</sup>	Farm employment <u>3/</u>		
			Self-employed farm operators	Unpaid family members	Hired workers
State total:					
1977 .....	4,100	2,300	2,840	1,550	11,300
1986 .....	4,200	1,950	2,050	1,200	9,700
1987 .....	4,400	1,950	2,600	1,100	10,700
Hawaii County:					
1977 .....	2,450	1,340	1,610	925	3,500
1986 .....	2,500	1,140	1,350	800	3,100
1987 .....	2,600	1,140	1,725	750	3,800
Maui County:					
1977 .....	500	530	325	160	3,260
1986 .....	500	420	200	100	2,800
1987 .....	500	420	260	140	2,800
Oahu:					
1977 .....	850	150	650	350	2,875
1986 .....	950	120	350	250	2,500
1987 .....	950	120	460	160	2,800
Kauai County:					
1977 .....	300	280	250	110	1,650
1986 .....	350	275	150	50	1,250
1987 .....	350	275	160	50	1,300

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

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

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

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



Table 583.-- VALUE OF CROP AND LIVESTOCK SALES, BY COUNTIES  
OR ISLANDS: 1977, 1986, AND 1987

[\$1,000]

County and year	All crops and livestock	Crops				Live- stock
		All crops	Sugar (unpro- cessed cane)	Pine- apples (fresh equiv.)	Other crops	
State total:						
1977 .....	325,182	260,164	144,200	62,249	53,715	65,018
1986 <u>1/</u> ...	564,717	481,312	233,800	99,720	147,792	83,405
1987 .....	556,987	469,048	218,000	99,286	151,762	87,939
Hawaii County:						
1977 .....	96,088	80,781	51,900	-	28,881	15,307
1986 <u>1/</u> .....	187,958	165,976	74,100	-	91,876	21,982
1987 .....	181,228	154,639	64,400	-	90,239	20,589
Maui County:						
1977 .....	85,200	76,643	37,100	30,578	8,965	8,557
1986 <u>1/</u> .....	144,393	132,647	67,500	45,540	19,607	11,751
1987 .....	146,533	135,934	66,900	46,366	22,668	10,599
Oahu:						
1977 .....	105,233	67,669	23,000	31,671	12,998	37,564
1986 <u>1/</u> .....	166,680	122,237	38,200	54,180	29,857	44,443
1987 .....	166,281	120,626	35,500	52,920	32,206	45,655
Kauai County:						
1977 .....	38,661	35,071	32,200	-	2,871	3,590
1986 <u>1/</u> .....	65,681	60,452	54,000	(2/)	6,452	5,229
1987 .....	62,945	57,849	51,200	( <u>2/</u> )	6,649	5,096

1/ Revised from Data Book 1987, table 581.

2/ Less than \$50,000.

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

Table 584.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES: 1977, 1986, AND 1987

Subject	1977	1986	1987 <u>1/</u>
Acreage in crop (1,000 acres):			
Sugarcane .....	220.7	184.3	181.1
Pineapples (land used for pineapple) .....	45.0	36.0	36.1
Vegetables and melons (harvested acreage) ..	3.8	5.4	5.6
Fruits, excluding pineapples .....	5.1	6.8	7.0
Coffee .....	2.4	2.3	2.3
Macadamia nuts .....	9.9	21.2	21.5
Miscellaneous crops .....	6.2	5.8	5.8
Number of crop farms:			
Sugar .....	520	120	100
Pineapples .....	16	18	12
Vegetables and melons .....	504	750	660
Fruits (excluding pineapples) .....	673	793	774
Coffee .....	780	620	620
Macadamia nuts .....	456	645	650
Taro .....	129	140	140
Flowers and nursery products .....	550	635	670
Volume of crop marketings:			
Sugar, unprocessed cane (1,000 tons) .....	8,994	8,379	8,014
Pineapples, fresh equivalent (1,000 tons) ..	690	646	692
Vegetables and melons (1,000 lb.) .....	68,380	91,950	94,080
Fruits, excluding pineapples (1,000 lb.) ...	76,830	90,610	99,440
Coffee, parchment (1,000 lb.) .....	2,270	3,000	1,700
Macadamia nuts, in shell (1,000 lb.) .....	19,680	44,000	42,700
Taro (1,000 lb.) .....	7,870	6,330	6,300
Value of crop sales (\$1,000):			
Sugar (unprocessed cane) .....	144,200	233,800	218,000
Pineapples (fresh equivalent) .....	62,249	99,720	99,286
Vegetables and melons .....	15,108	30,267	29,993
Fruits (excluding pineapples) .....	9,365	16,606	17,471
Coffee (parchment) .....	3,133	8,700	4,845
Macadamia nuts (in shell) .....	8,029	35,200	35,868
Taro .....	999	1,462	1,701
Field crops (not estimated separately) .....	2,948	6,595	5,907
Flowers and nursery products .....	14,003	49,094	55,767

NA Not available.

1/ Revised from Data Book 1987, table 582.

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

Table 585.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES, BY GEOGRAPHIC AREAS: 1987

Subject	Hawaii County	Maui County	Oahu	Kauai County
Acreage in crop (1,000 acres):				
Sugarcane .....	68.5	43.9	25.7	43.0
Pineapples (land used for pineapple) .....	-	23.7	12.4	1/
Vegetables and melons (harvested acreage)	1.9	2.2	1.4	0.1
Fruits, excluding pineapples .....	5.3	0.1	0.8	0.8
Coffee .....	2.5	-	-	-
Macadamia nuts .....	19.5	(D)	(D)	(D)
Miscellaneous crops .....	2.8	1.6	0.8	0.6
Number of crop farms:				
Sugar .....	89	3	3	5
Pineapples .....	-	7	2	3
Vegetables and melons .....	344	92	186	38
Fruits (excluding pineapples) .....	518	43	143	70
Coffee .....	620	-	-	-
Macadamia nuts .....	630	9	3	8
Taro .....	68	19	7	46
Flowers and nursery products .....	320	90	230	30
Volume of crop marketings:				
Sugar, unprocessed cane (1,000 tons) .....	2,566	2,236	1,300	1,912
Pineapples, fresh equivalent (1,000 tons)	-	444	248	2/
Vegetables and melons (1,000 lb.) .....	35,990	42,140	14,900	1,050
Fruits, excluding pineapples (1,000 lb.) .	76,240	1,250	6,430	15,520
Coffee, parchment (1,000 lb.) .....	1,700	-	-	-
Macadamia nuts, in shell (1,000 lb.) .....	41,300	(D)	(D)	(D)
Taro (1,000 lb.) .....	1,280	(D)	(D)	4,170
Value of crop sales (\$1,000):				
Sugar (unprocessed cane) .....	64,400	66,900	35,000	51,200
Pineapples (fresh equivalent) .....	-	46,366	52,920	3/
Vegetables and melons .....	11,523	11,111	6,926	433
Fruits (excluding pineapples) .....	13,064	295	1,785	2,327
Coffee (parchment) .....	4,845	-	-	-
Macadamia nuts (in shell) .....	34,527	(D)	(D)	(D)
Taro .....	476	(D)	(D)	1,017
Field crops (not estimated separately) ...	651	3,219	482	1,555
Flowers and nursery products .....	24,958	6,570	22,967	1,272

D Withheld to avoid disclosure of individual operations.

1/ Less than 500 acres.

2/ Less than 500 tons.

3/ Less than \$50,000.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1987.

Table 586.-- VEGETABLES, MELONS, FRUITS, NUTS, COFFEE, AND TARO: 1987

[Data shown for crops with sales in excess of \$500,000]

Crop	Acreage har- vested <sup>1/</sup>	Yield per acre (1,000 lb.)	Produc- tion (1,000 lb.)	Farm price (cents per lb.)	Value of sales (\$1,000)
Vegetables and melons:					
Snap beans .....	150	5.9	890	74.3	661
Chinese cabbage .....	400	20.0	8,000	15.9	1,272
Head cabbage .....	510	29.3	14,950	14.6	2,183
Celery .....	90	30.3	2,730	20.6	562
Cucumbers .....	200	19.8	3,960	28.2	1,117
Daikon .....	250	14.8	3,700	17.1	633
Eggplant .....	55	23.5	1,290	53.4	689
Ginger root .....	215	46.7	10,050	45.0	4,523
Lettuce (head, semi-head)	520	13.5	7,000	27.4	1,918
Dry onions .....	170	11.6	1,980	72.6	1,437
Green peppers .....	200	11.5	2,300	45.2	1,040
Burdock .....	30	19.3	580	87.4	507
Tomatoes .....	250	28.0	7,000	42.6	2,982
Watermelons .....	740	18.6	13,800	11.9	1,642
Green onions .....	170	7.2	1,220	73.1	892
Watercress .....	40	30.8	1,230	92.9	1,142
Sweet corn .....	345	4.3	1,480	34.2	506
Fruits:					
Bananas .....	1,070	10.7	11,400	29.7	3,386
Guavas .....	710	24.6	17,450	12.0	2,094
Papayas .....	2,350	28.5	67,000	16.5	11,050
Macadamia nuts (1987-1988)	15,600	2.7	42,700	84.0	35,868
Coffee (1987-1988) .....	2,050	0.8	1,700	285.0	4,845
Taro .....	400	15.8	6,300	27.0	1,701

<sup>1/</sup> Acreage bearing for macadamia nuts; acreage in crop for watercress and taro.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1987.

Table 587.-- SUGARCANE ACREAGE, BY TYPE OF IRRIGATION:  
1972 TO 1987

Year	Total cane land	Irrigated cane land		Unirrigated cane land
		Drip	Furrow or overhead	
1972 .....	229,611	327	119,704	109,580
1973 .....	226,580	2,544	116,136	107,900
1974 .....	224,227	5,662	112,919	105,646
1975 .....	221,426	12,719	103,998	104,709
1976 .....	221,551	21,250	98,797	101,504
1977 .....	220,729	30,042	91,368	99,319
1978 .....	220,697	39,167	80,207	101,323
1979 .....	218,773	49,202	70,936	98,635
1980 .....	217,718	60,241	58,966	98,511
1981 .....	216,099	69,665	48,493	97,941
1982 .....	204,749	73,551	41,896	89,302
1983 .....	194,258	80,019	33,459	80,780
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

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

Table 588.-- FRESH FRUIT AND VEGETABLE ARRIVALS IN HONOLULU,  
BY SOURCE: 1985 TO 1987

[1,000 pounds, net]

Source	1985	1986	1987
Total arrivals .....	275,623	291,212	295,701
From Hawaii .....	101,080	103,793	102,078
Oahu <u>1/</u> .....	44,260	44,582	40,160
Other islands <u>2/</u> .....	56,820	59,211	61,918
Hawaii <u>2/</u> .....	29,188	27,932	29,510
Maui <u>2/</u> .....	15,949	15,512	16,229
Molokai <u>2/</u> .....	8,654	13,295	14,279
Kauai <u>2/</u> .....	3,029	2,472	1,900
From U.S. Mainland <u>2/</u> .....	165,833	179,647	183,952
From foreign countries <u>2/</u> .....	8,710	7,772	9,671

1/ Wholesalers' truck receipts.

2/ Ship and plane arrivals.

Source: Hawaii State Department of Agriculture, Market News Service, Honolulu Arrivals, Fresh Fruits and Vegetables, 1987 (March 1988), table 1.

Table 589.--FEED INSHIPMENTS FROM ALL SOURCES: 1983 TO 1986

[1,000 tons. This survey was discontinued after 1986]

Commodity	1983	1984	1985	1986
Total feed .....	193.0	191.6	170.2	141.4
Feed grains .....	89.8	88.4	78.4	68.4
Mixed feeds .....	24.5	21.8	18.5	14.5
Alfalfa products .....	30.2	32.3	24.1	19.5
Protein foods .....	26.5	29.6	28.6	25.4
Other feed stuff .....	21.9	19.5	20.6	13.6

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1987.

Table 590.-- LIVESTOCK INVENTORY, 1977, 1986, AND 1988, AND BY  
GEOGRAPHIC AREAS, 1987

[ In thousands ]

Year and geographic area	All cattle and calves <u>1/</u>	Milk cows <u>1/</u>	Hogs and pigs <u>2/</u>	Chickens (excluding broilers) <u>2/</u>	Bee colon- ies
1977 .....	240	14	62	1,301	7
1986 .....	195	12	50	1,185	9
1987 .....	199	12	47	1,212	9
GEOGRAPHIC AREAS: 1987					
Hawaii County .....	123.1	1.7	4.4	194	(NA)
Maui .....	27.8	1.0	8.8	( <u>3/</u> )	(NA)
Molokai and Lanai .....	0.7	-	0.7	( <u>3/</u> )	(NA)
Oahu .....	33.5	8.8	28.5	1,018	(NA)
Kauai County .....	13.9	0.4	4.6	( <u>3/</u> )	(NA)

NA Not available.

1/ As of January 1.

2/ As of December 1.

3/ Kauai, Maui, and Molokai combined with Hawaii to avoid disclosure of individual operations.

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

Table 591.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,  
AND VALUE OF LIVESTOCK SALES: 1977, 1986, AND 1987

Subject	1977	1986 <u>1/</u>	1987
Number of livestock operations, Dec. 31:			
Cattle <u>2/</u> .....	900	800	800
Hogs .....	640	600	600
Milk .....	80	90	90
Eggs .....	70	55	55
Broilers .....	10	8	8
Honey .....	23	20	14
Volume of livestock marketings:			
Beef (dressed weight; 1,000 lb.) <u>3/</u> .....	32,325	33,764	34,335
Pork (dressed weight; 1,000 lb.) .....	8,762	8,643	8,430
Milk (million lb.) .....	147.5	153.1	153.1
Eggs (million) .....	218	227.0	223.3
Broilers and chickens (1,000 lb.) <u>4/</u> .....	6,158	7,629	7,988
Honey (1,000 lb.) .....	679	1,323	1,710
Value of livestock sales (\$1,000):			
Cattle <u>5/</u> .....	18,837	24,645	27,401
Hogs <u>5/</u> .....	7,115	8,770	8,509
Milk .....	23,158	30,605	31,201
Eggs .....	12,408	13,450	14,291
Broilers and chickens .....	3,125	4,744	5,119
Other <u>6/</u> .....	375	1,191	1,418

1/ Revised from Data Book 1987, table 589.

2/ Includes beef, dairy, and dairy replacement farms. 1977 as of January 1.

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

4/ Ready-to-cook weight.

5/ Excludes interfarm sales; includes out-of-State sales of slaughter cattle and feeder calves.

6/ Includes sheep, wool, turkeys, horses, honey, and beeswax.

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



Table 592.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,  
AND VALUE OF LIVESTOCK SALES, BY GEOGRAPHIC AREAS: 1987

Subject	Hawaii County	Maui County	Oahu	Kauai County
Number of livestock operations, Dec. 31:				
Cattle <u>1/</u> .....	380	180	70	170
Hogs .....	80	100	300	120
Milk .....	41	16	20	13
Eggs .....	25	7	19	4
Broilers .....	-	-	7	1
Honey .....	5	4	3	5
Volume of livestock marketings:				
Beef <u>2/</u> (dressed weight; 1,000 lb.) .....	25,894	5,263	1,475	1,923
Pork (dressed weight; 1,000 lb.) .....	688	1,780	4,933	1,045
Milk (million lb.) .....	(D)	(D)	115.7	(D)
Eggs (million) .....	(D)	(D)	179.8	(D)
Broilers and chickens <u>3/</u> (1,000 lb.) .....	(D)	(D)	737	(D)
Honey (1,000 lb.) .....	(D)	(D)	(D)	(D)
Value of livestock sales (\$1,000):				
Cattle <u>4/</u> .....	20,535	4,317	924	1,625
Hogs <u>4/</u> .....	707	1,934	4,754	1,114
Milk .....	(D)	(D)	23,895	(D)
Eggs .....	(D)	(D)	11,282	(D)
Broilers and chickens .....	(D)	(D)	(D)	(D)
Other <u>5/</u> .....	988	161	53	216

D Withheld to avoid disclosure of individual operations.

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

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

3/ Ready-to-cook weight.

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

5/ Includes sheep, wool, turkeys, horses, honey, and beeswax.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1987.

Table 593.-- FLOWERS AND NURSERY PRODUCTS, 1985 TO 1987, AND BY ISLANDS, 1987

Island and year	Number of farms	Growing area					Value of sales (\$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:							
1985 .....	675	1,761	2,836	29,643	91	924	44,162
1986 <u>1/</u> ....	635	1,652	2,535	27,610	55	905	49,132
1987 .....	670	1,849	3,145	27,970	55	1,080	55,767
Islands, 1987:							
Hawaii .....	320	999	1,710	19,820	55	450	24,958
Kauai .....	30	47	25	260	-	40	1,272
Maui .....	90	295	340	760	-	270	6,570
Oahu .....	230	508	1,070	7,130	-	320	22,967

NA Not available.

1/ Revised from Data Book 1987, table 591.

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (July 21, 1988).

Table 594.-- VALUE OF SALES, TOTAL AND OUT-OF-STATE, FOR FLOWERS AND NURSERY PRODUCTS: 1983 TO 1987

[\$1,000]

Subject	1983	1984	1985	1986 <u>1/</u>	1987
Total sales <u>2/</u> .....	36,165	38,905	44,162	49,132	55,767
Anthuriums, cut .....	6,035	7,351	7,645	9,878	8,342
Out-of-State sales <u>3/</u> .	22,000	21,610	24,284	28,136	31,904
Anthuriums, cut .....	7,005	7,050	7,581	8,653	9,170

1/ Revised from Data Book 1987, table 594.

2/ Wholesale value only.

3/ Includes retail sales.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1987.

Table 595.-- FLOWERS AND NURSERY PRODUCTS, BY COMMODITY: 1987

[Shown for commodities with value of sales over \$750,000]

Commodity	Number of farms	Number sold		Value of sales (\$1,000)
		Unit	Number	
Selected cut flowers:				
Anthuriums .....	167	1,000 dozens	1,996	8,342
Heliconias .....	78	1,000 dozens	161	1,427
Roses, tea .....	11	1,000 dozens	5,534	1,946
Protea .....	37	1,000 stems	1,468	876
Orchids:				
Sprays: Dendrobium .....	72	1,000 dozens	378	2,397
Potted: Dendrobiums .....	86	1,000 pots	641	2,208
Lei flowers:				
Carnations .....	18	Million blooms	26.6	967
Tuberose .....	6	Million blooms	95.5	2,433
Ornamentals and trees .....	42	...	(NA)	2,015
Foliage:				
Potted, primarily for--				
Indoor or patio use .....	102	...	(NA)	14,883
Landscape use .....	34	...	(NA)	2,102
Unfinished stock (for further growing on) .....	24	...	(NA)	1,394
Potted flowering plants:				
Chrysanthemms .....	13	1,000 pots	309	966

NA Not available.

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (July 21, 1988).

Table 596.-- MARKET SUPPLY OF SPECIFIED FOODS: 1977, 1986, AND 1987

Commodity and year	Total market supply <u>1/</u>			Per capita market supply <u>2/</u>	Percent from Hawaii
	Total	Inship-ment	Hawaii		
Fresh market fruits:					
1977 .....	70,439	49,783	20,656	72.7	29.3
1986 <u>3/</u> .....	100,253	72,253	28,000	84.9	27.9
1987 .....	104,764	75,139	29,625	87.2	28.3
Fresh market melons:					
1977 .....	10,871	8,786	2,085	11.2	21.8
1986 <u>3/</u> .....	27,155	12,855	14,300	23.0	52.7
1987 .....	27,809	14,009	13,800	23.2	49.6
Fresh market vegetables:					
1977 .....	152,532	88,132	64,400	157.4	42.4
1986 <u>3/</u> .....	210,299	134,084	76,215	178.1	36.2
1987 .....	218,385	139,485	78,900	181.8	36.1
Beef and veal: <u>4/</u>					
1977 .....	93,142	60,817	32,325	96.1	34.7
1986 <u>3/</u> .....	108,047	74,283	33,764	91.5	31.5
1987 .....	109,015	74,680	34,335	90.8	31.5
Pork: <u>4/</u>					
1977 .....	31,971	23,221	8,750	33.0	33.8
1986 <u>3/</u> .....	38,686	30,043	8,643	32.8	22.5
1987 .....	39,678	31,247	8,431	33.0	21.2
Chickens:					
1977 .....	28,021	21,863	6,158	28.9	22.0
1986 <u>3/</u> .....	40,248	32,619	7,629	34.1	19.1
1987 .....	42,323	34,335	7,988	35.2	18.9
Eggs:					
1977 .....	19,706	1,506	18,200	23.1	96.3
1986 <u>3/</u> .....	21,983	3,066	18,917	18.6	86.0
1987 .....	22,105	3,497	18,608	18.4	84.2

1/ Eggs in 1,000 dozens; other foods in 1,000 pounds.

2/ Eggs in dozens; other foods in pounds. Based on de facto population estimates in table 3.

3/ Revised from Data Book 1987, table 594.

4/ Carcass weight equivalent.

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

Table 597.-- 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	2	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 and A Report on the State of Hawaii Land Evaluation and Site Assessment System (February 1986), Exhibit A.

Table 598. -- AGRICULTURAL CHEMICALS USED, INCLUDING FERTILIZER AND LIME:  
1982 AND 1978

Chemicals used	1982	1978
Any chemicals, fertilizer, or lime used .....	farms 3,532	3,568
Commercial fertilizer .....	farms 3,158	3,172
acres on which used	228,984	284,452
\$1,000	33,477	26,530
Lime .....	farms 525	525
acres on which used	9,547	12,488
tons	10,423	12,011
Other agricultural chemicals <u>1/</u> .....	farms 3,084	3,277
\$1,000	16,417	13,700
Sprays, dusts, granules, fumigants, etc., to control --		
Insects on hay and other crops .....	farms 1,702	1,204
acres on which used	45,671	28,787
Nematodes in crops .....	farms 654	441
acres on which used	9,638	9,806
Diseases in crops and orchards .....	farms 1,067	912
acres on which used	18,085	12,310
Weeds, grass, or brush in crops and pasture	farms 2,385	2,325
acres on which used	213,551	269,801
Chemicals used for defoliation or for growth control of crops or thinning of fruit .....	farms 165	160
acres on which used	50,455	57,280

1/ Data for 1978 include the cost of lime which was not collected in 1982.

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC82-A-11 (September 1984), Chap. 1, table 16.

Table 599.-- NUMBER OF AQUACULTURE INDUSTRY OPERATIONS,  
BY COUNTIES: 1982 TO 1987

[As of December 31]

County	1982	1983	1984	1985	1986	1987
ALL AQUACULTURE INDUSTRY OPERATIONS						
State total .....	44	42	47	48	44	45
Hawaii .....	8	8	14	12	12	13
Maui .....	5	5	5	6	4	3
Honolulu .....	25	24	23	24	23	25
Kauai .....	6	5	5	6	5	4
PRAWN PRODUCERS						
State total .....	22	21	17	20	20	14
Hawaii .....	4	3	3	5	3	2
Maui .....	1	1	1	-	1	-
Honolulu .....	13	13	10	11	13	10
Kauai .....	4	4	3	4	3	2

Source: Hawaii State Department of Land and Natural Resources,  
Aquaculture Development Program, October 3, 1988.

Table 600.-- AQUACULTURE ACREAGE, PRODUCTION, AND VALUE, BY COUNTIES:  
1987

Subject	State total	Hawaii	Maui	Honolulu	Kauai
Acreage (Dec. 31) .....	437	29	1	374	33
Production (1,000 lb.)..	1,688.7	79.2	(NA)	1,609.5	(NA)
Shellfish .....	1,187.5	(NA)	(NA)	1,187.5	(NA)
Finfish .....	317.7	34.7	(NA)	283.0	(NA)
Algae .....	183.5	44.5	(NA)	139.0	(NA)
Other <u>1/</u> .....	...	...	...	...	(NA)
Value (\$1,000) .....	6,263.4	762.1	(NA)	5,501.3	(NA)
Shellfish .....	4,534.5	(NA)	(NA)	4,534.5	(NA)
Finfish .....	733.2	101.2	(NA)	632.0	(NA)
Algae .....	637.7	410.9	(NA)	226.8	(NA)
Other <u>1/</u> .....	358.0	250.0	(NA)	108.0	(NA)

1/ Items not sold by weight: post-larvae, brine shrimp, koi, tropical fish, and aquarium plants.

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, October 3, 1988.