

## Section 19

# AGRICULTURE

This section presents statistics on agricultural land, farms, crops, livestock, dairy products, poultry, and aquaculture. Related information appears in Sections 2 (on nutrition), 6 (on land use), 12 and 15 (agricultural employment and earnings), and 22 (food processing).

There were 4,600 farms in Hawaii in 1986, with a total area of 1.95 million acres. The value of crop sales in 1986 was \$481 million, or 81 percent higher than the total for 1976. Livestock sales amounted to \$83 million, or 34 percent more than the 1976 level. Combined crop and livestock sales in 1986 ranged from \$66 million in Kauai County to \$188 million on the Big Island. Major crops were sugar (\$234 million in sales, up 42 percent over the decade), pineapple (\$100 million, or 88 percent over the 1976 total), flowers and nursery products (\$49 million, or 315 percent more than in 1976), and macadamia nuts (\$35 million, up 402 percent). Diversified crops, defined as all crops other than sugar and pineapple, rose from \$48 million in 1976 to \$148 million in 1986, or approximately 209 percent. About 590 farms sold \$49 million of flowers and nursery products in 1986, chiefly anthuriums, potted foliage, and orchids. Important products of livestock farms as of 1986 included cattle (\$25 million in sales), milk (\$31 million), and eggs (\$13 million). In 1986, Hawaii produced 36 percent of the fresh market vegetables consumed locally, 28 percent of the fresh market fruits, 32 percent of the beef and veal, 19 percent of the chickens, and 86 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 \$3.55 million in 1986. Freshwater prawn production amounted to 163,000 pounds in 1986, with a value of \$812,000.

Statistics on Hawaiian agriculture exclude pakalōlō (marijuana) and other illicit plants. Authorities confiscated \$1.05 billion worth of marijuana in 1986, 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: 1987.



Table 575.-- 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
Tenure of operator:		
Full owners ..... farms .....	2,332	2,111
acres .....	328,728	281,019
Part owners ..... farms .....	794	713
acres .....	1,286,352	1,388,319
Owned land in farms ..... acres .....	537,945	603,654
Rented land in farms ..... acres .....	748,407	784,665
Tenants ..... farms .....	1,469	1,486
acres .....	342,421	318,944
Operators by principal occupation and residence:		
Farming <u>1</u> /.....	2,565	2,239
Residence on farm operated .....	1,629	1,287
Residence not on farm operated .....	657	516
Other than farming <u>1</u> /.....	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

Continued on next page.

Table 575.-- CHARACTERISTICS OF FARM OPERATORS:  
1982 AND 1978 -- Con.

Subject	1982	1978
Operators reporting days of work off farm:		
Any .....	2,534	2,495
100 days or more .....	2,024	1,878

1/ 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 576.-- 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 577.-- FARMS, LAND IN FARMS, AND LAND USE, FOR COUNTIES: 1982

Subject	Hawaii	Hono- lulu	Kauai	Maui <u>1/</u>
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.

1/ 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 578.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT:  
1970 TO 1986

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 <u>4/</u> ....	4,400	1,950	2,200	1,200	10,600
1986 .....	4,200	1,950	2,050	1,200	9,700

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.

4/ Revised from Data Book 1986, table 552.

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

Table 579.-- VALUE OF CROP AND LIVESTOCK SALES: 1970 TO 1986

[\$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 .....	568,422	481,934	266,900	100,376	114,658	86,488
1984 <sup>1/</sup> ...	550,517	463,502	256,200	89,928	117,374	87,015
1985 <sup>1/</sup> ...	528,349	445,526	222,400	90,530	132,596	82,823
1986 .....	564,683	481,254	233,800	99,720	147,734	83,429

<sup>1/</sup> Revised from Data Book 1986, table 553.Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture (annual).

Table 580.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, BY COUNTIES OR ISLANDS: 1976, 1985, AND 1986

County or island	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
State total:					
1976 .....	4,000	2,100	2,890	1,560	11,240
1985 <u>4/</u> .....	4,400	1,950	2,200	1,200	10,600
1986 .....	4,200	1,950	2,050	1,200	9,700
Hawaii County:					
1976 .....	2,300	1,255	1,590	740	3,400
1985 <u>4/</u> .....	2,550	1,140	1,400	800	3,500
1986 .....	2,425	1,140	1,350	800	3,100
Maui County:					
1976 .....	500	435	330	180	3,370
1985 .....	550	420	250	150	2,950
1986 .....	525	420	200	100	2,800
Oahu:					
1976 .....	900	130	700	530	2,830
1985 <u>4/</u> .....	925	120	450	250	2,750
1986 .....	900	120	350	250	2,500
Kauai County:					
1976 .....	300	280	260	110	1,630
1985 .....	375	275	150	50	1,300
1986 .....	350	275	150	50	1,250

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.

4/ Revised from Data Book 1986, table 554.

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



Table 581.-- VALUE OF CROP AND LIVESTOCK SALES, BY COUNTIES  
OR ISLANDS: 1976, 1985, AND 1986

[\$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:						
1976 .....	327,820	265,498	164,700	52,983	47,815	62,322
1985 <u>1/</u> ...	528,349	445,526	222,400	90,530	132,126	82,823
1986 .....	564,683	481,254	233,800	99,720	147,734	83,429
Hawaii County:						
1976 .....	102,386	86,561	60,800	-	25,761	15,825
1985 <u>1/</u> .....	171,582	149,460	69,800	-	79,155	22,122
1986 .....	188,017	165,931	74,100	-	91,831	22,086
Maui County:						
1976 .....	87,803	79,374	41,300	30,309	7,765	8,429
1985 .....	131,464	119,249	63,600	36,380	19,309	12,215
1986 .....	144,242	132,536	67,500	45,540	19,496	11,706
Oahu:						
1976 .....	98,457	63,372	28,700	22,674	11,998	35,085
1985 .....	160,678	117,263	35,700	54,150	27,363	43,415
1986 .....	166,689	122,256	38,200	54,180	29,876	44,433
Kauai County:						
1976 .....	39,174	36,191	33,900	-	2,291	2,983
1985 <u>1/</u> .....	64,625	59,554	53,300	( <u>2/</u> )	6,299	5,071
1986 .....	65,735	60,531	54,000	( <u>2/</u> )	6,531	5,204

1/ Revised from Data Book 1986, table 555.

2/ Less than \$50,000.

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

Table 582.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES: 1976, 1985, AND 1986

Subject	1976	1985 <sup>1/</sup>	1986
Acreage in crop (1,000 acres):			
Sugarcane .....	221.6	187.9	184.3
Pineapples (land used for pineapple) .....	48.0	34.5	36.0
Vegetables and melons (harvested acreage) ..	3.6	5.4	5.4
Fruits, excluding pineapples .....	5.0	6.5	6.8
Coffee .....	2.4	2.1	2.3
Macadamia nuts .....	10.3	20.0	21.3
Miscellaneous crops .....	5.1	8.6	5.1
Number of crop farms:			
Sugar .....	520	155	120
Pineapples .....	16	18	18
Vegetables and melons .....	523	715	750
Fruits (excluding pineapples) .....	628	805	793
Coffee .....	780	620	620
Macadamia nuts .....	455	610	645
Taro .....	124	155	140
Flowers and nursery products .....	500	670	590
Volume of crop marketings:			
Sugar, unprocessed cane (1,000 tons) .....	9,173	7,916	8,379
Pineapples, fresh equivalent (1,000 tons) ..	680	565	646
Vegetables and melons (1,000 lb.) .....	63,460	89,620	91,950
Fruits, excluding pineapples (1,000 lb.) ...	65,620	80,980	90,610
Coffee, parchment (1,000 lb.) .....	2,120	1,850	2,900
Macadamia nuts, in shell (1,000 lb.) .....	18,990	42,000	44,000
Taro (1,000 lb.) .....	7,350	6,860	6,330
Value of crop sales (\$1,000):			
Sugar (unprocessed cane) .....	164,700	222,400	233,800
Pineapples (fresh equivalent) .....	52,983	90,530	99,720
Vegetables and melons .....	12,230	30,034	29,877
Fruits (excluding pineapples) .....	7,966	12,794	16,606
Coffee (parchment) .....	3,922	5,180	8,700
Macadamia nuts (in shell) .....	7,007	30,450	35,200
Taro .....	889	1,578	1,462
Field crops (not estimated separately) .....	3,843	8,198	6,595
Flowers and nursery products .....	11,828	44,162	49,094
Forest products .....	130	(NA)	(NA)

NA Not available.

<sup>1/</sup> Revised from Data Book 1986, table 556.

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

Table 583.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES, BY GEOGRAPHIC AREAS: 1986

Subject	Hawaii County	Maui County	Oahu	Kauai County
<b>Acreege in crop (1,000 acres):</b>				
Sugarcane .....	69.1	46.1	25.9	43.2
Pineapples (land used for pineapple) .....	-	24.0	12.0	(1/)
Vegetables and melons (harvested acreage)	1.9	2.0	1.4	0.1
Fruits, excluding pineapples .....	5.2	0.1	0.7	0.8
Coffee .....	2.3	-	-	-
Macadamia nuts .....	19.4	(D)	(D)	(D)
Miscellaneous crops .....	2.6	1.3	0.7	0.5
<b>Number of crop farms:</b>				
Sugar .....	109	3	3	5
Pineapples .....	-	13	2	3
Vegetables and melons .....	400	85	217	48
Fruits (excluding pineapples) .....	531	47	137	78
Coffee .....	620	-	-	-
Macadamia nuts .....	630	7	3	5
Taro .....	65	20	5	50
Flowers and nursery products .....	275	75	215	25
<b>Volume of crop marketings:</b>				
Sugar, unprocessed cane (1,000 tons) .....	2,797	2,251	1,354	1,977
Pineapples, fresh equivalent (1,000 tons)	-	415	231	(2/)
Vegetables and melons (1,000 lb.) .....	33,350	40,580	16,370	1,650
Fruits, excluding pineapples (1,000 lb.) .	68,110	1,340	6,560	14,600
Coffee, parchment (1,000 lb.) .....	2,900	-	-	-
Macadamia nuts, in shell (1,000 lb.) .....	43,350	(D)	(D)	(D)
Taro (1,000 lb.) .....	840	(D)	(D)	4,490
<b>Value of crop sales (\$1,000):</b>				
Sugar (unprocessed cane) .....	74,100	67,500	38,200	54,000
Pineapples (fresh equivalent) .....	-	45,540	54,180	(3/)
Vegetables and melons .....	11,965	9,788	7,519	605
Fruits (excluding pineapples) .....	12,381	311	1,802	2,112
Coffee (parchment) .....	8,700	-	-	-
Macadamia nuts (in shell) .....	34,680	(D)	(D)	(D)
Taro .....	236	(D)	(D)	1,010
Field crops (not estimated separately) ...	909	3,539	499	1,648
Flowers and nursery products .....	22,775	5,191	19,994	1,134

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 1986, pp. 3, 4, 6, 8, and 9.

Table 584.-- VEGETABLES, MELONS, FRUITS, NUTS, COFFEE, AND TARO: 1986

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

Crop	Acreage harvested <sup>1/</sup>	Yield per acre (1,000 lb.)	Production (1,000 lb.)	Farm price (cents per lb.)	Value of sales (\$1,000)
Vegetables and melons:					
Snap beans .....	130	7.5	980	77.2	757
Chinese cabbage .....	350	20.6	7,200	14.2	1,022
Mustard Cabbage .....	140	11.4	1,600	34.1	546
Head cabbage .....	490	28.6	14,000	15.5	2,170
Celery .....	100	26.8	2,680	21.5	576
Cucumbers .....	220	16.9	3,720	31.8	1,183
Daikon .....	260	15.0	3,900	17.6	686
Eggplant .....	55	23.6	1,300	49.7	646
Ginger root .....	145	40.7	5,900	81.0	4,779
Lettuce (head, semi-head)	620	14.0	8,700	27.2	2,366
Dry onions .....	140	10.6	1,480	73.9	1,094
Green peppers .....	190	10.8	2,050	43.6	894
Romaine .....	160	14.4	2,300	25.2	580
Sweet potatoes .....	210	10.0	2,100	27.1	569
Tomatoes .....	240	28.0	6,700	41.0	2,747
Watermelons .....	620	23.1	14,300	12.6	1,802
Green onions .....	190	7.6	1,440	81.3	1,171
Watercress .....	30	...	1,300	83.6	1,087
Fruits:					
Bananas .....	980	9.9	9,700	30.0	2,910
Guavas .....	690	...	16,560	10.5	1,739
Papayas .....	2,355	25.9	61,000	18.2	11,123
Macadamia nuts (1986-1987)	14,400	3.1	44,000	80.0	35,200
Coffee (1986-1987) .....	2,000	1.5	2,900	300.0	8,700
Taro .....	390	...	6,330	23.1	1,462

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

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1986, pp. 29-68.

Table 585.-- SUGARCANE ACREAGE, BY TYPE OF IRRIGATION:  
1972 TO 1986

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 .....	180,301	90,884	20,018	69,399

Source: Hawaiian Sugar Planters' Association, Hawaiian Sugar Manual 1985/86 (1986), pp. 10-11; Alexander & Baldwin, Inc., "Water to the Roots," Ampersand, Spring 1987, pp. 3-6.

Table 586.-- FRESH FRUIT AND VEGETABLE ARRIVALS IN HONOLULU,  
BY SOURCE: 1984 TO 1986

[1,000 pounds, net]

Source	1984	1985	1986
Total arrivals .....	265,998	275,623	291,212
From Hawaii .....	102,323	101,080	103,793
Oahu <u>1/</u> .....	47,331	44,260	44,582
Other islands <u>2/</u> .....	54,992	56,820	59,211
Hawaii <u>2/</u> .....	30,488	29,188	27,932
Maui <u>2/</u> .....	15,089	15,949	15,512
Molokai <u>2/</u> .....	6,268	8,654	13,295
Kauai <u>2/</u> .....	3,147	3,029	2,472
From U.S. Mainland <u>2/</u> .....	158,368	165,833	179,647
From foreign countries <u>2/</u> .....	5,307	8,710	7,772

1/ Wholesalers' truck receipts.

2/ Ship and plane arrivals.

Source: Hawaii State Department of Agriculture, Market News Service, Honolulu Arrivals, Fresh Fruits and Vegetables, 1986 (April 1987), table 1.

Table 587.--FEED INSHIPMENTS FROM ALL SOURCES: 1982 TO 1986

[1,000 tons]

Commodity	1982	1983	1984	1985	1986
Total feed .....	167.8	193.0	191.6	170.2	141.4
Feed grains .....	67.5	89.8	88.4	78.4	68.4
Mixed feeds .....	25.0	24.5	21.8	18.5	14.5
Alfalfa products .....	26.1	30.2	32.3	24.1	19.5
Protein foods .....	29.9	26.5	29.6	28.6	25.4
Other feed stuff .....	19.3	21.9	19.5	20.6	13.6

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1986, p. 92.

Table 588.-- LIVESTOCK INVENTORY, 1976, 1985, AND 1986, AND BY GEOGRAPHIC AREAS, 1986

[In thousands]

Year and geographic area	All cattle and calves <u>1/</u>	Milk cows <u>2/</u>	Hogs and pigs <u>3/</u>	Chickens (excluding broilers) <u>3/</u>	Bee colonies
1976 .....	245	13	60	1,254	7
1985 .....	209	11	55	1,210	9
1986 .....	195	12	50	1,185	9
GEOGRAPHIC AREAS: 1986					
Hawaii County .....	121.2	1.6	4.9	206	(NA)
Maui .....	28.5	1.0	9.2	(4/)	(NA)
Molokai and Lanai .....	-	-	0.7	(4/)	(NA)
Oahu .....	31.2	8.6	30.4	979	(NA)
Kauai County .....	14.1	0.5	4.8	(4/)	(NA)

NA Not available.

1/ As of following January 1.

2/ As of January 1.

3/ As of December 1.

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

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

Table 589.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,  
AND VALUE OF LIVESTOCK SALES: 1976, 1985, AND 1986

Subject	1976	1985 <sup>1/</sup>	1986
Number of livestock operations, Dec. 31:			
Cattle <sup>2/</sup> .....	900	850	800
Hogs .....	640	650	600
Milk .....	80	90	90
Eggs .....	70	55	55
Broilers .....	11	7	8
Honey .....	22	22	20
Volume of livestock marketings:			
Beef (dressed weight; 1,000 lb.) <sup>3/</sup> .....	32,320	33,764	33,764
Pork (dressed weight; 1,000 lb.) .....	7,781	7,859	8,643
Milk (million lb.) .....	145.8	139.8	153.1
Eggs (million) .....	218	220.5	227.0
Broilers and chickens (1,000 lb.) <sup>4/</sup> .....	6,121	7,706	7,629
Honey (1,000 lb.) .....	714	1,184	1,323
Value of livestock sales (\$1,000):			
Cattle <sup>5/</sup> .....	18,511	26,632	24,645
Hogs <sup>5/</sup> .....	6,670	7,995	8,770
Milk .....	21,943	28,310	30,605
Eggs .....	11,808	14,020	13,450
Broilers and chickens .....	2,977	4,895	4,744
Other <sup>6/</sup> .....	413	971	1,215

<sup>1/</sup> Revised from Data Book 1986, table 562.

<sup>2/</sup> As of January 1; includes beef, dairy, and dairy replacement farms.

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

<sup>4/</sup> Ready-to-cook weight.

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

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

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



Table 590.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,  
AND VALUE OF LIVESTOCK SALES, BY GEOGRAPHIC AREAS: 1986

Subject	Hawaii County	Maui County	Oahu	Kauai County
Number of livestock operations, Dec. 31:				
Cattle <u>1/</u> .....	365	200	75	160
Hogs .....	80	100	310	110
Milk .....	41	16	20	13
Eggs .....	25	7	19	4
Broilers .....	-	-	7	1
Honey .....	6	4	3	7
Volume of livestock marketings:				
Beef <u>2/</u> (dressed weight; 1,000 lb.) .....	22,500	8,175	989	2,099
Pork (dressed weight; 1,000 lb.) .....	748	1,798	5,107	990
Milk (million lb.) .....	(D)	(D)	116.5	(D)
Eggs (million) .....	(D)	(D)	189.7	(D)
Broilers and chickens <u>3/</u> (1,000 lb.) .....	(D)	(D)	(D)	(D)
Honey (1,000 lb.) .....	(D)	(D)	(D)	(D)
Value of livestock sales (\$1,000):				
Cattle <u>4/</u> .....	16,385	5,926	600	1,734
Hogs <u>4/</u> .....	778	1,918	5,005	1,069
Milk .....	(D)	(D)	23,358	(D)
Eggs .....	(D)	(D)	11,022	(D)
Broilers and chickens .....	(D)	(D)	(D)	(D)
Other <u>5/</u> .....	846	136	42	191

D Withheld to avoid disclosure of individual operations.

1/ As of January 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 1986, pp. 5, 7, and 10.

Table 591.-- FLOWERS AND NURSERY PRODUCTS, 1983 TO 1986, AND BY ISLANDS, 1986

Island and year	Number of farms	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:							
1983 .....	680	1,786	2,327	26,329	106	1,022	36,165
1984 .....	670	1,715	2,414	26,817	92	959	38,905
1985 <u>1/</u> ....	670	1,761	2,836	29,643	91	924	44,162
1986 .....	590	(NA)	(NA)	(NA)	(NA)	(NA)	49,094
Islands, 1986: <u>2/</u>							
Hawaii .....	275	966	1,439	19,087	82	413	22,775
Kauai .....	25	37	12	244	5	26	1,134
Maui .....	75	296	307	1,286	-	259	5,191
Oahu .....	215	462	1,078	9,026	4	226	19,994

NA Not available.

1/ Revised from Data Book 1986, table 564.

2/ Area data are for 1985.

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (August 6, 1986 and July 24, 1987).

Table 592.-- VALUE OF SALES, TOTAL AND OUT-OF-STATE, FOR FLOWERS AND NURSERY PRODUCTS: 1982 TO 1986

[\$1,000]

Subject	1982	1983	1984	1985 <u>1/</u>	1986
Total sales .....	30,600	36,165	38,905	44,162	49,094
Anthuriums, cut .....	5,633	6,035	7,351	7,645	9,878
Out-of-State sales .....	17,909	22,000	21,610	24,284	28,136
Anthuriums, cut .....	6,370	7,005	7,050	7,581	8,653

1/ Revised from Data Book 1986, table 565.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1986, pp. 20 and 28.

Table 593.-- FLOWERS AND NURSERY PRODUCTS, BY COMMODITY: 1986

[Shown for commodities with value of sales over \$500,000]

Commodity	Number of farms	Number sold		Value of sales (\$1,000)
		Unit	Number	
Selected cut flowers:				
Anthuriums .....	175	1,000 dozens	2,335	9,878
Roses, tea .....	9	1,000 dozens	548	1,972
Protea .....	18	1,000 stems	983	656
Chrysanthemums, pompon .....	14	1,000 bunches	353	547
Orchids:				
Cut: Dendrobium sprays .....	60	1,000 dozens	314	2,115
Potted: Dendrobiums .....	52	1,000 pots	235	1,430
Lei flowers:				
Carnations .....	19	Million blooms	25.3	935
Vanda, Miss Joaquim .....	21	Million blooms	26.1	899
Tuberose .....	6	Million blooms	38.0	1,075
Ornamentals and trees .....	34	...	(NA)	628
Foliage:				
Potted, primarily for --				
Indoor or patio use .....	73	...	(NA)	12,931
Landscape use .....	35	...	(NA)	2,215
Unfinished stock (for further growing on) .....	25	...	(NA)	2,031
Potted flowering plants:				
Chrysanthemums .....	13	1,000 pots	289	835
Poinsettias .....	29		204	685

NA Not available.

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (July 24, 1987).

Table 594.-- MARKET SUPPLY OF SPECIFIED FOODS: 1976, 1985, AND 1986

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:					
1976 .....	69,533	49,779	19,754	71.7	28.4
1985 <u>3/</u> .....	94,513	68,083	26,430	82.2	28.0
1986 .....	100,253	72,253	28,000	85.1	27.9
Fresh market melons:					
1976 .....	10,801	9,221	1,580	11.1	14.6
1985 .....	21,964	13,164	8,800	19.1	40.1
1986 .....	27,170	12,855	14,315	23.1	52.7
Fresh market vegetables:					
1976 .....	145,178	85,173	60,005	149.6	41.3
1985 <u>3/</u> .....	201,122	121,602	79,520	174.9	39.5
1986 .....	210,249	134,084	76,165	178.5	36.2
Beef and veal: <u>4/</u>					
1976 .....	92,573	60,253	32,320	95.4	34.9
1985 <u>3/</u> .....	105,084	71,156	33,928	91.4	32.3
1986 .....	107,197	73,433	33,764	91.0	31.5
Pork: <u>4/</u>					
1976 .....	31,072	23,291	7,781	32.0	25.0
1985 <u>3/</u> .....	37,927	30,068	7,859	33.0	20.7
1986 .....	38,362	29,719	8,643	32.6	22.5
Chickens:					
1976 .....	27,137	21,016	6,121	28.0	22.6
1985 .....	39,011	31,305	7,706	33.9	19.8
1986 .....	39,982	32,353	7,629	33.9	19.1
Eggs:					
1976 .....	19,596	1,396	18,200	20.2	92.9
1985 .....	22,217	3,842	18,375	19.3	82.7
1986 .....	21,983	3,066	18,917	18.7	86.0

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 DBED Statistical Report 201.

3/ Revised from Data Book 1986, table 567.

4/ Carcass weight equivalent.

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

Table 595.-- 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 .....	-	-	-	-	-	-	-
CUMULATIVE							
90 or more ....	66	-	17	3	7	39	-
80 or more ....	203	17	56	14	23	72	20
70 or more ....	392	112	76	15	29	99	61
60 or more ....	604	237	112	16	38	121	80
50 or more ....	825	350	176	19	48	133	99
40 or more ....	1,134	577	216	25	58	151	106
30 or more ....	1,738	1,121	245	26	61	162	122
20 or more ....	2,230	1,402	300	75	112	192	149

Z Less than 500 acres.

Source: Land Evaluation and Site Assessment Commission, A Progress Report of the State of Hawaii Land Evaluation and Site Assessment System to the Thirteenth Legislature, State of Hawaii (March 1985), p. 29, and A Report on the State of Hawaii Land Evaluation and Site Assessment System (February 1986), Exhibit A.

Table 596. -- 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 597.-- FERTILIZER CONSUMPTION BY TYPE: 1982 TO 1985

[In tons. For years ended June 30. This survey was discontinued after 1985]

Year	Total	Mixtures <u>1/</u>	Direct application materials	
			Primary nutrient <u>2/</u>	Secondary and micro-nutrient
1982 .....	156,439	100,797	54,627	1,015
1983 .....	138,343	97,360	40,114	869
1984 .....	128,348	83,544	44,108	696
1985 .....	151,955	94,659	56,309	987

1/ Fertilizers having various combinations of primary nutrients.

2/ The primary nutrients are nitrogen, phosphate, and potash.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1986, p. 95.

Table 598.-- SALES OF AQUACULTURAL PRODUCTS, BY ISLANDS: 1982 AND 1986

Subject	State total		Oahu		Other islands	
	1982	1986	1982	1986	1982	1986
Number of farms .....	13	20	9	23	4	21
Water surface area (acres) ...	189	444	155	330	34	114
Sales (\$1,000) .....	884	3,549	755	2,798	129	752

Source: U.S. Bureau of the Census, 1982 Census of Agriculture, Geographic Area Series, Hawaii, AC82-A-11 (September 1984), Chapter 2, table 21; Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, October 26, 1987.

Table 599.-- NUMBER OF AQUACULTURE INDUSTRY OPERATIONS,  
BY COUNTIES: 1981 TO 1986

[As of December 31]

County	1981	1982	1983	1984	1985	1986
<b>ALL AQUACULTURE IN- DUSTRY OPERATIONS</b>						
State total .....	41	44	42	47	48	44
Hawaii .....	6	8	8	14	12	12
Maui .....	6	5	5	5	6	4
Honolulu .....	24	25	24	23	24	23
Kauai .....	5	6	5	5	6	5
<b>PRAWN PRODUCERS</b>						
State total .....	21	22	21	17	20	20
Hawaii .....	4	4	3	3	5	3
Maui .....	1	1	1	1	-	1
Honolulu .....	13	13	13	10	11	13
Kauai .....	3	4	4	3	4	3

Source: Hawaii State Department of Land and Natural Resources,  
Aquaculture Development Program, October 26, 1987.



Table 600.-- AQUACULTURE ACREAGE, PRODUCTION, AND VALUE, BY  
TYPE AND COUNTIES: 1983 TO 1986

Subject and year	State total	Type		County			
		Fresh-water prawns	Other species <u>1/</u>	Hawaii	Maui	Hono-lulu	Kauai
Acreage: <u>2/</u>							
1983 .....	496	239	257	34	40	378	44
1984 .....	474	246	228	45	26	369	34
1985 .....	465	219	246	54	43	333	35
1986 .....	444	125	319	43	36	330	35
Production: <u>3/</u>							
1983 .....	344.9	268.5	76.4	22.9	15.7	274.8	31.5
1984 .....	441.2	317.8	123.4	36.9	26.5	332.2	45.6
1985 .....	582.9	283.3	299.6	33.4	29.5	485.4	34.6
1986 .....	1,014.7	162.7	852.0	50.5	32.8	892.6	38.8
Value: <u>4/</u>							
1983 .....	1,604.8	1,347.3	257.5	90.8	46.6	1,302.9	164.5
1984 .....	2,299.7	1,706.6	593.1	126.5	97.4	1,831.0	244.8
1985 .....	2,780.5	1,550.6	1,229.9	196.5	134.9	2,255.2	193.9
1986 .....	3,549.4	812.3	2,737.1	398.2	143.2	2,797.6	210.4

1/ Juvenile freshwater prawns, marine shrimp, oysters, brine shrimp, carp and Chinese catfish, catfish, koi, tilapia, tropical fish and aquarium plants, trout, abalone, ogo and microalgae.

2/ As of December 31.

3/ In thousands of pounds. Excludes items not sold by weight: post-larvae, brine shrimp, koi, tropical fish, and aquarium plants.

4/ In thousands of dollars.

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, October 26, 1987.