

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 4,650 farms in Hawaii in 1989, with a total area of 1.72 million acres. The value of crop sales in 1989 was \$485 million, or 34 percent higher than the total for 1979. Livestock sales amounted to \$92 million, or 17 percent more than the 1979 level. Combined crop and livestock sales in 1989 ranged from \$65 million in Kauai County to \$203 million on the Big Island. Major crops were sugar (\$211 million in sales, down 3 percent over the decade), pineapple (\$95 million, or 38 percent over the 1979 total), flowers and nursery products (\$62 million, or 200 percent more than in 1979), and macadamia nuts (\$45 million, up 168 percent). Diversified crops, defined as all crops other than sugar and pineapple, rose from \$76 million in 1979 to \$180 million in 1989, or approximately 137 percent. About 710 farms sold \$62 million of flowers and nursery products in 1989, chiefly anthuriums, potted foliage, and orchids. Important products of livestock farms as of 1989 included cattle and calves (\$31 million in sales), milk (\$32 million), and eggs (\$15 million). In 1989, Hawaii produced 30 percent of the fresh market vegetables consumed locally, 45 percent of the fresh market fruits, 30 percent of the beef and veal, 18 percent of the pork, 17 percent of the chickens, and 92 percent of the eggs.

Aquaculture has been growing in importance in recent years, with an aggregate value rising from \$11,000 in 1970 to \$6.8 million in 1989. Shellfish production amounted to 706,000 pounds in 1989, with a value of \$3.8 million.

Statistics on Hawaiian agriculture exclude marijuana and other illicit plants. Authorities confiscated \$1.6 billion worth of marijuana in 1989, but the proportion escaping detection is unknown.

Important sources for data on agriculture include the United States Census of Agriculture, most recently conducted in 1987, 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: 1990.

Table 566.-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1987 AND 1982

Item	All farms		Farms with sales of \$10,000 or more	
	1987	1982	1987	1982
Farms number ..	4,870	4,595	2,049	1,775
Land in farms acres ..	1,721,521	1,957,501	1,634,955	1,858,568
Average size of farm acres ..	353	426	798	1,047
Value of land and buildings:				
Average per farm ... dollars ..	603,435	778,471	1,096,618	1,693,553
Average per acre ... dollars ..	1,707	1,826	1,374	1,617
Estimated market value of all machinery and equipment:				
Average per farm ... dollars ..	41,208	41,735	85,275	94,031
Farms by size:				
1 to 9 acres ..	2,855	2,743	976	820
10 to 49 acres ..	1,401	1,261	734	629
50 to 179 acres ..	341	320	151	145
180 to 499 acres ..	128	126	62	64
500 to 999 acres ..	31	33	21	21
1,000 acres or more ..	114	112	105	96
Total cropland farms ..	4,170	3,836	1,814	1,536
..... acres ..	327,396	346,113	299,180	324,830
Harvested cropland farms ..	3,837	3,538	1,758	1,485
..... acres ..	152,719	155,960	145,422	149,843
Irrigated land farms ..	1,827	1,544	975	777
..... acres ..	148,884	145,982	146,907	143,986
Market value of agricultural products sold \$1,000 ..	609,740	558,608	600,637	549,601
Average per farm ... dollars ..	125,203	121,569	293,137	309,635
Crops, including nursery and greenhouse crops \$1,000 ..	498,317	456,069	491,320	449,457
Livestock, poultry, and their products \$1,000 ..	111,424	102,539	109,317	100,144

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Table 566.-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1987 AND 1982 -- Con.

Item	All farms		Farms with sales of \$10,000 or more	
	1987	1982	1987	1982
Farms by value of sales:				
Less than \$2,500	1,402	1,454	-	-
\$2,500 to \$4,999	674	706	-	-
\$5,000 to \$9,999	745	653	-	-
\$10,000 to \$24,999	911	788	911	788
\$25,000 to \$49,999	476	397	476	397
\$50,000 to \$99,999	287	237	287	237
\$100,000 or more	375	353	375	353
Operators by principal occupation:				
Farming	2,816	2,565	1,557	1,352
Other	2,054	2,030	492	423
Operators by days worked off farm:				
Any	2,728	2,534	909	722
200 days or more	1,476	1,371	470	375
Average age of operator .. years ..	53.0	52.7	51.1	51.5
Total farm production				
expenses \$1,000 ..	495,759	(NA)	482,975	(NA)
Average per farm ... dollars ..	101,840	(NA)	235,828	(NA)
Selected farm production expenses:				
Livestock and poultry				
purchased \$1,000 ..	15,230	17,581	14,646	17,032
Feed for livestock and				
poultry \$1,000 ..	42,629	41,548	42,095	40,889
Interest expense \$1,000 ..	22,930	17,771	21,407	16,665
Petroleum products \$1,000 ..	17,197	19,864	16,065	18,759
Livestock and poultry:				
Cattle and calves				
inventory farms ..	1,003	1,040	259	268
number ..	211,045	241,969	193,062	219,651
Beef cows				
farms ..	724	784	198	208
number ..	83,427	90,523	76,126	81,629
Milk cows				
farms ..	73	88	27	38
number ..	11,836	12,767	11,736	12,662
Cattle and calves sold				
farms ..	807	817	225	241
number ..	101,315	91,675	96,239	86,603

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Table 566.-- FARMS, LAND IN FARMS, AND SELECTED ITEMS:
1987 AND 1982 -- Con.

Item	All farms		Farms with sales of \$10,000 or more	
	1987	1982	1987	1982
Livestock and poultry, con.:				
Hogs and pigs inventory farms ..	372	371	136	132
number ..	47,564	49,029	42,784	42,683
Hogs and pigs sold farms ..	307	319	127	126
number ..	69,019	66,875	64,618	61,919
Sheep and lambs				
inventory farms ..	42	34	11	8
number ..	(D)	(D)	(D)	(D)
Chicken 3 months old or				
older inventory farms ..	181	201	56	58
number ..	(D)	929,210	(D)	921,810
Broilers and other meat-				
type chickens sold ... farms ..	12	23	8	15
number ..	2,069,316	3,173,500	2,069,219	3,172,382
Selected crops harvested:				
Sugarcane for sugar farms ..	79	188	62	157
acres ..	79,234	89,696	79,140	(D)
tons ..	7,934,181	8,950,242	7,929,989	8,941,044
Pineapples harvested ... farms ..	18	15	12	14
acres ..	22,262	23,141	22,254	(D)
tons ..	683,182	626,860	683,086	(D)
Vegetables harvested				
for sale farms ..	710	746	428	366
acres ..	5,587	4,673	5,165	4,133
Land in orchards farms ..	2,128	1,825	796	612
acres ..	33,564	23,178	27,525	18,656
Macadamia nuts farms ..	1,036	879	377	307
acres ..	23,233	15,472	20,284	13,960
pounds ..	44,464,884	35,594,548	42,380,242	34,258,992
Nursery and greenhouse				
crops farms ..	1,139	1,050	573	467
sales, \$1,000 ..	56,527	35,973	(D)	34,062

(D) Withheld to avoid disclosing data for individual farms.

Source: U.S. Bureau of the Census, 1987 Census of Agriculture, Advance State Report, Hawaii, AC87-A-15-000(A) (May 1989), and Geographic Area Series, Hawaii, State and County Data, AC87-A-11 (August 1989).

Table 567.-- FARMS AND LAND IN FARMS, FOR COUNTIES: 1987

Item	Hawaii	Honolulu	Kauai	Maui
Farms number ..	2,810	938	400	722
Land in farms acres ..	1,007,287	130,771	224,153	359,310
Average size of farm acres ..	358	139	560	498
Value of land and buildings:				
Average per farm .. dollars ..	573,527	440,397	709,213	873,008
Average per acre .. dollars ..	1,600	3,159	1,266	1,754
Estimated market value of all machinery and equipment:				
Average per farm .. dollars ..	27,187	39,523	70,317	81,608
Farms by size:				
1 to 9 acres ..	1,602	707	181	365
10 to 49 acres ..	883	156	139	223
50 to 179 acres ..	180	31	51	79
180 to 499 acres ..	71	21	11	25
500 to 999 acres ..	14	7	5	5
1,000 acres or more ..	60	16	13	25
Total cropland farms ..	2,561	742	294	573
..... acres ..	137,924	49,887	50,146	89,439
Harvested cropland farms ..	2,390	716	235	496
..... acres ..	63,098	24,779	21,890	42,952
Irrigated land farms ..	644	583	190	410
..... acres ..	12,899	36,301	32,486	67,198
Market value of agricultural products sold \$1,000 ..	219,756	168,824	67,847	153,313
Average per farm .. dollars ..	78,205	179,983	169,619	212,345
Crops, including nursery and greenhouse crops ... \$1,000 ..	195,140	100,356	62,099	140,722
Livestock, poultry, and their products \$1,000 ..	24,616	68,468	5,748	12,591

Source: U.S. Bureau of the Census, 1987 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC87-A-11 (August 1989), pp. 130-132.

Table 568.-- EMPLOYMENT IN AGRICULTURE: 1900 TO 1989

[Data for 1940 and later years include forestry and fisheries]

Year	Number	Percent of total	Year	Number	Percent of total
1900	55,931	62.0	1950	31,806	19.0
1910	54,742	54.1	1960	15,981	7.6
1920	54,803	49.0	1970	13,161	4.6
1930	61,811	40.1	1980	14,560	3.5
1940	54,629	35.5	1989	13,100	2.6

Source: Robert C. Schmitt, Historical Statistics of Hawaii (1977), pp. 122-124; present volume, tables 345, 349, and 354.

Table 569.-- GENERAL EXCISE TAX BASE FOR PRODUCING:
1979 TO 1989

[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; see HRS, 1985 Replacement, Section 237-5]

Year <u>1/</u>	Amount	Year <u>1/</u>	Amount	Year <u>1/</u>	Amount
1979	156,873	1983	220,298	1987	274,202
1980	143,694	1984	242,641	1988 <u>2/</u> ...	298,261
1981	176,582	1985	262,791	1989 <u>2/</u> ...	326,400
1982	173,891	1986	250,954		

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/ Data exclude tax base for unallocated collections, distributed for earlier years.

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

Table 570.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT:
1970 TO 1989

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	1,900	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

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) and records.

Table 571.-- VALUE OF CROP AND LIVESTOCK SALES: 1970 TO 1989

[\$1,000]

Year	All crops and livestock	Crops				Live-stock
		All crops	Sugar (unprocessed cane)	Pine-apples (fresh equiv.)	Other crops	
1970 1/ ...	213,950	172,302	110,600	39,500	22,202	41,648
1971 I/ ...	221,829	178,776	115,800	40,300	22,676	43,053
1972	232,760	186,518	117,300	43,900	25,318	46,242
1973	266,161	210,892	141,900	39,600	29,392	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	568,413	481,925	266,900	100,376	114,649	86,488
1984	550,517	463,502	256,200	89,928	117,374	87,015
1985	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 1/ ...	573,962	485,293	209,900	107,402	167,991	88,669
1989	577,099	485,330	210,300	95,448	179,582	91,769

1/ Revised from Data Book 1989, table 554.

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

Table 572.-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, BY COUNTIES OR ISLANDS: 1979, 1988, AND 1989

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:					
1979	4,300	1,980	3,020	1,520	10,800
1988	4,650	1,720	2,600	1,100	10,300
1989	4,650	1,720	2,400	1,100	9,800
Hawaii County:					
1979	2,500	1,150	1,850	1,000	3,250
1988	2,700	1,010	1,750	725	3,700
1989	2,700	1,010	1,575	725	3,610
Maui County:					
1979	500	425	360	190	3,125
1988	600	360	250	125	2,650
1989	600	360	225	110	2,560
Oahu:					
1979	1,000	125	625	260	2,790
1988	950	125	475	175	2,700
1989	950	125	450	200	2,425
Kauai County:					
1979	300	280	175	75	1,610
1988	400	225	140	60	1,200
1989	400	225	175	60	1,175

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 573.-- VALUE OF CROP AND LIVESTOCK SALES, BY COUNTIES
OR ISLANDS: 1979, 1988, AND 1989

[\$1,000]

County and year	All crops and livestock	Crops				Live-stock
		All crops	Sugar (unprocessed cane)	Pine-apples (fresh equiv.)	Other crops	
State total:						
1979	441,253	362,789	217,600	69,409	75,780	78,464
1988 <u>1/</u> ...	573,962	485,293	209,900	107,402	167,991	88,669
1989	577,099	485,330	210,300	95,448	179,582	91,769
Hawaii County:						
1979	145,146	123,856	79,500	-	44,356	21,290
1988 <u>1/</u>	194,679	165,619	60,000	-	105,619	29,060
1989	203,408	170,713	56,900	-	113,813	32,695
Maui County:						
1979	107,463	95,917	52,200	32,936	10,781	11,546
1988 <u>1/</u>	137,941	128,778	66,200	39,141	23,437	9,163
1989	132,545	124,287	66,400	32,863	25,024	8,258
Oahu:						
1979	132,458	91,206	38,200	36,473	16,533	41,252
1988 <u>1/</u>	176,508	130,823	31,900	68,261	30,662	45,685
1989	176,330	130,274	35,500	62,585	32,189	46,056
Kauai County:						
1979	56,186	51,810	47,700	-	4,110	4,376
1988 <u>1/</u>	64,834	60,073	51,800	(<u>2/</u>)	8,273	4,761
1989	64,816	60,056	51,500	(<u>2/</u>)	8,556	4,760

1/ Revised from Data Book 1989, table 556.

2/ Less than \$50,000.

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

Table 574.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES: 1979, 1988, AND 1989

Subject	1979	1988 ^{1/}	1989
Acreage in crop (1,000 acres):			
Sugarcane	218.8	176.5	170.8
Pineapples (land used for pineapple)	44.0	34.6	32.7
Vegetables and melons (harvested acreage) ..	4.3	5.2	5.0
Fruits, excluding pineapples	5.3	7.6	7.4
Coffee	2.1	2.6	2.3
Macadamia nuts	11.4	21.9	22.3
Miscellaneous crops	4.9	7.4	4.9
Number of crop farms:			
Sugar	400	75	70
Pineapples	15	12	10
Vegetables and melons	535	575	525
Fruits (excluding pineapples)	683	775	709
Coffee	700	635	635
Macadamia nuts	466	660	660
Taro	121	155	150
Flowers and nursery products	580	675	710
Volume of crop marketings:			
Sugar, unprocessed cane (1,000 tons)	9,632	7,606	7,082
Pineapples, fresh equivalent (1,000 tons) ..	681	659	580
Vegetables and melons (1,000 lb.)	70,240	92,730	81,700
Fruits, excluding pineapples (1,000 lb.) ...	56,600	104,570	109,980
Coffee, parchment (1,000 lb.)	2,190	2,000	2,200
Macadamia nuts, in shell (1,000 lb.)	26,660	45,500	50,500
Taro (1,000 lb.)	6,640	6,800	6,500
Value of crop sales (\$1,000):			
Sugar (unprocessed cane)	217,600	209,900	210,900
Pineapples (fresh equivalent)	69,409	107,402	95,448
Vegetables and melons	18,388	30,917	31,671
Fruits (excluding pineapples)	11,956	20,576	23,074
Coffee (parchment)	3,132	6,600	8,910
Macadamia nuts (in shell)	16,769	40,950	44,945
Taro	1,089	1,904	1,996
Field crops (not estimated separately)	3,557	7,423	6,441
Flowers and nursery products	20,778	59,551	62,295

NA Not available.

^{1/} Revised from Data Book 1989, table 557.

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

Table 575.-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES, BY GEOGRAPHIC AREAS: 1989

Subject	Hawaii County	Maui County	Oahu	Kauai County
Acreage in crop (1,000 acres):				
Sugarcane	63.1	42.5	24.3	40.9
Pineapples (land used for pineapple)	-	19.7	13.0	(1/)
Vegetables and melons (harvested acreage)	1.7	2.4	0.8	0.1
Fruits, excluding pineapples	5.8	0.1	0.8	0.7
Coffee	2.3	-	-	-
Macadamia nuts	(D)	(D)	(D)	(D)
Miscellaneous crops	2.5	1.0	0.7	0.7
Number of crop farms:				
Sugar	60	2	3	5
Pineapples	-	5	2	3
Vegetables and melons	280	83	137	25
Fruits (excluding pineapples)	497	35	122	55
Coffee	635	-	-	-
Macadamia nuts	640	9	3	8
Taro	87	16	2	45
Flowers and nursery products	320	110	230	50
Volume of crop marketings:				
Sugar, unprocessed cane (1,000 tons)	2,130	1,925	1,208	1,819
Pineapples, fresh equivalent (1,000 tons)	-	345	235	(2/)
Vegetables and melons (1,000 lb.)	30,470	41,495	9,230	505
Fruits, excluding pineapples (1,000 lb.)	89,190	1,020	6,750	13,020
Coffee, parchment (1,000 lb.)	2,200	-	-	-
Macadamia nuts, in shell (1,000 lb.)	(D)	(D)	(D)	(D)
Taro (1,000 lb.)	1,620	(D)	(D)	4,160
Value of crop sales (\$1,000):				
Sugar (unprocessed cane)	56,900	66,400	35,500	51,500
Pineapples (fresh equivalent)	-	32,863	62,585	(3/)
Vegetables and melons	13,671	11,615	6,169	216
Fruits (excluding pineapples)	18,377	326	2,149	2,222
Coffee (parchment)	8,910	-	-	-
Macadamia nuts (in shell)	(D)	(D)	(D)	(D)
Taro	591	(D)	(D)	1,211
Field crops (not estimated separately) ...	275	2,989	695	2,482
Flowers and nursery products	29,038	7,756	23,123	2,378

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 1989.

Table 576.-- VEGETABLES, MELONS, FRUITS, NUTS, COFFEE, AND TARO: 1989

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

Crop	Acreage harvested ^{1/}	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	180	5.6	1,000	83.7	837
Chinese cabbage	430	17.9	7,700	21.4	1,648
Head cabbage	650	24.2	15,750	17.9	2,819
Celery	80	25.0	2,000	26.5	530
Cucumbers	220	15.9	3,500	39.4	1,379
Daikon	240	14.6	3,500	22.6	791
Eggplant	50	23.2	1,160	70.8	821
Ginger root	165	49.4	8,150	71.5	5,827
Lettuce (head, semi-head)	260	12.5	3,300	39.0	1,287
Dry onions	150	8.3	1,250	96.5	1,206
Green peppers	155	8.8	1,370	55.9	766
Tomatoes	250	22.0	5,500	55.4	3,047
Watermelons	670	20.1	13,500	13.2	1,782
Green onions	190	7.4	1,400	97.8	1,369
Watercress	35	35.7	1,250	107.7	1,346
Romaine	140	11.4	1,600	37.6	602
Sweet potatoes	110	11.4	1,250	41.0	513
Mustard cabbage	120	10.5	1,260	40.4	509
Fruits:					
Bananas	1,000	11.9	11,900	36.5	4,344
Guavas	965	21.3	20,600	15.0	3,090
Papayas	2,500	29.6	74,000	19.4	14,380
Macadamia nuts (1989-1990)	18,200	2.8	54,000	89.0	44,945
Coffee (1989-1990)	2,300	1.0	2,200	4.1	8,910
Taro	430	15.1	6,500	30.7	1,996

^{1/} Acreage bearing for macadamia nuts; acreage in crop for watercress and taro.

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1989.

Table 577.-- SUGARCANE ACREAGE, BY TYPE OF IRRIGATION:
1972 TO 1989

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
1988	177,693	88,387	17,791	71,515
1989	170,816	86,030	16,687	68,099

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

Table 578.-- FRESH FRUIT AND VEGETABLE ARRIVALS IN HONOLULU,
BY SOURCE: 1987 TO 1989

[1,000 pounds, net]

Source	1987	1988	1989
Total arrivals	295,701	305,515	303,526
From Hawaii	102,078	101,541	91,881
Oahu <u>1/</u>	40,160	36,736	33,314
Other islands <u>2/</u>	61,918	64,805	58,567
Hawaii <u>2/</u>	29,510	31,257	30,203
Maui <u>2/</u>	16,229	16,007	15,388
Molokai <u>2/</u>	14,279	16,548	12,667
Kauai <u>2/</u>	1,900	993	309
From U.S. Mainland <u>2/</u>	183,952	195,537	205,915
From foreign countries <u>2/</u>	9,671	8,437	5,730

1/ Wholesalers' truck receipts.

2/ Ship and plane arrivals.

Source: Hawaii State Department of Agriculture, Market News Service, Honolulu Arrivals, Fresh Fruits and Vegetables, 1988 (June 1989), table 1, as corrected; and records.

Table 579.-- MACADAMIA NUT COMMERCIAL PLANTINGS: 1915 TO 1988

Years	Acres planted	Years	Acres planted	Years	Acres planted
1915-19 ...	1	1945-49 ...	426	1975-79 ...	1,437
1920-24 ...	-	1950-54 ...	1,086	1980-84 ...	5,511
1925-29 ...	129	1955-59 ...	554	1985-88 ...	4,400
1930-34 ...	20	1960-64 ...	1,331	Unknown ...	660
1935-39 ...	89	1965-69 ...	4,493		
1940-44 ...	21	1970-74 ...	1,742	1915-88 ...	21,900

Source: Hawaii Agricultural Statistics Service, Statistics of Hawaiian Agriculture 1988, p. 34.

Table 580.-- LIVESTOCK INVENTORY, 1979, 1988, AND 1989, AND BY
GEOGRAPHIC AREAS, 1989

[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
1979	213	13	53	1,306	7
1988	212	12	43	1,217	9
1989	205	11	39	1,216	9
GEOGRAPHIC AREAS: 1989					
Hawaii County	131.5	2.4	3.4	(D)	(NA)
Maui	29.7	0.9	7.1	(D)	(NA)
Molokai and Lanai	5.0	-	0.7	(D)	(NA)
Oahu	26.7	8.1	23.4	987	(NA)
Kauai County	12.1	0.4	3.6	(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.

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

Table 581.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,
AND VALUE OF LIVESTOCK SALES: 1979, 1988, AND 1989

Subject	1979	1988 <u>1/</u>	1989
Number of livestock operations, Dec. 31:			
Cattle <u>2/</u>	800	900	900
Hogs	650	600	550
Milk	70	90	80
Eggs	60	55	55
Broilers	10	8	8
Honey	25	12	11
Volume of livestock marketings:			
Beef (dressed weight; 1,000 lb.) <u>3/</u>	29,325	31,403	34,450
Pork (dressed weight; 1,000 lb.)	7,785	8,217	7,716
Milk (million lb.)	147.3	157.1	151.5
Eggs (million)	229	224.4	226.5
Broilers and chickens (1,000 lb.) <u>4/</u>	7,136	7,994	7,967
Honey (1,000 lb.)	910	1,611	1,215
Value of livestock sales (\$1,000):			
Cattle <u>5/</u>	28,356	27,984	31,483
Hogs <u>5/</u>	7,027	8,381	7,911
Milk	24,894	32,190	31,588
Eggs	14,007	13,801	14,949
Broilers and chickens	3,655	5,110	4,793
Other <u>6/</u>	525	1,203	1,045

1/ Revised from Data Book 1989, table 564.

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

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 582.-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS,
AND VALUE OF LIVESTOCK SALES, BY GEOGRAPHIC AREAS: 1989

Subject	Hawaii County	Maui County	Oahu	Kauai County
Number of livestock operations, Dec. 31:				
Cattle <u>1/</u>	440	210	80	170
Hogs	90	90	270	100
Milk	41	7	20	12
Eggs	25	7	19	4
Broilers	-	-	7	1
Honey	4	4	1	2
Volume of livestock marketings:				
Beef <u>2/</u> (dressed weight; 1,000 lb.)	28,882	3,058	1,184	1,326
Pork (dressed weight; 1,000 lb.)	559	1,871	4,344	942
Milk (million lb.)	(D)	(D)	116.3	(D)
Eggs (million)	(D)	(D)	183.8	(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>	26,711	2,594	981	1,197
Hogs <u>4/</u>	603	2,021	4,257	1,030
Milk	(D)	(D)	24,481	(D)
Eggs	(D)	(D)	11,871	(D)
Broilers and chickens	(D)	(D)	(D)	(D)
Other <u>5/</u>	628	170	53	194

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 1989.

Table 583.-- FLORICULTURE AND NURSERY PRODUCTS, 1987 TO 1989,
AND BY ISLANDS, 1989

Island and year	Number of farms	Growing area					Wholesale value (\$1,000)
		Total (acres)	Greenhouse (1,000 sq. ft.)	Artificial shade structure (1,000 sq. ft.)	Natural shade area (acres)	Open field (acres)	
State total:							
1987	670	1,840	3,314	27,394	55	1,080	54,731
1988	675	1,833	4,690	23,800	70	1,109	59,551
1989	710	2,214	6,325	23,035	50	1,490	62,295
Islands, 1989:							
Hawaii	320	1,139	2,772	17,720	49	620	29,038
Kauai	50	90	370	280	-	75	2,378
Maui/Molokai .	110	492	195	1,150	1	460	7,756
Oahu	230	493	2,988	3,885	-	335	23,123

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (June 28, 1990), pp. 2 and 11.

Table 584.-- OUT-OF-STATE SALES OF FLORICULTURE AND
NURSERY PRODUCTS: 1985 TO 1989

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

Type	1985	1986	1987	1988	1989
Total sales ...	24,284	28,136	31,904	33,042	37,475
Anthuriums, cut	7,581	8,653	9,170	8,816	9,280
Foliage, potted	9,550	9,782	8,935	8,609	8,130
Other flowers, nursery products .	7,153	9,701	13,799	15,617	20,065

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers and Nursery Products, Annual Summary (July 28, 1990), p. 13.

Table 585.-- FLORICULTURE AND NURSERY PRODUCTS, BY COMMODITY: 1989

[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	155	1,000 dozens	1,385	7,811
Heliconias	120	1,000 dozens	185	1,130
Proteas	36	1,000 stems	1,690	1,184
Roses, Tea	15	1,000 dozens	635	2,444
Orchids:				
Sprays: Dendrobium	83	1,000 dozens	435	2,798
Potted: Dendrobiums	80	1,000 pots	455	2,160
Lei flowers:				
Carnations	22	Million blooms	24.6	1,134
Tuberose	8	Million blooms	36.6	1,029
Vanda, Miss Joaquim	23	Million blooms	34.7	836
Ornamentals and trees	58	...	(NA)	3,370
Plant rentals	46	...	(NA)	2,820
Foliage:				
Potted, primarily for--				
Indoor or patio use	79	...	(NA)	14,575
Landscape use	51	...	(NA)	1,709
Unfinished stock (for further growing on)	21	...	(NA)	1,102
Potted flowering plants:				
Chrysanthemums	8	1,000 pots	228	884
Poinsettias	38		265	1,045

NA Not available.

Source: Hawaii Agricultural Statistics Service, Hawaii Flowers & Nursery Products, Annual Summary (June 28, 1990).

Table 586.-- MARKET SUPPLY OF SPECIFIED FOODS: 1979, 1988, AND 1989

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:					
1979	76,004	58,295	17,709	73.1	23.3
1988 <u>3/</u>	172,227	90,777	81,450	141.6	47.3
1989	168,116	92,896	75,220	131.1	44.7
Fresh market vegetables:					
1979	113,258	105,155	69,080	167.6	39.6
1988	221,586	149,251	72,335	181.8	32.6
1989	225,603	159,003	66,600	178.6	29.5
Beef and veal: <u>4/</u>					
1979	90,525	61,200	29,325	87.1	32.4
1988	110,589	79,186	31,403	90.7	28.4
1989	113,653	79,203	34,450	90.0	30.3
Pork: <u>4/</u>					
1979	32,642	24,857	7,785	31.4	23.8
1988	40,713	32,496	8,217	33.4	20.2
1989	42,491	34,775	7,716	33.6	18.2
Chickens:					
1979	31,054	23,918	7,136	29.9	23.0
1988	43,739	35,745	7,994	35.9	18.2
1989	46,743	38,776	7,967	37.0	17.0
Eggs:					
1979	21,056	1,956	19,100	20.3	90.7
1988	20,791	2,091	18,700	17.1	89.9
1989	20,601	1,726	18,875	16.3	91.6

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 1989, table 569.

4/ Carcass weight equivalent.

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

Table 587.-- 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, A Report on the State of Hawaii Land Evaluation and Site Assessment System (February 1986), Exhibit A.

Table 588.-- AGRICULTURAL CHEMICALS USED, INCLUDING FERTILIZER AND LIME:
1978 TO 1987

Chemicals used	1978	1982	1987
Any chemicals, fertilizer, or lime used farms	3,568	3,532	4,105
Commercial fertilizer farms	3,172	3,158	3,524
acres on which used	284,452	228,982	225,457
\$1,000	26,530	33,477	30,717
Lime farms	525	525	825
acres on which used	12,488	9,547	21,544
tons	12,011	10,423	23,220
Agricultural chemicals <u>1/</u> farms	3,277	3,084	3,881
\$1,000	13,700	16,417	18,233
Sprays, dusts, granules, fumigants, etc., to control --			
Insects on hay and other crops farms	1,204	1,702	2,008
acres on which used	28,787	45,671	68,150
Nematodes in crops farms	441	654	663
acres on which used	9,806	9,638	15,792
Diseases in crops and orchards farms	912	1,067	1,151
acres on which used	12,310	18,085	(D)
Weeds, grass, or brush in crops and pasture farms	2,325	2,385	2,887
acres on which used	269,801	213,551	235,871
Chemicals used for defoliation or for growth control of crops or thinning of fruit farms	160	165	212
acres on which used	57,280	50,455	57,481

D Withheld to avoid disclosing data for individual farms.

1/ Data after 1978 exclude the cost of lime.

Source: U.S. Bureau of the Census, 1987 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data, AC87-A-11 (August 1989), table 15, p. 19.

Table 589.-- AQUACULTURE INDUSTRY OPERATIONS: 1970 TO 1989

Year	Number of operations, Dec. 31		Acreage, Dec. 31	Production (1,000 lb.)	Value (\$1,000)
	Total	Prawn producers			
1970	2	1	193	20	11
1971	2	1	193	17	17
1972	2	1	193	18	23
1973	3	2	203	34	34
1974	4	3	213	41	136
1975	10	3	234	82	178
1976	14	6	235	94	210
1977	25	13	246	123	281
1978	25	16	320	178	525
1979	23	19	493	246	1,531
1980	37	24	575	320	1,655
1981	41	21	547	338	1,868
1982	44	22	643	551	2,625
1983	42	21	496	345	1,605
1984	47	17	474	441	2,300
1985	48	20	465	583	2,780
1986	44	20	444	1,015	3,549
1987	45	14	437	1,689	6,263
1988	44	12	477	1,170	5,560
1989	46	10	479	1,264	6,835

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, records, May 25, 1989 and September 19, 1990.

Table 590.-- AQUACULTURE OPERATIONS, ACREAGE, PRODUCTION, AND VALUE,
BY COUNTIES: 1989

Subject	State total	Hawaii	Maui	Honolulu	Kauai
Number of operations ...	46	19	4	19	4
Prawn producers	10	1	-	9	-
Acreage (Dec. 31)	479	63	13	403	4
Production (1,000 lb.)..	1,263.5	272.8	7.5	983.2	(NA)
Shellfish	706.4	(NA)	7.2	699.2	(NA)
Finfish	175.9	49.9	.3	125.7	(NA)
Algae	381.2	222.9	(NA)	158.3	(NA)
Other <u>1/</u>	(NA)	...	(NA)
Value (\$1,000)	6,834.6	1,967.0	42.9	4,824.7	(NA)
Shellfish	3,781.9	(NA)	42.0	3,739.9	(NA)
Finfish	552.9	161.3	.9	390.7	(NA)
Algae	1,987.1	1,555.2	(NA)	431.9	(NA)
Other <u>1/</u>	512.7	250.5	(NA)	262.2	(NA)

NA Not available.

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

Source: Hawaii State Department of Land and Natural Resources, Aquaculture Development Program, September 19, 1990.