

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 4,500 farms in Hawaii in 1992, with a total area of 1.7 million acres. The value of crop sales in 1992 was \$435 million, or about 1.5 percent more than the total for 1982. Livestock sales amounted to \$88 million, or 12.6 percent more than the 1982 level. Combined crop and livestock sales in 1992 ranged from \$49 million in Kauai County to \$169 million on the Big Island. Major crops were sugar (\$154 million in sales, down 33 percent over the decade), pineapple (\$102 million, or 8 percent over the 1982 total), flowers and nursery products (\$70 million, or 128 percent more than in 1982), and macadamia nuts (\$33 million, up 20 percent). Diversified crops, defined as all crops other than sugar and pineapple, rose from \$104 million in 1982 to \$179 million in 1992, or 73 percent. About 686 farms sold \$70 million of flowers and nursery products in 1992, chiefly anthuriums, potted foliage, and orchids. Important products of livestock farms as of 1992 included cattle and calves (\$29 million in sales), milk (\$32 million), and eggs (\$16 million). In 1992, Hawaii produced 32 percent of the fresh market vegetables consumed locally, 46 percent of the fresh market fruits, 19 percent of the beef and veal, 14 percent of the pork, and 88 percent of the eggs.

Aquaculture aggregate value rose from \$11,000 in 1970 to \$9.2 million in 1990 and declined to \$7 million in 1992. Shellfish production amounted to 445,000 pounds in 1992, with a value of \$2.2 million.

Statistics on Hawaiian agriculture exclude marijuana and other illicit plants. Authorities confiscated or destroyed marijuana with a potential street value of almost \$1 billion in 1993, but the proportion escaping detection is unknown.

Important sources for data on agriculture include the *United States Census of Agriculture*, most recently published for 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: 1993*.

Table 19.1-- 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
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

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**Table 19.1-- 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
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 ...				
number ...	1,003	1,040	259	268
Beef cows..... farms ...	211,045	241,969	193,062	219,651
number ...	724	784	198	208
Milk cows..... farms ...	83,427	90,523	76,126	81,629
number ...	73	88	27	38
Cattle and calves sold..... farms ...	11,836	12,767	11,736	12,662
number ...	807	817	225	241
Hogs and pigs inventory..... farms ...	101,315	91,675	96,239	86,603
number ...	372	371	136	132
Hogs and pigs sold..... farms ...	47,564	49,029	42,784	42,683
number ...	307	319	127	126
Sheep and lambs	69,019	66,875	64,618	61,919
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

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**Table 19.1-- 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
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 19.2-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT: 1970 TO 1992

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
1990	4,600	1,710	2,500	1,000	9,600
1991	4,500	1,710	3,100	1,100	9,600
1992	4,500	1,710	3,100	1,300	9,500

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 19.3-- VALUE OF CROP AND LIVESTOCK SALES: 1970 TO 1992

[\$1,000]

Year	All crops and livestock	Crops				Live-stock
		All crops	Sugar (unprocessed cane)	Pine-apples (fresh equiv.)	Other crops	
1970	213,950	172,302	110,600	39,500	22,202	41,648
1971	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	568,414	481,926	266,900	100,376	114,650	86,488
1984	550,517	463,502	256,200	89,928	117,374	87,015
1985	528,649	445,826	222,400	90,530	132,896	82,823
1986	564,717	481,312	233,800	99,720	147,792	83,405
1987	557,298	469,565	218,000	99,286	152,279	87,733
1988	573,962	485,293	209,900	107,402	167,991	88,669
1989	585,048	493,261	210,300	98,310	184,651	91,787
1990	595,030	506,586	213,800	106,365	186,421	88,444
1991 ^{1/}	552,082	464,839	174,900	107,775	182,164	87,243
1992	523,163	434,869	153,700	102,100	179,069	88,294

^{1/} Revised from *Data Book 1992*, table 563.

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

Table 19.4-- NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, BY COUNTIES OR ISLANDS: 1982, 1991, AND 1992

County or island	Number of farms <u>1/</u>	Farm acreage (1,000) <u>2/</u>	Farm employment <u>3/</u>		
			Self-employed farm operators	Unpaid family members	Hired workers
State total:					
1982	4,500	1,960	2,600	1,300	13,000
1991	4,500	1,710	3,100	1,100	9,600
1992	4,500	1,710	3,100	1,300	9,500
Hawaii County:					
1982	2,600	1,145	1,700	800	3,950
1991	2,600	1,005	1,915	640	3,640
1992	2,600	1,005	1,840	740	3,740
Maui County:					
1982	525	420	400	100	4,200
1991	600	355	350	140	2,540
1992	600	355	390	130	2,300
Oahu:					
1982	1,000	125	700	150	3,050
1991	900	125	625	290	2,300
1992	900	125	630	330	2,350
Kauai County:					
1982	375	275	150	50	1,550
1991	400	225	215	75	1,140
1992	400	225	210	100	1,090

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 19.5-- VALUE OF CROP AND LIVESTOCK SALES, BY COUNTIES OR ISLANDS: 1982, 1991, AND 1992

[\$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:						
1982	507,268	428,860	230,800	94,364	103,696	78,408
1991	552,082	464,839	174,900	107,775	182,164	87,243
1992	523,163	434,869	153,700	102,100	179,069	88,294
Hawaii County:						
1982.....	176,021	152,244	86,900	-	65,344	23,777
1991.....	179,733	149,026	43,600	-	105,426	30,707
1992.....	168,864	140,670	38,200	-	102,470	28,194
Maui County:						
1982.....	118,774	107,416	55,000	38,602	13,814	11,358
1991.....	142,376	132,510	57,900	45,700	28,910	9,866
1992.....	152,768	141,058	55,600	56,659	28,799	11,710
Oahu:						
1982.....	151,995	113,446	37,900	55,762	19,784	38,549
1991.....	171,378	129,602	30,600	62,075	36,927	41,776
1992.....	152,679	109,161	27,300	45,430	36,431	43,518
Kauai County:						
1982.....	60,478	55,754	51,000	(Z)	4,754	4,724
1991.....	58,595	53,701	42,800	(Z)	10,901	4,894
1992.....	48,852	43,980	32,600	(Z)	11,380	4,872

Z Less than \$50,000.

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

Table 19.6-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES: 1982, 1991, 1992

Subject	1982	1991	1992
Acreage in crop (1,000 acres):			
Sugarcane	204.8	155.6	145.7
Pineapples (land used for pineapple)	36.0	28.4	26.2
Vegetables and melons (harvested acreage)	4.1	5.2	5.1
Fruits, excluding pineapples	5.6	6.9	6.8
Coffee	2.0	<u>1/</u> 2.3	<u>1/</u> 2.7
Macadamia nuts	15.0	22.5	20.5
Miscellaneous crops	11.3	5.5	5.2
Number of crop farms:			
Sugar	285	55	55
Pineapples	18	10	<u>3/</u> 21
Vegetables and melons	620	490	535
Fruits (excluding pineapples)	700	800	830
Coffee	620	<u>1/</u> 615	<u>1/</u> 600
Macadamia nuts	550	690	660
Taro	127	180	175
Flowers and nursery products	650	735	686
Volume of crop marketings:			
Sugar, unprocessed cane (1,000 tons)	8,808	5,857	5,430
Pineapples, fresh equivalent (1,000 tons)	670	555	550
Vegetables and melons (1,000 lb.)	72,740	91,740	81,080
Fruits, excluding pineapples (1,000 lb.)	70,820	83,990	98,930
Coffee, parchment (1,000 lb.)	990	<u>1/</u> 2,300	<u>1/</u> 2,000
Macadamia nuts, in shell (1,000 lb.)	36,720	49,500	48,000
Taro (1,000 lb.)	6,460	6,500	6,900
Value of crop sales (\$1,000):			
Sugar (unprocessed cane)	230,800	174,900	153,700
Pineapples (fresh equivalent)	94,364	107,775	102,100
Vegetables and melons	23,024	38,693	36,451
Fruits (excluding pineapples)	14,834	24,330	22,418
Coffee (parchment)	2,129	<u>1/</u> 4,600	<u>1/</u> 4,100
Macadamia nuts (in shell)	27,136	34,650	32,640
Taro	1,447	2,795	3,002
Field crops (not estimated separately)	4,376	<u>2/</u> 8,740	<u>2/</u> 10,412
Flowers and nursery products	30,600	68,078	69,796

1/ Excludes Kauai.

2/ Includes Kauai coffee value.

3/ Includes specialty pineapple.

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

Table 19.7-- ACREAGE IN CROP, NUMBER OF CROP FARMS, VOLUME OF CROP MARKETINGS, AND VALUE OF CROP SALES, BY GEOGRAPHIC AREAS: 1992

Subject	Hawaii County	Maui County	Oahu	Kauai County
Acreage in crop (1,000 acres):				
Sugarcane	47.3	42.2	22.5	33.7
Pineapples (land used for pineapple)	(1/)	14.1	12.1	(1/)
Vegetables and melons (harvested acreage)	1.6	2.6	0.9	(1/)
Fruits, excluding pineapples	5.5	0.1	0.5	0.7
Coffee	(D)	(D)	-	-
Macadamia nuts	(D)	(D)	(D)	(D)
Miscellaneous crops	1.9	1.9	0.6	0.8
Number of crop farms:				
Sugar	45	2	3	5
Pineapples	13	3	2	3
Vegetables and melons	295	110	110	20
Fruits (excluding pineapples)	600	55	125	50
Coffee	(D)	(D)	(D)	-
Macadamia nuts	640	9	3	8
Taro	100	20	5	50
Flowers and nursery products	314	104	224	44
Volume of crop marketings:				
Sugar, unprocessed cane (1,000 tons)	1,674	1,715	932	1,109
Pineapples, fresh equivalent (1,000 tons) ..	(2/)	306	244	(2/)
Vegetables and melons (1,000 lb.)	30,940	38,260	11,570	310
Fruits, excluding pineapples (1,000 lb.)	87,330	740	4,030	6,830
Coffee, parchment (1,000 lb.)	(D)	(D)	(D)	-
Macadamia nuts, in shell (1,000 lb.)	(D)	(D)	(D)	(D)
Taro (1,000 lb.)	1,610	(D)	(D)	4,250
Value of crop sales (\$1,000):				
Sugar (unprocessed cane)	38,200	55,600	27,300	32,600
Pineapples (fresh equivalent)	(3/)	56,659	45,430	(3/)
Vegetables and melons	13,765	13,558	8,952	176
Fruits (excluding pineapples)	18,702	413	1,834	1,469
Coffee (parchment)	(D)	(D)	(D)	-
Macadamia nuts (in shell)	(D)	(D)	(D)	(D)
Taro	689	(D)	(D)	1,870
Flowers and nursery products	34,764	8,245	24,752	2,035

D Withheld to avoid disclosure of individual operations.

1/ Less than 50 acres.

2/ Less than 500 tons.

3/ Less than \$50,000.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture 1992*.

**Table 19.8-- VEGETABLES, MELONS, FRUITS, NUTS, COFFEE, AND TARO:
1992**

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

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:					
Chinese cabbage	420	18.3	7,700	23.8	1,833
Head cabbage	600	22.5	13,500	21.0	2,835
Cucumbers	250	14.0	3,500	49.0	1,715
Lettuce (head, semi-head) .	240	10.0	2,400	45.0	1,080
Dry onions	125	9.4	1,170	111.0	1,299
Green onions	200	7.5	1,500	98.0	1,470
Green peppers	200	14.0	2,800	57.0	1,596
Tomatoes	240	20.0	4,800	62.0	2,976
Watermelons	640	12.5	8,000	16.0	1,280
Watercress	35	...	1,200	110.0	1,320
Fruits:					
Bananas	870	13.8	12,000	41.0	4,920
Guavas	765	...	13,260	14.3	1,896
Papayas	2,415	29.5	77,300	20.2	14,415
Macadamia nuts (1992-1993) .	17,500	2.7	53,000	61.6	32,640
Coffee (1992-1993) ^{2/}	1,600	1.2	2,000	205.0	4,100
Taro	900	...	6,900	43.5	3,002

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

^{2/} Excludes Kauai.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture 1992*.

**Table 19.9-- SUGARCANE ACREAGE, BY TYPE OF IRRIGATION:
1972 TO 1992**

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
1990	161,991	83,252	15,129	63,610
1991	155,608	80,366	13,745	61,497
1992	145,790	76,132	13,008	58,777

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

**Table 19.10-- FRESH FRUIT AND VEGETABLE ARRIVALS IN HONOLULU,
BY SOURCE: 1991 TO 1993**

[1,000 pounds, net]

Source	1991	1992	1993
Total arrivals	291,626	298,959	306,650
From Hawaii	86,410	80,421	83,898
Oahu <u>1/</u>	26,347	24,924	20,190
Other islands <u>2/</u>	60,063	55,497	62,988
Hawaii <u>2/</u>	26,853	26,407	29,643
Maui <u>2/</u>	15,565	14,249	15,409
Molokai <u>2/</u>	17,457	14,603	17,866
Kauai <u>2/</u>	188	238	70
From U.S. Mainland <u>2/</u>	198,149	211,082	213,981
From foreign countries <u>2/</u>	7,067	7,456	8,771

1/ Wholesalers' truck receipts.

2/ Ship and plane arrivals.

Source: Hawaii State Department of Agriculture, Market News Service, *Honolulu Arrivals, Fresh Fruits and Vegetables, 1991* (April 1993), table 1, and records.

**19.11-- GOVERNMENT PAYMENTS FOR AGRICULTURE:
1982 TO 1992**

[1,000]

Year	Amount	Year	Amount	Year	Amount
1982	586	1986.....	2,810	1990	657
1983	6,775	1987.....	344	1991	730
1984	2,675	1988.....	465	1992	734
1985	1,184	1989.....	396		

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

**Table 19.12-- LIVESTOCK INVENTORY, 1982 TO 1992, AND BY
GEOGRAPHIC AREAS, 1992**

[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
1982	230	12	49	1,148	8
1983	226	12	48	1,140	9
1984	221	12	47	1,195	9
1985	209	11	55	1,210	9
1986	199	12	50	1,185	9
1987	203	12	47	1,212	9
1988	212	12	43	1,217	9
1989	205	11	39	1,216	9
1990	214	11	36	1,183	10
1991	200	10	34	1,213	10
1992	178	11	35	1,109	9
GEOGRAPHIC AREAS: 1992					
Hawaii County	117.0	1.7	2.7	(D)	(NA)
Maui.....	26.0	0.9	9.9	(D)	(NA)
Molokai and Lanai	8.5	-	(<u>3/</u>)	(D)	(NA)
Oahu.....	15.5	7.7	20.1	915	(NA)
Kauai County.....	11.0	0.5	2.3	(D)	(NA)

NA Not available.

D Withheld to avoid disclosing data for individual operations.

1/ As of January 1 of the following year.

2/ As of December 1.

3/ Combined with Maui.

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

Table 19.13-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS, AND VALUE OF LIVESTOCK SALES: 1982, 1991, AND 1992

Subject	1982	1991 ^{1/}	1992
Number of livestock operations, Dec. 31:			
Cattle ^{2/}	1,000	900	900
Hogs	650	450	450
Milk	90	80	80
Eggs	55	55	55
Broilers	10	8	(7/)
Honey	8	13	14
Volume of livestock marketings:			
Beef (dressed weight; 1,000 lb.) ^{3/}	28,527	27,328	21,429
Pork (dressed weight; 1,000 lb.)	6,032	6,059	5,994
Milk (million lb.)	106.4	138.8	141.9
Eggs (million)	202.2	224.5	222.4
Broilers and chickens (1,000 lb.) ^{4/}	8,571	5,545	(7/)
Honey (1,000 lb.)	920	1,310	1,242
Value of livestock sales (\$1,000):			
Cattle ^{5/}	27,619	29,787	29,235
Hogs ^{5/}	8,465	6,463	6,521
Milk	21,908	30,328	32,495
Eggs	14,542	15,996	15,846
Broilers and chickens	5,073	3,214	(7/)
Other ^{6/}	634	1,295	4,197

^{1/} Revised from *Data Book 1992*, table 573.

^{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.

^{7/} Not published to avoid disclosure.

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

Table 19.14-- NUMBER OF LIVESTOCK OPERATIONS, VOLUME OF LIVESTOCK MARKETINGS, AND VALUE OF LIVESTOCK SALES, BY GEOGRAPHIC AREAS: 1992

Subject	Hawaii County	Maui County	Oahu	Kauai County
Number of livestock operations, Dec. 31:				
Cattle ^{1/}	460	210	70	160
Hogs	70	80	230	70
Milk	41	7	20	12
Eggs	25	7	19	4
Broilers	(D)	(D)	(D)	(D)
Honey	10	2	0	2
Volume of livestock marketings:				
Beef ^{2/} (dressed weight; 1,000 lb.).....	14,350	5,082	928	1,070
Pork (dressed weight; 1,000 lb.).....	491	1,470	3,260	773
Milk (million lb.).....	(D)	(D)	103.2	(D)
Eggs (million).....	(D)	(D)	180.7	(D)
Broilers and chickens ^{3/} (1,000 lb.).....	(D)	(D)	(D)	(D)
Honey (1,000 lb.).....	(D)	(D)	(D)	(D)
Value of livestock sales (\$1,000):				
Cattle ^{4/}	21,578	5,596	835	1,226
Hogs ^{4/}	534	1,597	3,478	912
Milk	(D)	(D)	23,891	(D)
Eggs	(D)	(D)	12,597	(D)
Broilers and chickens	(D)	(D)	(D)	(D)
Other ^{5/}	6,082	4,517	2,717	2,734

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 1992*.

**Table 19.15-- FLORICULTURE AND NURSERY PRODUCTS, 1990 TO 1992,
AND BY ISLANDS, 1992**

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:							
1990	710	2,364	3,950	24,775	35	1,670	70,393
1991	735	2,555	4,145	27,665	35	1,790	68,078
1992	686	2,495	3,880	22,025	11	1,890	69,796
Islands, 1992:							
Hawaii	314	1,458	2,815	16,665	11	1,000	34,764
Kauai	44	113	25	340	-	105	2,035
Maui/Molokai	104	461	275	650	-	440	8,245
Oahu	224	463	765	4,370	0	345	24,752

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers & Nursery Products, Annual Summary* (Aug. 13, 1993), pp. 10 and 13.

Table 19.16-- OUT-OF-STATE SALES OF FLORICULTURE AND NURSERY PRODUCTS: 1988 TO 1992

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

Type	1988	1989	1990	1991	1992
Total sales	33,042	37,475	37,734	40,920	32,320
Anthuriums, cut	8,816	9,280	11,185	10,595	8,930
Foliage, potted.....	8,609	8,130	8,525	9,595	8,015
Other flowers, nursery products.....	15,617	20,065	18,024	20,730	15,375

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers and Nursery Products, Annual Summary* (Aug. 13, 1993), p. 15.

**Table 19.17-- FLORICULTURE AND NURSERY PRODUCTS,
BY COMMODITY: 1992**

[Shown for commodities with value of sales over \$700,000
and growers with total sales of \$10,000 or more]

Commodity	Number of farms having sales	Number sold		Value of sales (\$1,000)
		Unit	Number	
Selected cut flowers:				
Anthuriums	69	1,000 dozens	828	6,360
Ginger, red	63	1,000 dozens	124	711
Heliconias.....	56	1,000 dozens	146	880
Proteas.....	23	1,000 stems	1,183	710
Roses, Tea.....	12	1,000 dozens	745	3,829
Orchids:				
Sprays: Dendrobium	58	1,000 dozens	423	3,147
Potted: Dendrobiums	55	1,000 pots	635	3,471
Lei or individual flowers:				
Carnations.....	15	Million blooms	16.5	853
Vanda, Miss Joaquim.....	15	Million blooms	27.9	797
Dendrobiums.....	41	Million blooms	42.0	1,119
Foliage:				
Potted, primarily for--				
Indoor or patio use	80	...	(NA)	13,209
Landscape use.....	63	...	(NA)	3,449
Unfinished stock (for further growing on)	25	...	(NA)	886
Potted flowering plants:				
Chrysanthemums.....	(D)	1,000 pots	(D)	(D)
Poinsettias.....	25	1,000 pots	225	848
Ornamentals and trees.....	44	...	(NA)	3,341
Plant rentals	42	...	(NA)	3,985

NA Not available.

D Withheld to avoid disclosure of individual operations.

Source: Hawaii Agricultural Statistics Service, *Hawaii Flowers & Nursery Products, Annual Summary* (Aug. 13, 1993), pp. 3-9.

**Table 19.18-- MARKET SUPPLY OF SPECIFIED FOODS:
1982, 1991, AND 1992**

Commodity and year	Total market supply ^{1/}			Per capita market supply ^{2/}	Percent from Hawaii
	Total	Inship-ment	Hawaii		
Fresh market fruits:					
1982.....	99,628	77,763	21,865	91.9	22.0
1991.....	173,659	90,018	83,641	135.9	48.2
1992.....	191,211	102,863	88,348	147.0	46.2
Fresh market vegetables:					
1982.....	185,568	117,366	68,202	171.1	36.8
1991.....	229,435	153,130	76,305	179.6	33.3
1992.....	229,178	156,938	72,240	176.2	31.5
Beef and veal: ^{3/}					
1982.....	97,030	67,982	29,048	89.5	29.9
1991.....	114,320	86,992	27,328	89.5	23.9
1992.....	115,131	93,702	21,429	88.5	18.6
Pork: ^{3/}					
1982.....	34,976	26,419	8,557	32.2	24.5
1991.....	42,934	36,875	6,059	33.6	14.1
1992.....	43,538	37,544	5,994	33.5	13.8
Chickens:					
1982.....	34,928	26,357	8,571	32.2	24.5
1991.....	49,304	43,759	5,545	38.6	11.3
1992.....	50,849	(4/)	(4/)	-	-
Eggs:					
1982.....	22,250	5,400	16,850	20.5	75.7
1991.....	21,153	2,445	18,708	16.6	88.4
1992.....	21,067	2,534	18,533	16.2	88.0

^{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 table 4.

^{3/} Carcass weight equivalent.

^{4/} Not published to avoid disclosure.

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

Table 19.19-- 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 ^{1/} 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 19.20-- AQUACULTURE INDUSTRY OPERATIONS: 1970 TO 1992

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
1990	53	10	489	1,452	9,241
1991	71	12	595	1,207	6,884
1992	83	14	615	1,272	7,134

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

**Table 19.21-- AQUACULTURE OPERATIONS, ACREAGE, PRODUCTION,
AND VALUE, BY COUNTIES: 1992**

Subject	State total	Hawaii	Maui	Honolulu	Kauai
Number of operations.....	83	23	9	36	15
Prawn producers.....	14	2	-	10	2
Acreage (Dec. 31).....	615	92	16	481	26
Production (1,000 lb.).....	1,271.6	617.4	62.5	587.7	4.0
Shellfish.....	444.7	61.0	38.5	343.2	2.0
Finfish.....	266.1	157.0	19.0	88.1	2.0
Algae.....	560.8	399.4	5.0	156.4	(NA)
Other ^{1/}	(NA)	(NA)	(NA)	(NA)	(NA)
Value (\$1,000).....	7,133.6	3,968.3	243.1	2,902.2	20.0
Shellfish.....	2,193.4	492.0	188.6	1,500.8	12.0
Finfish.....	1,075.4	583.5	46.0	437.9	8.0
Algae.....	3,259.8	2,892.8	8.5	358.5	(NA)
Other ^{1/}	605.0	(NA)	(NA)	605.0	(NA)

NA Not available.

^{1/} Nonfood products: ornamental fish, seedstock, other.

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