

Annual Hawaii Vegetables

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September 2002

Farm value at record high

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The Hawaii Agricultural Statistics Service estimates the farm value of vegetables and melons at a record high \$48.0 million in 2001, up 7 percent from 2000. Farm production declined 2 percent to 94.6 million pounds.

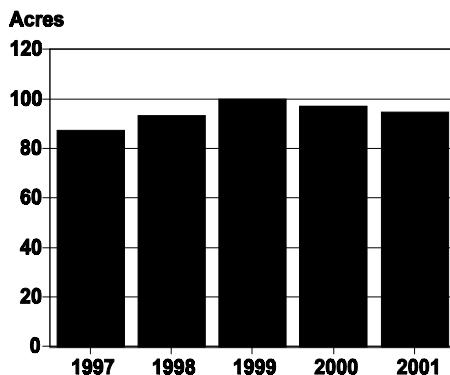
Weather remained relatively dry

Although rainfall was lower than normal in many parts of the State in 2001, there was widespread improvement in the overall amount of rain received. Locations such as Lihue, Kauai (+63%), Kahului, Maui (+8%), and Naalehu, Hawaii (+30%) all received more rain in 2001 than in 2000. In addition, rainfall in many other areas were not as low as in previous years. An exception was Hana, Maui where the airport recorded just 46.35 inches for 2001, the lowest total in 25 years. Although weather conditions were relatively dry throughout the State, and especially during the summer months, the supply of irrigation water was not a serious problem for most farmers. An adequate supply of water, coupled with abundant sunshine, enabled most crops to make fair to good progress during the year. The only farmers that encountered a major water supply problem were those on the Hamakua Coast of the Big Island. Farmers there were waiting for repairs to the Lower Hamakua Ditch irrigation system which supplies the water. The lack of irrigation water, compounded by the dry weather, resulted in some crop losses in that region.

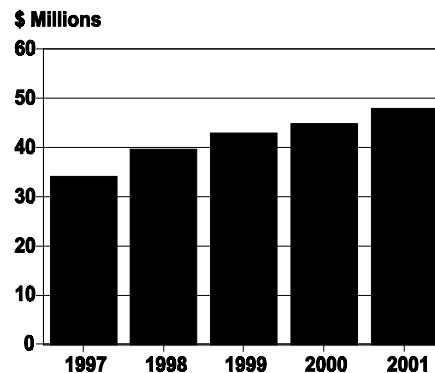
Trends

Hawaii Vegetables and Melons, 1997-2001

Acres Harvested



Farm Value



Tomato revenues at record high

Vegetable and melon growers registered record-high farm revenues of \$48.0 million in 2001, up 7 percent from 2000. With overall production down 2 percent in 2001, the increase in total farm revenues came mainly from high-valued crops such as dry onions, tomatoes, and those included in Other Vegetables and Melons.

Leading all individual vegetables and melons in farm value were tomato growers with a record high \$9.3 million in 2001, up 8 percent from 2000. A 26-percent increase in production and a 6-percent increase in the average farm price enabled dry onions growers to move into second with a record \$4.1 million in revenues, up 33 percent from 2000. Head cabbage moved into third with \$2.8 million in revenues, down 1 percent from 2000. Watermelons dropped from second in 2000 to fourth in 2001 on \$2.5 million in farm revenues, down 20 percent as both production and the average farm price declined in 2001. Cucumbers rounded-out the top five with 2001 farm revenues of \$2.3 million, down 7 percent from 2000.

Other \$1-million crops that showed a decline in farm value during 2001 were: sweet potatoes (-40%), Italian squash (-13%), watercress (-11%), sweet corn (-8%), green onions (\$3%), and snap beans (-2%).

The combined category of Other Vegetables and Melons made a significant gain in farm revenues at \$11.9 million for 2001, up 31 percent from the previous year. This category contains more than 70 different kinds of vegetables and melons including such high-value crops as sprouts, strawberries, organic vegetables, baby vegetables, ethnic vegetables, and specialty salad mix greens.■

Tomato top volume producer for third year

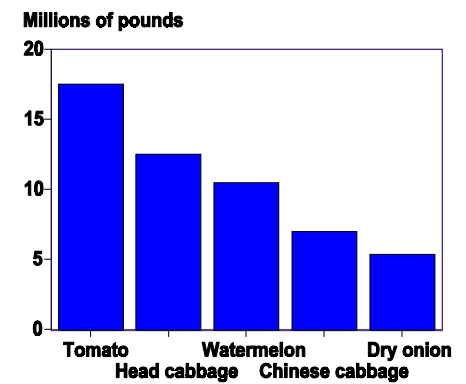
Production of vegetables and melons totaled 94.6 million pounds in 2001, down 2 percent from 2000. Leading all vegetables and melons for the third consecutive year were tomatoes (field-grown and greenhouse tomatoes combined) with a record-high harvest of 17.5 million pounds in 2001, up 6 percent from 2000.

Head cabbage growers were a distant second with production estimated at 12.5 million pounds, down 14 percent from 2000. Watermelons remained third with a harvest of 10.5 million pounds, down 17 percent from 2000. Fourth were Chinese cabbage growers with 7.0 million pounds, down 3 percent from 2000. Dry onions were fifth in volume with 5.4 million, up 26 percent from 2000.

The category Other Vegetables and Melons had a record-high combined production of 12.3 million pounds, up 16 percent from 2000. Some of the high-volume crops in this diverse group are taro leaves, sprouts, ethnic vegetables, green-leaf lettuce, honeydew melons, and cantaloupes. Other notable increases in production

were registered by pumpkins (+135%), green peppers (+11%), and mustard cabbage (+7%). On the other hand, production declines were registered by 1-million pound crops such as sweet corn (\$21%), sweet potatoes (-21%), Italian squash (-18%), and eggplant (-17%).■

Top 5 vegetables and melons based on volume State of Hawaii, 2001



Vegetables with the largest percentage change in farm value *

State of Hawaii, 2001

Commodity	2000	2001	Change Percent
	----- \$1,000 -----		
Largest increases			
Dry Onions	3,053	4,052	+33
Green peppers	1,541	1,860	+21
Tomatoes	8,580	9,275	+8
Largest decreases			
Sweet potatoes	1,500	900	-40
Watermelon	3,150	2,520	-20
Italian squash (zucchini)	1,033	900	-13

* Minimum farm value of \$1 million in 2000.

2001 Vegetable and Melon Statistics

Vegetable and melons: Acreage, production, and value State of Hawaii, 2000 and 2001 ¹

Commodity	Harvested acreage ^{2/}		Production		Farm value	
	2000	2001	2000	2001	2000	2001
	-----Acres-----		-----1,000 pounds-----		-----1,000 dollars-----	
Beans, snap	210	210	1,200	1,100	1,092	1,067
Bittermelon	20	15	300	250	255	200
Broccoli	100	155	400	550	240	358
Burdock	15	15	180	150	270	218
Cabbage, Chinese	320	320	7,200	7,000	1,512	1,610
Cabbage, head	540	490	14,600	12,500	2,774	2,750
Cabbage, mustard	130	130	1,500	1,600	645	800
Celery	50	50	1,100	1,150	341	368
Corn, sweet	440	440	2,400	1,900	1,320	1,216
Cucumbers	400	370	5,700	5,300	2,508	2,332
Daikon	350	330	3,100	3,200	870	896
Eggplant	50	50	1,200	1,000	840	660
Lettuce ^{3/}	150	140	1,300	1,200	650	600
Onions, dry	340	300	4,300	5,400	3,053	4,052
Onions, green	150	120	1,500	1,400	1,290	1,246
Peppers, green	200	210	2,800	3,100	1,541	1,860
Pumpkins	15	35	170	400	77	164
Radish	10	15	100	150	63	90
Romaine	190	190	2,000	2,000	860	900
Squash, Italian	180	160	2,200	1,800	1,033	900
Squash, Oriental	25	20	600	500	222	175
Sweet potatoes	260	220	2,500	1,800	1,500	900
Tomatoes	500	580	16,500	17,500	8,580	9,275
Watercress	35	35	970	860	1,067	946
Watermelon	560	620	12,600	10,500	3,150	2,520
Other vegetables and melons	850	1,000	10,600	12,300	9,116	11,931
Total vegetables and melons	6,090	6,220	97,020	94,610	44,869	48,034

^{1/} Sum of island estimates may not add to State total due to rounding. Only selected crops are shown separately. All other vegetables and melons are included in the "Other vegetables and melons" category. Does not include ginger root and herbs.

^{2/} Vegetables and melons: Acreage harvested (e.g., 1 acre planted and harvested 3 times during the year = 3 harvested acres). Watercress: Average acreage during the year.

^{3/} Includes head and semi-head (manoa) lettuce. Leaf lettuce and salad greens included in "Other vegetables and melons". See lettuce feature on page 6.

County Summaries

Honolulu Strengthens Hold as Top Producer

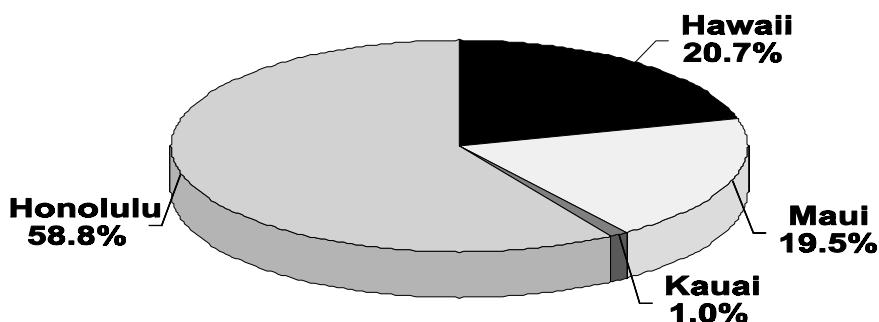
Honolulu county accounted for 59 percent of the State's total production of vegetables and melons in 2001, an increase from its 56-percent share in 2000. Hawaii county was the second leading area of vegetable and melon production with 21 percent of the State's 2001 total. Maui was third with 20 percent, while Kauai was a distant fourth with 1 percent.

Hawaii county

Big Island growers produced 19.6 million pounds of vegetables and melons during 2001, down 5 percent from 2000. Most of the decrease in total output was the result of a 14-percent decline in head cabbage production. The major vegetable crop on Hawaii island continued to be Chinese cabbage with 2001 production estimated at 5.0 million pounds, unchanged from 2000. Major vegetables that showed an increase in production during 2001 were: Daikon (+5%) and tomatoes (+28%).

Total harvested acreage of

Distribution of vegetable and melon production by county
State of Hawaii - 2001



vegetables and melons is estimated at 1,575 acres in 2001, up 1 percent from 2000.

Total farm value of all vegetables and melons for Hawaii county is estimated at \$9.8 million, up 7 percent from 2000. Chinese cabbage was the only vegetable crop posting farm revenues in excess of \$1 million

in 2001.

Maui county

Maui county produced 18.4 million pounds of vegetables and melons during 2001, down 10 percent from 2000. The overall decline in production was mainly due to decreases in head cabbage (-12%), sweet corn (-75%), dry onions (-20%), and sweet potatoes (-39%). During the five-year period covering 1997-2001, Maui county vegetable and melon production has decreased at an average annual rate of 4 percent.

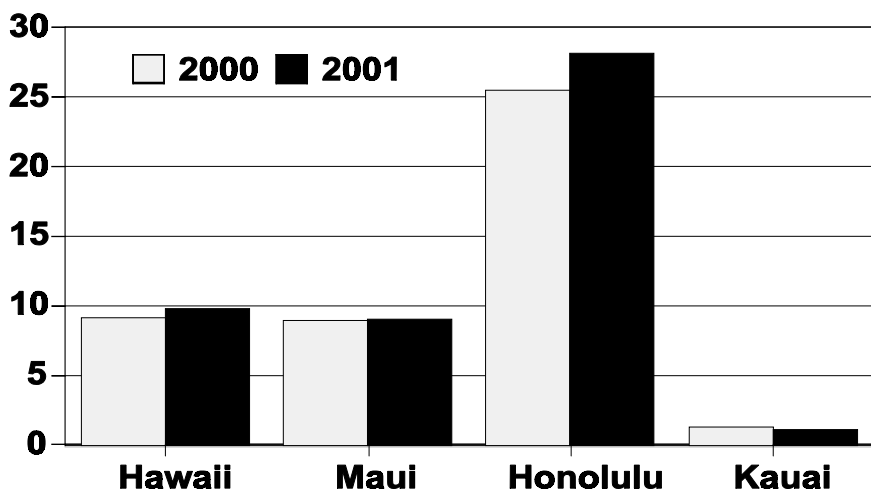
Maui county farmers harvested 1,205 acres of vegetables and melons in 2001, down 8 percent from 2000. Reductions in head cabbage, sweet corn, and dry onions were major contributors to the overall decline.

Total farm revenues increased 1 percent in 2001 to \$9.0 million. Leading the way in boosting farm revenues were vegetables and melons in the "other" category.

Farm value of vegetables and melons by county

State of Hawaii, 2000 and 2001

\$ Millions



County Summaries

Honolulu county

Output of vegetables and melons by Oahu farmers totaled 55.6 million pounds in 2001, up 2 percent from 2000. Honolulu county was one of only two counties that has averaged a positive rate of growth (+4%) in vegetable and melon production during the past five years. In addition, Oahu accounts for more than half of the State's production for 12 of the 25 vegetables and melons that are listed individually.

The top five crops on Oahu for 2001, in order of production, were: tomatoes, watermelons, head cabbage, dry onions, and green peppers. Together, these five crops accounted for 63 percent of all production on Oahu, 52 percent of total farm revenues, and 48 percent of the total harvested acreage during 2001. The category of Other Vegetables and Melons had production of 9.0 million pounds and farm revenues of \$6.8 million in 2001, up 17 and 31 percent respectively from 2000. Principle crops in this combined category were: taro leaves, sprouts, honeydew melons, cantaloupes, and long beans.

Significant production changes among the major crops include: dry onions (+103%), head cabbage (-16%), cucumbers (-10%), green peppers (+11%), and watermelons (-16%).

Kauai county

Total production of all vegetables and melons is estimated at 975,000 pounds for 2001, down 17 percent from 2000. Despite the decline from 2000, Kauai was the only other county to show a overall positive average rate of growth (+1%) in vegetable and melon production during the past five years.

Sweet corn was the major vegetable crop grown on Kauai during 2001.■

Vegetables and Melons By Counties, State of Hawaii 1997-2001

County	Harvested Acreage	Production (000 lbs.)	Farm Value (\$1,000)
State			
1997	6,270	87,450	34,159
1998	6,255	93,355	39,660
1999	7,840	99,950	42,990
2000	6,090	97,020	44,869
2001	6,220	94,610	48,034
Hawaii			
1997	1,830	23,270	9,211
1998	1,760	22,555	9,057
1999	2,000	23,950	10,421
2000	1,560	20,575	9,097
2001	1,575	19,600	9,759
Maui			
1997	1,455	26,300	11,069
1998	1,540	27,205	11,083
1999	1,395	21,940	8,650
2000	1,315	20,525	8,983
2000	1,205	18,425	9,042
Honolulu			
1997	2,865	36,960	13,141
1998	2,820	42,830	18,765
1999	4,300	53,100	23,121
2000	3,070	54,740	25,534
2001	3,320	55,610	28,175
Kauai			
1997	120	920	738
1998	135	765	755
1999	140	960	798
2000	145	1,170	1,249
2001	120	975	1,058

Hawaii Lettuces

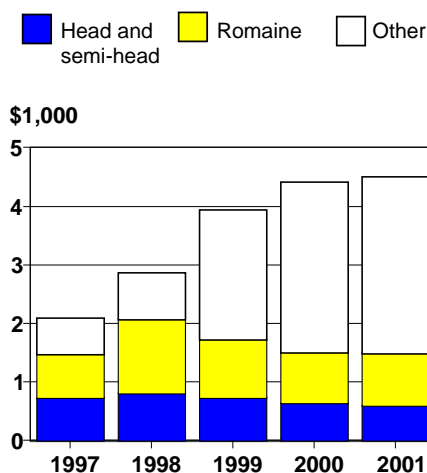
Farm Revenue of a Salad Mainstay Exceeds \$4 Million

Hawaii farmers generated a record-high \$4.5 million in revenues from the sale of all types of lettuce in 2001. This represents a 2-percent increase from 2000 and was more than double the farm revenue of 1997. After two consecutive years of decline, total production of all lettuces increased 2 percent in 2001 to an estimated 5.0 million pounds.

Output of traditional lettuce continues decline

The combined production of head and semi-head (Manoa) lettuce continued a 3-year decline with 1.2 million pounds in 2001, down 8 percent from 2000 and down 25 percent since 1997. The peak in head and semi-head lettuce production occurred in 1983 at 12.2 million pounds. Production in subsequent years, however, underwent a rapid decline as disease and insects began to significantly affect yields. Today, most of the State's head lettuce is grown on Hawaii island, while Oahu accounts for most of the State's semi-head lettuce output.

Farm Value of Hawaii Lettuces



Production

Type of lettuce	1997	1998	1999	2000	2001
	<i>1,000 pounds</i>				
Head and semi-head	1,600	1,700	1,500	1,300	1,200
Romaine	1,900	3,300	2,700	2,000	2,000
Other ¹	550	850	1,200	1,600	1,800
Total	4,050	5,850	5,400	4,900	5,000

¹ Includes all other lettuce and "salad mix" greens.

Farm Value

Type of lettuce	1997	1998	1999	2000	2001
	<i>\$1,000</i>				
Head and semi-head	736	816	735	650	600
Romaine	741	1,254	999	860	900
Other ¹	620	800	2,200	2,900	3,000
Total	2,097	2,870	3,934	4,410	4,500

¹ Includes all other lettuce and "salad mix" greens.

Romaine is the dominant lettuce

Since 1994, romaine has replaced head and semi-head lettuce as the most widely grown type of lettuce in Hawaii. Romaine production hit a peak in 1998 when additional acreage on Oahu and Maui resulted in a record harvest of 3.3 million pounds. Since then, romaine production has declined, but still remains above pre-1998 levels.

Currently, Hawaii island is the main producer of romaine followed closely by Maui and Oahu.

Other lettuce tops \$3 million in farm revenues

The most rapid expansion in the lettuce sector has been exhibited by the combined category of "other" lettuce. This group of lettuce had a

production of 1.8 million pounds in 2001, up 13 percent from 2000 and more than triple the amount produced in 1997.

Included in this catch-all group are all the leaf lettuces and salad mix (including mesclun) greens. While many specialty lettuces are grown in open fields, some are grown in greenhouses or hydroponically. The lettuce are also harvested at full maturity or in the immature (baby) stage.

Furthermore, the relatively high price commanded by these specialty lettuces and the value added by farmers marketing organic and salad mixes helped boost the farm value to \$3.0 million in 2001, up 3 percent from 2000 and almost five times the 1997 farm sales. ■

Hawaii Watercress

Disease drops output to a 19-year low

Hawaii watercress farmers harvested 860,000 pounds in 2001, down 11 percent from 2000 and the lowest total since 1982. Last year's sudden decline in production was mainly due to presence of the disease aster yellows phytoplasma. Spread by the newly discovered aster leafhopper, phytoplasma-infected plants become yellowed, stunted, and develop a proliferation of axillary shoots.¹ This new disease was first limited to one farm, but has since spread to others. Farmers are hopeful that various control measures will prevent the further spread of the disease.

Originally from Europe, most the State's watercress is currently being grown in the areas surrounding Pearl Harbor on Oahu. The presence of clean, running water from spring and artesian wells and abundant sunshine make these areas nearly ideal for watercress cultivation.■

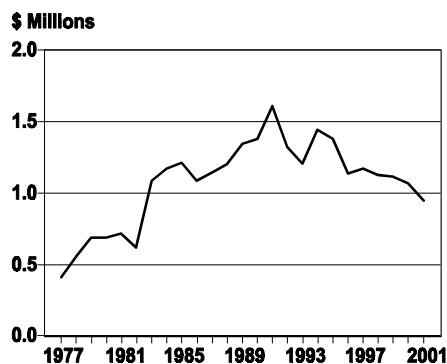
¹ *Aster Leafhopper*, New Pest Advisory No. 02-01, February 2002, Plant Control Branch, Division of Plant Industry, Hawaii Department of Agriculture.

Hawaii Watercress Statistics State of Hawaii, 1977-2001

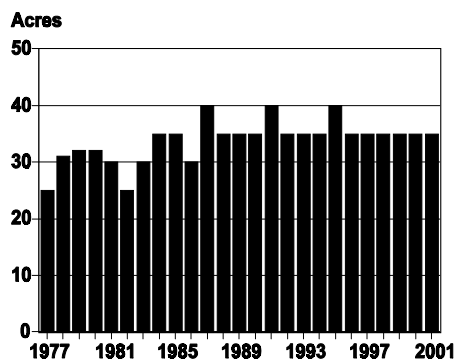
Year	Acreage in crop	Production	Average farm price	Value of sales
		1,000 pounds	Cents per lb.	\$1,000
1977	25	1,380	30.0	414
1978	31	1,545	36.0	556
1979	32	1,670	41.1	686
1980	32	1,420	48.3	686
1981	30	1,130	63.3	715
1982	25	850	73.2	622
1983	30	1,300	83.4	1,084
1984	35	1,400	83.8	1,173
1985	35	1,530	79.2	1,212
1986	30	1,300	83.6	1,087
1987	40	1,230	92.9	1,142
1988	35	1,200	100.0	1,200
1989	35	1,250	107.7	1,346
1990	35	1,300	106.0	1,378
1991	40	1,400	115.0	1,610
1992	35	1,200	110.0	1,320
1993	35	1,100	110.0	1,210
1994	35	1,300	111.0	1,443
1995	40	1,200	115.0	1,380
1996	35	1,000	114.0	1,140
1997	35	1,020	115.0	1,173
1998	35	980	115.0	1,127
1999	35	970	115.0	1,116
2000	35	970	110.0	1,067
2001	35	860	110.0	946

Watercress, State of Hawaii 1977-2001

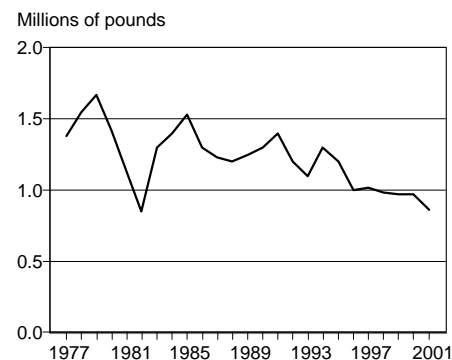
Value of Sales



Harvested Acres



Production



California Vegetable Summary

California Fresh Market Vegetable Crops, 2000 and 2001

Crop	Area Harvested		Production		Price Per Cwt. ¹		Total Value	
	2000	2001	2000	2001	2000	2001	2000	2001
	<i>Acres</i>		<i>1,000 cwt.</i>		<i>Dollars</i>		<i>\$1,000</i>	
Asparagus	37,000	35,300	1,012	1,000	122.00	156.00	144,448	165,204
Snap Beans	5,500	5,400	550	432	56.00	64.00	30,800	27,648
Bell Peppers	21,000	22,000	6,300	5,720	27.30	25.80	171,788	147,305
Cabbage	13,000	13,100	4,810	4,716	15.70	18.60	75,517	87,718
Carrots	80,500	81,000	23,345	23,490	13.30	18.10	310,489	425,169
Celery	24,000	25,500	17,280	17,723	18.80	14.70	324,850	259,865
Sweet Corn	24,000	25,000	3,960	3,750	16.70	22.30	66,132	83,625
Cucumbers	4,500	4,700	1,283	1,175	28.50	30.00	36,566	35,250
Head Lettuce	130,000	137,000	50,700	50,690	18.80	18.10	953,160	917,489
Leaf Lettuce	45,000	49,000	10,575	9,800	29.60	24.80	313,020	243,040
Romaine	36,000	42,000	11,340	11,970	20.10	17.50	227,934	209,475
Tomatoes	40,000	41,000	11,600	10,865	29.80	24.80	345,680	269,452
Watermelons	12,300	12,500	6,581	6,625	11.70	10.90	76,998	72,213

¹ Price is on a packed and loaded basis, f.o.b. shipping point.

Source: California Agricultural Statistics Service