

Annual Hawaii Vegetables

Hawaii Agricultural Statistics
Hawaii Department of Agriculture

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Farm value at record high

The Hawaii Agricultural Statistics estimates the farm value of vegetables and melons at a record high \$52.5 million in 2003, up 4 percent from 2002. Farm production increased 1 percent to 97.9 million pounds.

Favorable weather benefits most vegetables

Weather conditions were generally fair to good for vegetable and melon farmers during 2003. Most areas across the State experienced below normal levels of rainfall during 2003. A sampling of weather stations, with total rainfall and percentage of normal, reveals the extent of the diminished rainfall: Omao, Kauai (48.15 inches, 80%); Kahuku, Oahu (34.33 inches, 76%); Kunia, Oahu (20.98 inches, 75%); Kula, Maui (20.45 inches, 92%); Kamuela, Hawaii (34.72 inches, 58%); and Kealahou, Hawaii (28.07 inches, 37%). The lower-than-normal rainfall, however, did not adversely impact vegetable and melon farmers because irrigation supplies were adequate. As a result, only a few crops that depend solely on rainfall as a source of water experienced any stress during the year. Although there were occasional periods of heavy showers and strong winds, for the most part 2003 was absent of many major storms could have caused widespread losses to vegetable and melons growers. ■

State statistics page 3
Acreage, production, and farm value by crop.

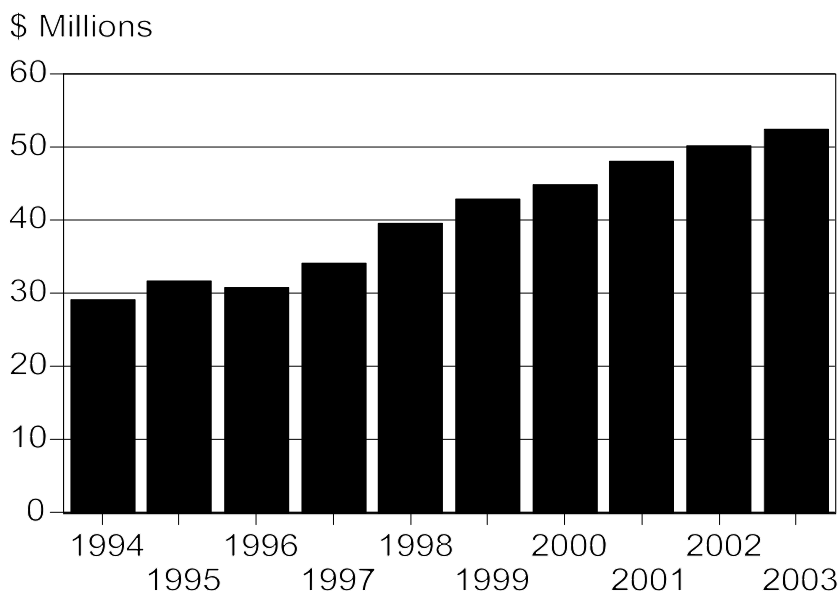
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Farm value

Vegetables and Melons State of Hawaii, 1994-2003



Tomato revenues top all others

Tomatoes led all individual vegetables and melons in farm value with a record high \$10.2 million in 2003, up 5 percent from 2002 and accounting for 19 percent of the State total. A distant second were watermelon farmers with \$2.9 million in revenues for 2003, down 3 percent from 2002. Cucumbers moved up from fourth to third in farm revenues by posting \$2.8 million during 2003, up 14 percent from 2002. Dry onions registered the largest dollar gain in farm revenues earning \$2.8 million in 2003, up 38 percent or a \$756,000 gain from 2002.

Other \$1-million value crops and their percentage change from 2002 were Chinese cabbage (-6%), green onions (+8%), green peppers (+7%), head cabbage (+2%), and sweet corn (-2%).

Notable changes also occurred for these crops that had less than \$1 million in farm value during 2003: broccoli (+20%), celery (-23%), Italian squash (+45%), pumpkins (+155%), and watercress (-14%).

The combined category of Other Vegetables and Melons had farm value of \$16.3 million in 2003, up 1 percent from 2002. This category contains over 60 individual vegetables and includes such crops as baby vegetables, ethnic vegetables, mushrooms, salad mix greens, specialty lettuces, sprouts, and taro leaves. ■



Production up for most crops

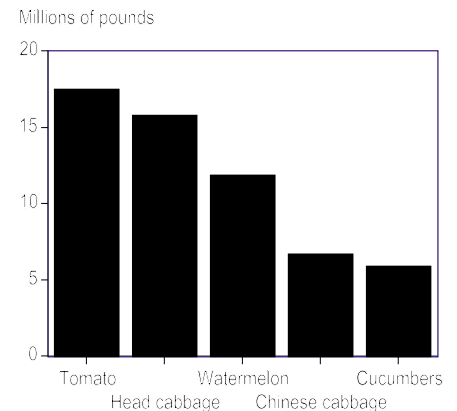
Production of vegetables and melons totaled 97.9 million pounds in 2003, up 1 percent from 2002. Leading all vegetables and melons for the fifth consecutive year were tomatoes (field-grown and greenhouse tomatoes combined) with a record-tying harvest of 17.5 million pounds in 2003. Head cabbage growers were a distant second with production estimated at 12.6 million pounds in 2003, down 3 percent from 2002. Third were watermelon farmers with a harvest of 11.9 million pounds, up 5 percent from 2002. Rounding out the top 5 were cucumbers at 5.9 million pounds for 2003, up 9 percent from 2002. Other notable increases in production were achieved by broccoli (+36%), dry onions (+57%), pumpkins (+113%), and Italian squash (+29%).

The category of Other Vegetables and Melons had combined production of 16.3 million pounds in 2003, down 7 percent from the record high achieved in 2002. Large volume

crops in this category include specialty lettuces, sprouts, and taro leaves.

In addition to Chinese cabbage and head cabbage, production declines were also registered by: daikon (-8%), sweet potatoes (-10%), mustard cabbage (-7%), oriental squash (-20%), and watercress which was down 19 percent mainly due to the aster yellows disease. ■

Top 5 vegetables based on volume State of Hawaii, 2003



Vegetables with the largest percentage change in farm value *

State of Hawaii, 2003

Commodity	2002	2003	Change
	----- \$1,000 -----		Percent
Largest increases			
Dry onions	2,016	2,772	+38
Cucumbers	2,484	2,832	+14
Green onions	1,335	1,440	+8
Largest decreases			
Chinese cabbage	1,632	1,541	-6
Watermelon	2,938	2,856	-3
Sweet corn	1,296	1,275	-2

* Minimum farm value of \$1 million in 2002.

Vegetable and Melon Statistics

Vegetable and melons: Acreage, production, and value State of Hawaii, 2002 and 2003 ^{1/}

Commodity	Harvested acreage ^{2/}		Production		Farm value	
	2002	2003	2002	2003	2002	2003
	-----Acres-----		-----1,000 pounds-----		-----1,000 dollars-----	
Beans, snap	180	200	900	1,000	873	960
Bittermelon	20	15	200	220	180	154
Broccoli	150	170	550	750	374	450
Cabbage, Chinese	340	310	6,800	6,700	1,632	1,541
Cabbage, head	540	500	13,000	12,600	2,730	2,772
Cabbage, mustard	130	130	1,400	1,300	714	676
Celery	50	45	1,100	1,200	363	280
Corn, sweet	610	830	2,400	2,500	1,296	1,275
Cucumbers	390	410	5,400	5,900	2,484	2,832
Daikon	250	220	2,500	2,300	750	713
Eggplant	60	60	750	850	548	629
Lettuce ^{3/}	120	120	1,200	1,200	684	696
Onions, dry	200	330	2,100	3,300	2,016	2,772
Onions, green	125	130	1,500	1,600	1,335	1,440
Peppers, green	215	220	3,200	3,300	1,888	2,013
Pumpkins	80	70	400	850	160	408
Radish	10	^{4/}	100	^{4/}	55	^{4/}
Romaine	150	160	1,800	1,900	846	836
Squash, Italian	175	150	1,400	1,800	644	936
Squash, Oriental	10	10	250	200	103	92
Sweet potatoes	300	210	2,300	2,060	989	860
Tomatoes	580	560	17,500	17,500	9,625	10,150
Watercress	35	30	800	650	944	812
Watermelon	550	450	11,300	11,900	2,938	2,856
Other vegetables and melons	1,160	870	17,600	16,300	16,192	16,300
Total vegetables and melons	6,430	6,200	96,450	97,880	50,363	52,453

^{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.

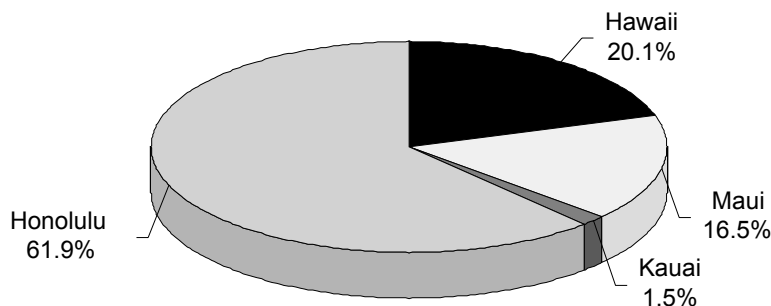
^{4/} Radish included in "Other vegetables and melons" category.

County Summaries

All counties show gains in production and farm value

Honolulu county accounted for 62 percent of the State's total production of vegetables and melons in 2003. Hawaii county was the second leading area of vegetable and melon production with 20 percent of the State's 2003 total. Maui was third with 16 percent, while Kauai was a distant fourth with 2 percent.

Distribution of vegetable and melon production by county State of Hawaii - 2003



Hawaii county

Big Island growers produced 19.7 million pounds of vegetables and melons during 2003, up 3 percent from 2002. Unlike in 2002, the county's top 3 vegetables all registered increases in production: Chinese cabbage (+2%), head cabbage (+1%), and daikon (+9%). Partially offsetting these increases in production were decreases experienced by sweet potatoes and tomatoes.

Total farm value of all vegetables and melons for Hawaii county is estimated at \$10.1 million, up 5 percent from 2002. Chinese cabbage

was the leading vegetable in terms of farm value, and it was also the only crop to post farm revenues in excess of \$1 million in 2003.

Total harvested acreage of vegetables and melons is estimated at 1,400 acres in 2003, down 4 percent from 2002.

Maui county

Maui county produced 16.2 million pounds of vegetables and melons during 2003, up 2 percent from 2002. Production got a boost from its top 4 vegetables as head cabbage (+7%), cucumbers (+11%), dry onions (+59%), and Italian squash (+71%) all registered increases during 2003.

Total farm revenues are estimated at \$9.4 million in 2003, up 6 percent from 2002. Most of the increase in farm revenues came from a 42 percent increase in dry onion to \$2.1 million. Other crops that contributed to the increase in farm value were broccoli (+65%), head cabbage (+18%), cucumbers (+12%), and Italian squash (+107%).

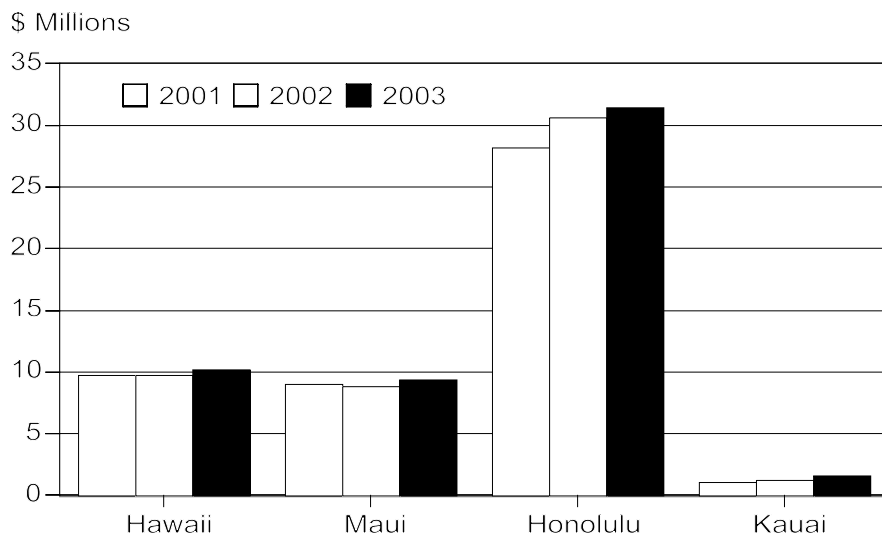
Maui county farmers harvested 1,105 acres of vegetables and melons in 2003, down 1 percent from 2002. A major reduction in tomato acreage on Molokai accounted for most of the overall decline.

Honolulu county

Output of vegetables and melons by Oahu farmers totaled 60.5 million pounds in 2003, up 1 percent from

Farm value of vegetables and melons by county

State of Hawaii, 2001 - 2003



County Summaries

2002. In addition, Oahu accounts for more than half of the State's production of bittermelon, mustard cabbage, eggplant, green onions, green peppers, oriental squash, tomatoes, watercress, and watermelon.

The top 5 crops on Oahu for 2003 based on volume, with percentage change from 2002 in parenthesis, were: tomatoes (+11%), watermelon (+6%), head cabbage (-11%), green peppers (+3%), and cucumbers (+11%).

Farm revenues totaled \$31.4 million in 2003, up 3 percent from 2002. The top 5 revenue-generating vegetables, with percentage change from 2002 in parenthesis, were tomatoes (+18%), watermelons (-2%), green peppers (+6%), cucumber (+14%), and green onions (+10%) These 5 vegetables accounted for 52 percent of the county's total farm value. Another 29 percent of total farm value is accounted for by the combined category of Other Vegetables and Melons.

Kauai county

Kauai was the only county to register double-digit percentage increases in production and farm value during 2003. Production on Kauai county reached a record high 1.5 million pounds for 2003, up 19 percent from 2002. Sweet corn, the major vegetable on Kauai, recorded a decrease in production during 2003. However, this was more than offset by increases in a variety of other vegetables.

Farm value is estimated at \$1.6 million for 2003, up 30 percent from 2002. Crops in the combined category of Other vegetables and melons accounted for 59 percent of the total value. ■

Vegetables and Melons By Counties, State of Hawaii 1999-2003

County	Harvested Acreage	Production (000 lbs.)	Farm Value (\$1,000)
State			
1999	7,840	99,950	42,990
2000	6,090	97,020	44,869
2001	6,130	94,610	48,034
2002	6,430	96,450	50,364
2003	6,200	97,880	52,453
Hawaii			
1999	2,000	23,950	10,421
2000	1,560	20,575	9,097
2001	1,580	19,600	9,759
2002	1,460	19,160	9,699
2003	1,400	19,675	10,141
Maui			
1999	1,395	21,940	8,650
2000	1,315	20,525	8,983
2001	1,210	18,425	9,042
2002	1,115	15,795	8,852
2003	1,105	16,150	9,357
Honolulu			
1999	4,300	53,100	23,121
2000	3,070	54,740	25,534
2001	3,220	55,610	28,175
2002	3,615	60,225	30,609
2003	3,435	60,540	31,397
Kauai			
1999	140	960	798
2000	145	1,170	1,249
2001	120	975	1,058
2002	240	1,270	1,203
2003	260	1,515	1,558

Hawaii Lettuces

Farm value at all-time high \$5.5 million

Farm revenues from the sales of all types of lettuce were at a record high \$5.5 million in 2003, up 17 percent from 2002.

Production of **head and semi-head (Manoa) lettuce** is estimated at 1.2 million pounds in 2003, unchanged for the second consecutive year. Aided by a record-high farm price of 58.0 cent per pound, farm revenues increased 2 percent to \$696,000 in 2003, the highest return in four years.

Romaine lettuce production totaled 1.9 million pounds in 2003, up 6 percent from 2002's 6-year low of 1.8 million pounds. Farm prices, however, decreased from the 2002's record-high to an average of 44.0 cents per pound in 2003. The decrease in farm price more than offset the increase in production and resulted in a 1 percent drop in total farm revenues to \$836,000 in 2003.

Production of **all other lettuce** totaled a record-breaking 2.4 million pounds in 2003, up 50 percent from

Lettuce production, State of Hawaii, 1999-2003.

Type of lettuce	1999	2000	2001	2002	2003
	<i>1,000 pounds</i>				
Head and semi-head	1,500	1,300	1,200	1,200	1,200
Romaine	2,700	2,000	2,000	1,800	1,900
Other ¹	1,200	1,600	1,800	1,600	2,400
Total	5,400	4,900	5,000	4,600	5,500

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

Lettuce Farm Value, State of Hawaii, 1999-2003.

Type of lettuce	1999	2000	2001	2002	2003
	<i>\$1,000</i>				
Head and semi-head	735	650	600	684	696
Romaine	999	860	900	846	836
Other ¹	2,200	2,900	3,000	3,200	4,000
Total	3,934	4,410	4,500	4,730	5,532

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

2002. Farm value also rose to a new record high at \$4.0 million in 2003, up 25 percent from 2002. Since estimates were started in 1997, production for this category of **all**

other lettuce has grown at an average annual rate of 24 percent while farm value grew at a 31 percent rate. ■

Hawaii Processed Chinese Cabbage and Daikon

Quantity processed, price, and value, State of Hawaii, 1994-2003

Year	Chinese cabbage			Daikon		
	Quantity processed	Farm price	Value of sales	Quantity processed	Farm price	Value of sales
	<i>1,000 pounds</i>	<i>Cents per pound</i>	<i>1,000 dollars</i>	<i>1,000 pounds</i>	<i>Cents per pound</i>	<i>1,000 dollars</i>
1994	1,240	29.5	366	560	26.0	146
1995	1,230	29.0	357	520	26.5	138
1996	1,250	29.0	363	500	27.0	135
1997	1,200	23.0	276	700	28.5	200
1998	1,200	19.0	228	550	30.5	168
1999	1,100	19.0	209	400	27.7	111
2000	1,000	21.0	210	350	28.0	98
2001	1,000	23.0	230	400	28.0	112
2002	1,100	24.0	26.4	400	30.0	120
2003	1,200	23.0	276	400	31.0	124

Hawaii Tomatoes

Farm value sets a new record high

Tomatoes are Hawaii's number one vegetable crop in terms of both production and farm value. With 2003 production of 17.5 million pounds, tomatoes were almost 5 million pounds ahead head cabbage. The gap is even greater in farm revenue as tomato's 2003 farm revenue of \$10.2 million is more than \$7 million higher those for watermelon.

Farm revenues for tomato growers have increased for nine consecutive years and have grown at a 6 percent average annual rate over the past 25 years (1979-2003).

Tomato production has increased significantly in recent years beginning with a 46 percent increase in 1997 and more recently stabilizing at 17.5 million pounds for the past 3 years.

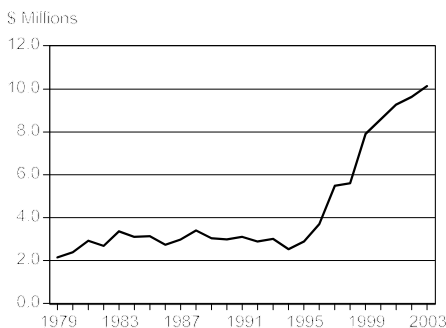
As local production increased, there was a corresponding decline in tomato imports. Ten years ago, Hawaii farmers supplied 27 percent of the total market. In 2003, local tomato growers were able to capture 84 percent of the Hawaii market. ■

Hawaii Tomato Statistics State of Hawaii, 1979-2003

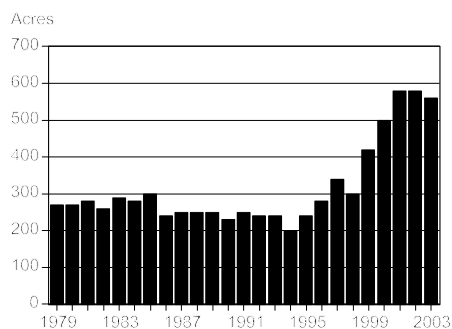
Year	Acres harvested	Production	Average farm price	Value of sales
		1,000 pounds	Cents per lb.	\$1,000
1979	270	6,200	35.0	2,170
1980	270	7,700	31.0	2,387
1981	280	8,300	35.3	2,930
1982	260	7,800	34.7	2,707
1983	290	8,700	38.7	3,367
1984	280	7,700	40.3	3,103
1985	300	7,800	40.2	3,136
1986	240	6,700	41.0	2,747
1987	250	7,000	42.6	2,982
1988	250	7,000	48.5	3,395
1989	250	5,500	55.4	3,047
1990	230	4,600	65.0	2,990
1991	250	6,000	52.0	3,120
1992	240	4,800	60.7	2,914
1993	240	5,400	56.0	3,024
1994	200	4,900	52.0	2,548
1995	240	6,000	48.5	2,910
1996	280	7,000	53.0	3,710
1997	340	10,200	54.0	5,508
1998	300	10,200	55.0	5,610
1999	420	16,800	47.0	7,896
2000	500	16,500	52.0	8,580
2001	580	17,500	53.0	9,275
2002	580	17,500	55.0	9,625
2003	560	17,500	58.0	10,150

Tomatoes, State of Hawaii 1979-2003

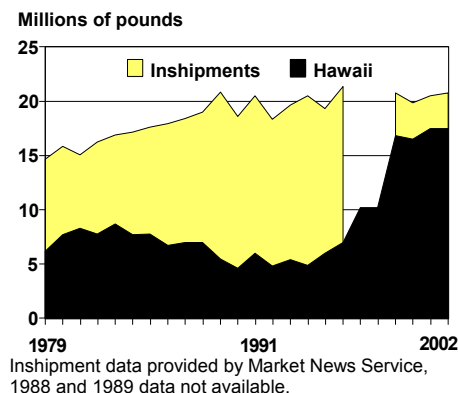
Value of Sales



Harvested Acres



Market Supply



California Vegetable Summary

California Fresh Market Vegetable Crops, 2002 and 2003

Crop	Area Harvested		Production		Price Per Cwt. ¹		Total Value	
	2002	2003	2002	2003	2002	2003	2002	2003
	<i>Acres</i>		<i>1,000 cwt.</i>		<i>Dollars</i>		<i>\$1,000</i>	
Asparagus	34,000	36,000	1,020	1,116	114.00	112.00	116,280	136,152
Snap Beans	6,500	6,000	650	600	62.60	53.50	40,690	32,100
Bell Peppers	19,000	20,500	7,030	7,688	28.50	28.80	200,618	221,122
Cabbage	12,500	13,500	5,000	5,265	14.00	13.50	70,000	71,078
Carrots	77,000	73,500	22,330	25,725	20.30	20.30	453,299	522,218
Celery	25,000	25,300	17,750	17,710	12.70	13.50	225,405	239,697
Sweet Corn	26,000	28,500	4,550	5,415	19.40	21.10	88,270	114,257
Cucumbers	4,300	4,000	1,032	1,080	27.80	33.30	28,690	35,964
Head Lettuce	130,000	135,000	49,400	47,250	14.90	21.10	736,060	996,975
Leaf Lettuce	48,000	50,000	11,520	10,000	27.70	29.80	319,104	298,000
Romaine	47,000	51,000	14,805	15,300	19.50	30.60	288,698	468,180
Tomatoes	36,000	33,000	11,340	9,240	25.30	36.00	286,902	332,640
Watermelons	11,500	12,400	5,865	5,952	12.70	12.10	74,486	72,019

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

Source: California Agricultural Statistics