

Chapter 10. Vegetables

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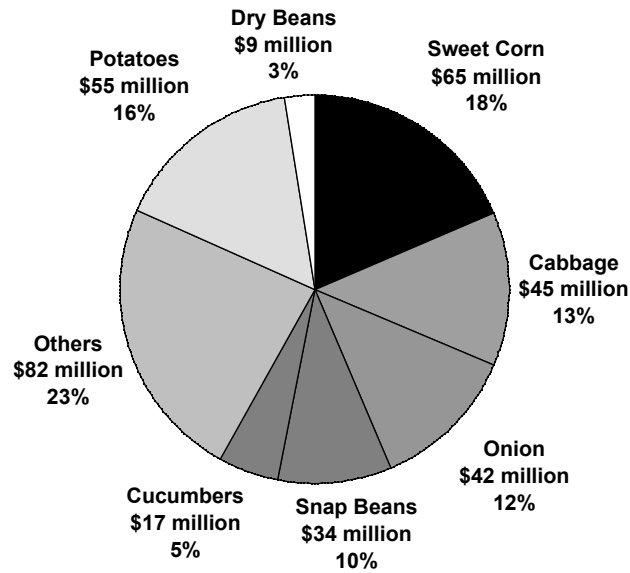
In 1999, despite cool, rainy spring weather in California, the summer drought in the East, and hurricanes in the South, total U.S. vegetable and melon output rose 7 percent. Given ample supplies of almost all vegetables and melons in 1999, prices received by U.S. growers were the lowest since 1991. In the first half of 2000, prices received by U.S. vegetable growers continued a general slide and averaged 13 percent below a year earlier. Unusually cool, wet weather in central California and the Eastern States interfered with the production of many vegetables and resulted in a rebound of grower prices. This summer (July – September), the fresh market vegetable and melon harvested area was estimated to have declined 2 percent from a year ago. Contracted processing vegetable production for the four major processing vegetables (tomatoes, sweet corn, snap beans, and green peas) is estimated at 14.8 tons, down 13 percent from last year, but 7 percent more than two years ago. Most of the decline came from tomatoes.

U.S. fall-season potato growers expect to harvest 2 percent more acres in 2000 at 1.19 million acres, and production is forecast at a record high of 463 million hundred weight (cwt.). Despite higher prices in the U.S. market, the import volume of fresh-market potatoes from Canada declined 17 percent. However, the volume of frozen potato imports from Canada continued to climb to another record-high, rising 13 percent from a year earlier. This spring, U.S. dry edible bean growers reacted to large stocks, slow exports, and low prices by reducing the harvest area to an estimated 1.65 million acres – down 12 percent from a year earlier and 9 percent below the 1990s' average.

In New York, the total value of vegetable production (fresh and processing, excluding potatoes and dry beans) in 1999 was estimated to be \$284 million which was 9.2 percent of total New York agricultural product receipts-- down 2.6 percent from 1998 production. The value of New York's principal fresh market vegetables at \$199 million in 1999 was down 2 percent from 1998. The production values of sweet corn, snap beans, and cucumbers increased, while onion production value took the biggest hit, down 31 percent from a year earlier. The value of principal processing vegetables at \$45.3 million was 9 percent lower than in 1998, with increases in production of cabbage for kraut (up 16 percent) and snap beans (2 percent), and decreases in green peas (down 22 percent) and sweet corn (18 percent). The value of potato production was \$55 million, and the value of dry bean production was \$9 million in 1999.

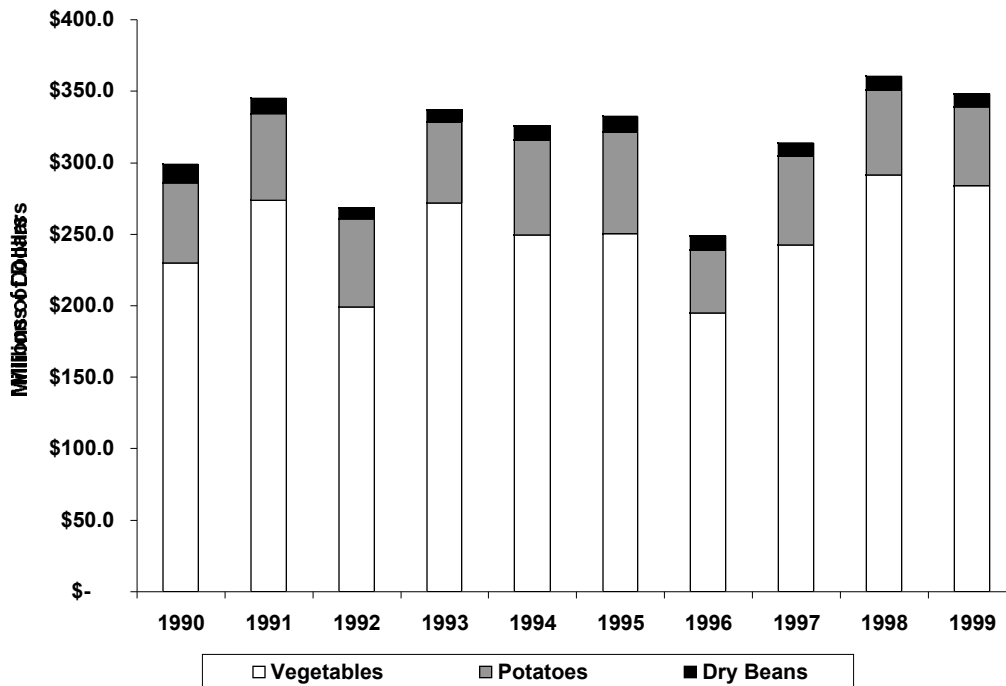
Early rains in 2000 lowered initial volumes for New York vegetable crops. Due to higher yields this year, New York's onion crop for 2000 is forecast at 4.64 million cwt., up 32 percent from 1999. Potato production is estimated at 6.18 million hundred cwt., down 9 percent from 1999, and acreage is estimated to have declined 16 percent from the 21,300 acres of a year earlier. Dry bean acreage in New York is estimated to have risen 29 percent, reflecting the addition of late spring acreage caused by a rainy spring and slightly more attractive prices for light red kidneys – New York's major bean class.

FIGURE 10-1. VALUE OF NEW YORK VEGETABLE PRODUCTION IN 1999



Source: New York Agricultural Statistics, 1999-2000.

FIGURE 10-2. VALUE OF PRODUCTION OF VEGETABLE CROPS, POTATOES, AND DRY BEANS NEW YORK, 1990-1999



Source: New York Agricultural Statistics, 1999-2000.

	New York				United States				New York as % of U.S. 1999
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99	
	\$ million				\$ million				
Vegetables for Fresh Market									
Sweet Corn	29.7	47.6	52.2	10%	418.6	452.4	458.6	1%	11%
Cabbage	46.4	43.2	42.4	-2%	273.0	303.7	229.9	-24%	18%
Onion	42.0	51.9	35.8	-31%	770.0	826.1	632.9	-23%	6%
Snap Beans	17.3	16.6	19.8	19%	154.4	238.9	255.7	7%	8%
Cucumbers	12.8	14.7	16.8	15%	204.7	225.6	217.5	-4%	8%
<i>Principal Vegetables for Fresh</i>	<i>172.1</i>	<i>202.8</i>	<i>199.4</i>	<i>-2%</i>	<i>7948.8</i>	<i>8071.5</i>	<i>7550.0</i>	<i>-6%</i>	<i>3%</i>
Vegetables for Processing									
Sweet Corn	15.1	15.5	12.7	-18%	250.3	238.7	234.4	-2%	5%
Snap Beans	11.5	13.6	13.8	2%	128.0	125.4	134.5	7%	10%
Green Peas	8.4	12.7	10.0	-22%	138.5	136.6	126.9	-7%	8%
Cabbage for Kraut	3.2	2.9	3.3	16%	8.3	7.7	8.6	12%	39%
<i>Principal Vegetables for Processing</i>	<i>43.3</i>	<i>49.8</i>	<i>45.3</i>	<i>-2%</i>	<i>1488.5</i>	<i>1426.1</i>	<i>1706.1</i>	<i>20%</i>	<i>3%</i>
Potatoes	62.2	59.0	55.0	-7%	2225.7	2368.2	2698.0	14%	2%
Dry Beans	9.2	9.6	9.0	-6%	529.6	594.7	573.7	-4%	2%
Total	313.6	360.1	347.9	-3%	14653.0	15144.8	15163.7	0%	2%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

	New York				United States				New York as % of U.S. 1999
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99	
Vegetables for Fresh Market									
	1,000 cwt				1,000 cwt				
Sweet Corn	1,993	2,628	3,202	22%	23,641	26,311	27,248	4%	12%
Cabbage	5,376	4,598	4,961	8%	25,267	23,946	22,069	-8%	22%
Onion	3,660	3,750	3,528	-6%	68,769	66,024	73,562	11%	5%
Snap Beans	316	329	372	13%	3,805	4,883	5,530	13%	7%
Cucumbers	600	760	648	-15%	11,571	11,263	11,921	6%	5%
<i>Total Vegetables for Fresh</i>	<i>12,893</i>	<i>13,115</i>	<i>13,563</i>	<i>3%</i>	<i>429,660</i>	<i>420,005</i>	<i>451,190</i>	<i>7%</i>	<i>3%</i>
Vegetables for Processing									
	1,000 Tons				1,000 Tons				
Sweet Corn	251.5	219.5	179.4	-18%	3,342.3	3,255.6	3,297.9	1%	5%
Snap Beans	77.5	77.0	72.6	-6%	729.3	731.0	775.4	6%	9%
Green Peas	40.2	38.5	31.7	-18%	480.0	483.9	461.6	-5%	7%
Cabbage for Kraut	69.2	61.8	68.2	10%	183.7	172.6	177.9	3%	38%
<i>Total Vegetables for Processing</i>	<i>510.4</i>	<i>459.8</i>	<i>420.8</i>	<i>-8%</i>	<i>16,417.9</i>	<i>15,690.5</i>	<i>19,211.7</i>	<i>22%</i>	<i>2%</i>
	1,000 cwt				1,000 cwt				
Potatoes	7,150	7,290	6,758	-7%	467,091	475,771	478,109	0%	1%
Dry Beans	679	426	414	-3%	29,370	30,418	33,230	9%	1%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

TABLE 10-3. AVERAGE FARM PRICES OF MAJOR VEGETABLE CROPS, NEW YORK AND UNITED STATES, 1997- 99								
	New York				United States			
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99
Vegetables for Fresh Market	\$/cwt				\$/cwt			
Sweet Corn	14.9	18.1	16.3	-10%	17.7	17.2	16.8	-2%
Cabbage	9.7	10.3	9.2	-11%	11.1	12.9	10.6	-18%
Onion	12.7	16.3	12.2	-25%	12.6	13.8	9.78	-29%
Snap beans	54.8	50.6	53.3	5%	40.6	48.9	46.2	-6%
Cucumbers	21.4	19.3	26.0	35%	17.7	20.0	18.2	-9%
Vegetables for Processing	\$/Tons				\$/Tons			
Sweet corn	60.1	70.6	70.6	0%	74.9	73.3	71.1	-3%
Snap beans	148.0	176.0	190.0	8%	176.0	172.0	173.0	1%
Green peas	210.0	330.0	314.0	-5%	272.0	273.0	261.0	-4%
Cabbage for kraut	46.3	46.4	49.0	6%	45.2	44.7	48.6	9%
	\$/cwt				\$/cwt			
Potatoes	8.75	9.35	9.00	-4%	5.29	5.03	5.49	9%
Dry beans	20.60	25.30	19.90	-21%	19.30	19.00	17.60	-7%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

TABLE 10-4. HARVEST AREA, AVERAGE MARKET PRICE, AND VALUE PER ACRE, SELECTED NEW YORK VEGETABLES, 1996-1999								
	Harvest Area				Value Per Acre			
	1996	1997	1998	1999	1996	1997	1998	1999
Fresh market	---(acres)---				---(\$/acre)---			
Carrots	600	600	500	750	3,300	4,480	4,800	7,260
Lettuce	800	700	600	500	1,300	4,200	5,500	6,678
Cauliflower	1,000	1,000	1,400	1,100	4,662	6,960	6,884	5,745
Tomatoes	1,900	3,200	3,300	3,100	1,768	3,492	4,060	3,973
Cucumbers	3,900	3,000	3,800	3,600	1,730	4,280	3,860	4,680
Snap beans	3,900	5,100	5,300	6,100	1,972	3,398	3,137	3,250
Cabbage	11,000	11,600	12,600	12,100	3,232	4,656	4,522	3,420
Onions	11,400	12,200	12,500	12,600	2,352	3,810	4,890	2,839
Sweet corn	27,100	27,300	29,200	33,700	1,110	1,088	1,629	1,549
Processing	---(acres)---				---(\$/acre)---			
Carrots	1,100	1,500	1,200	1,200	850	1,042	1,470	1,416
Beets	4,200	2,700	2,300	2,500	744	971	942	1,214
Kraut cabbage	3,000	2,300	3,000	2,400	623	1,394	956	1,392
Green peas	14,400	18,200	17,500	14,900	588	464	726	669
Snap beans	20,200	22,800	20,800	21,200	651	503	651	651
Sweet corn	40,900	39,300	39,200	32,500	398	385	395	390
Potatoes	---(acres)---				---(\$/acre)---			
Potatoes	28,500	29,500	27,000	25,500	1,927	2,121	2,525	2,385
Dry beans	29,000	43,500	30,000	30,200	351	322	359	273

Source: *New York Agricultural Statistics, 1999-2000.*

The production of sweet corn for fresh market continued to increase in 1999 in New York, up 22 percent from 1998. However, the growth in the nation's production is slowing down. The prices received by New York growers for fresh market vegetables were lower in 1999 for sweet corn (down 10 percent), cabbage (11 percent) and onion (25 percent), and higher for cucumbers (up 35 percent) and snap beans (5 percent) compared to 1998 prices. In 1999, the highest production value per acre was for carrots --both fresh market (\$7,260/acre) and processing (\$1,416/acre).

Commodity	Value of 1999 production	Average value of production 1988-98	10-year high (year in parentheses)	10-year production value trend
	<i>\$ million</i>	<i>\$ million</i>	<i>\$ million (year)</i>	<i>\$ million</i>
Potatoes	60.82	61.08	76.19 (1994)	0.505
Sweet corn (fresh)	52.19	33.66	52.19 (1999)	2.864
Cabbage (fresh)	41.38	42.47	56.76 (1991)	0.005
Onion (fresh)	35.77	49.16	74.83 (1993)	-(2.481)
Snap beans (fresh)	19.83	11.51	19.83 (1999)	1.261
Cucumber (fresh)	16.85	9.28	16.85 (1999)	1.045
Snap beans (processed)	13.81	12.04	14.01 (1991)	0.203
Sweet corn (processed)	12.66	13.50	16.44 (1995)	0.596
Tomatoes (fresh)	12.32	11.02	16.40 (1990)	-(0.306)
Green peas (processed)	9.96	7.77	12.71 (1998)	0.736
Dry beans	8.24	10.08	13.99 (1997)	0.149
Cauliflower (fresh)	6.32	6.40	9.64 (1998)	0.180
Carrot (fresh) ^a	5.45	4.31	7.81 (1992)	-(0.318)
Cabbage for Kraut	3.34	2.50	3.58 (1993)	0.116
Lettuce (fresh)	3.34	4.34	8.11 (1990)	-(0.627)
Beets (processed)	3.04	2.44	3.13 (1996)	0.100
Total^b	352.99	319.71	370.51 (1998)	4.307

^a Includes quantities used for processing from 1989 to 1992.

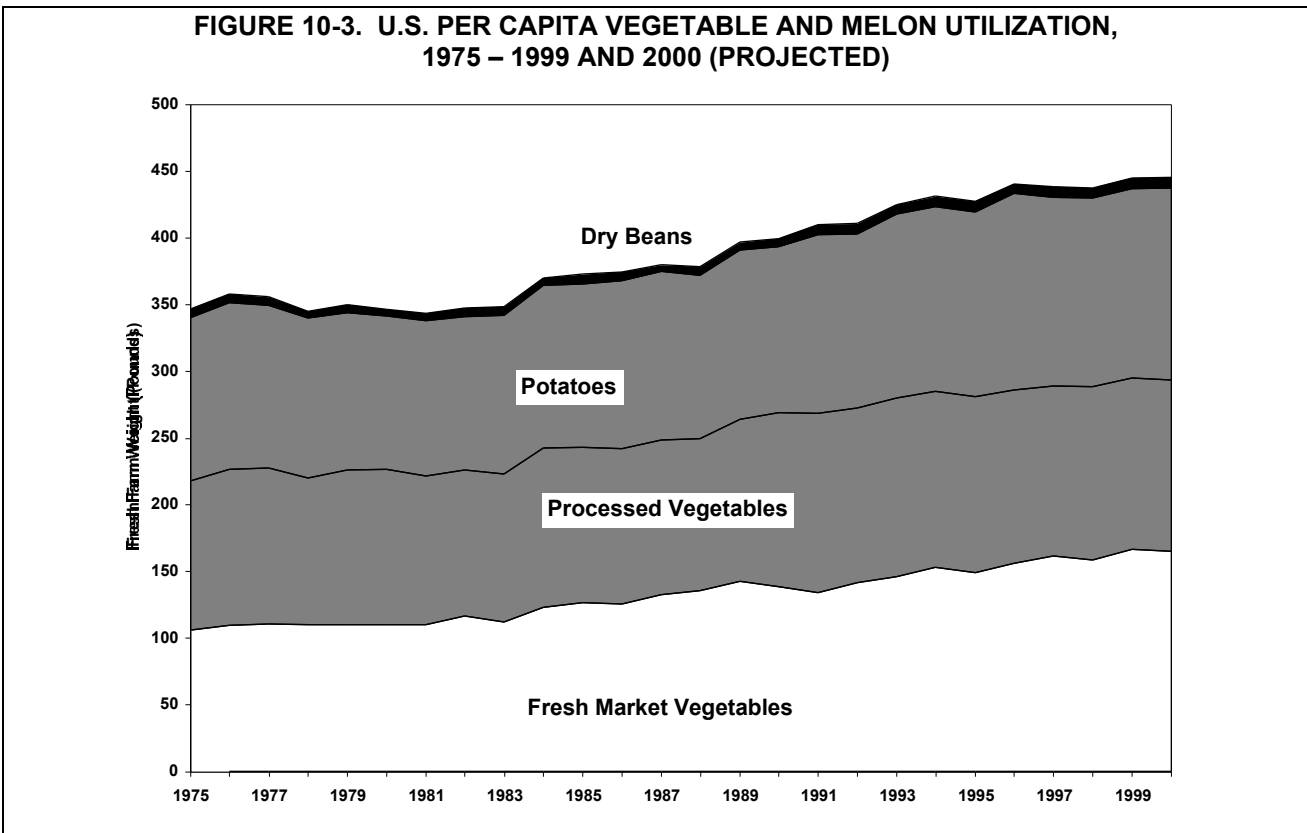
^b Includes potatoes and dry beans.

Source: *New York Agricultural Statistics 1999 - 2000*.

Table 10-5 presents trends in the value of production for primary vegetables in New York State. The vegetables are listed in descending order with respect to their 1999 value of production. The trend analysis is calculated on nominal dollars (not discounted for inflation). The production value of principal vegetables produced in New York had an average growth of \$4.31 million per year over the past decade. Fresh market sweet corn had the largest growth trend at \$2.86 million per year, followed by fresh market snap beans at \$1.26 million per year. Onion had the highest negative trend at \$2.48 million per year in the past ten years. Other vegetables with a negative trend in the past ten years were tomatoes, carrots, and lettuce for fresh market.

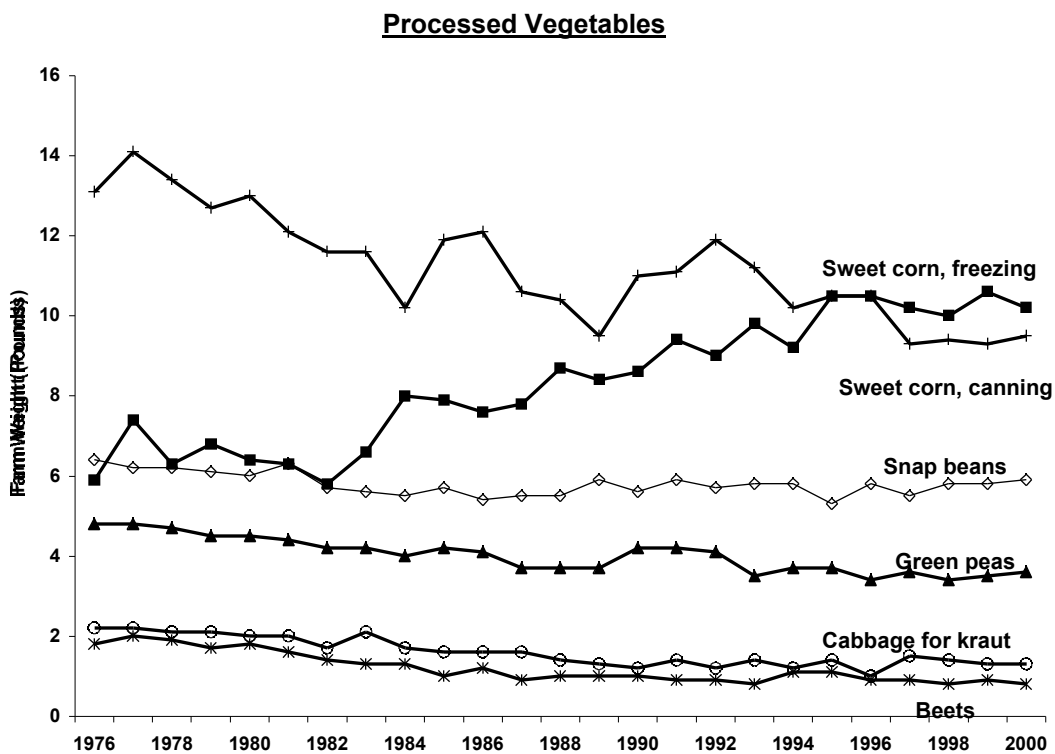
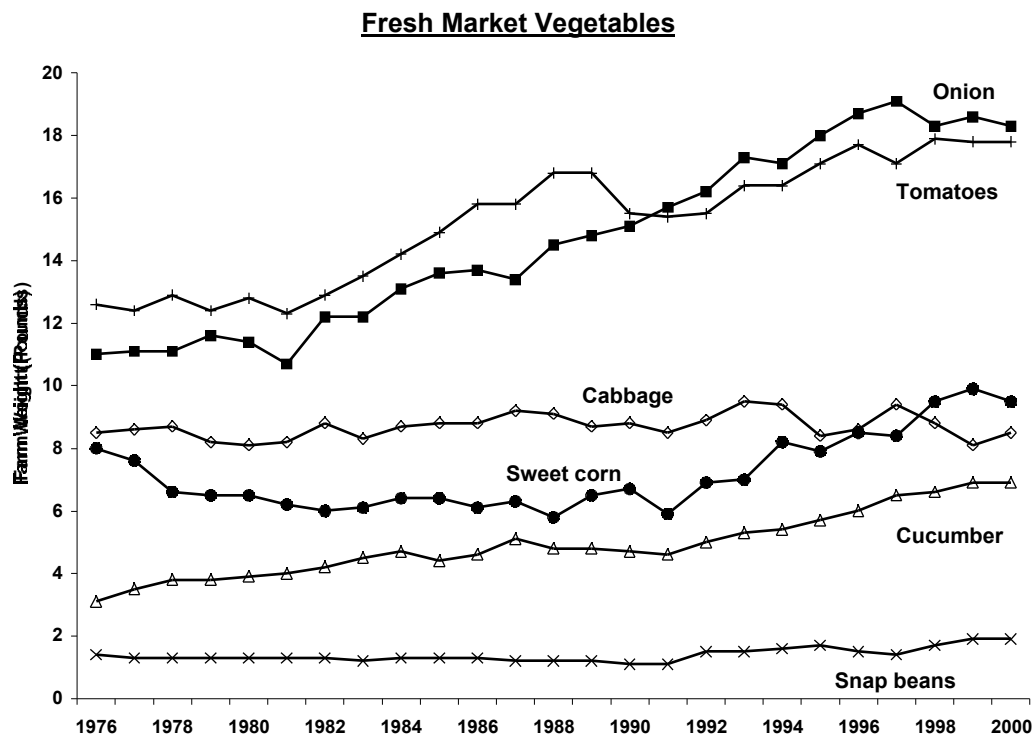
Consumption

Per capita use of all vegetables and melons totaled 454 pounds in 1999 – up 8 pounds from 1998, and projected to reach 456 pounds in 2000. In 1999, large supplies and lower prices led to a 5-percent increase in fresh vegetable use (excluding potatoes). Increases were also noted in vegetables for freezing, potatoes, and dry beans. On the fresh-market side, significant increases in 1999 per capita use were experienced in cauliflower (up 40 percent), head lettuce (15 percent), and broccoli (15 percent), which included fresh-cut and value-added. Very few fresh-market vegetables experienced reduced use last year, with declines in cabbage (down 8 percent), leaf/romaine lettuce (7 percent), and tomatoes (1 percent) being the most noteworthy. Per capita use of all processing vegetables (including potatoes and mushrooms) stayed stable and totaled 224 pounds (fresh equivalent) in 1999, with a 4-percent drop in use of canning vegetables and a 4-percent gain in use of frozen vegetable products. Per capita use of potatoes rose 10 percent to about 142 pounds (fresh equivalent) in 1999. Both fresh and processing uses increased with processed use accounting for 66 percent of the potato crop. Per capita use of dry beans was estimated to be 7.9 pounds in 1999, an increase from 7.4 pounds the year before.

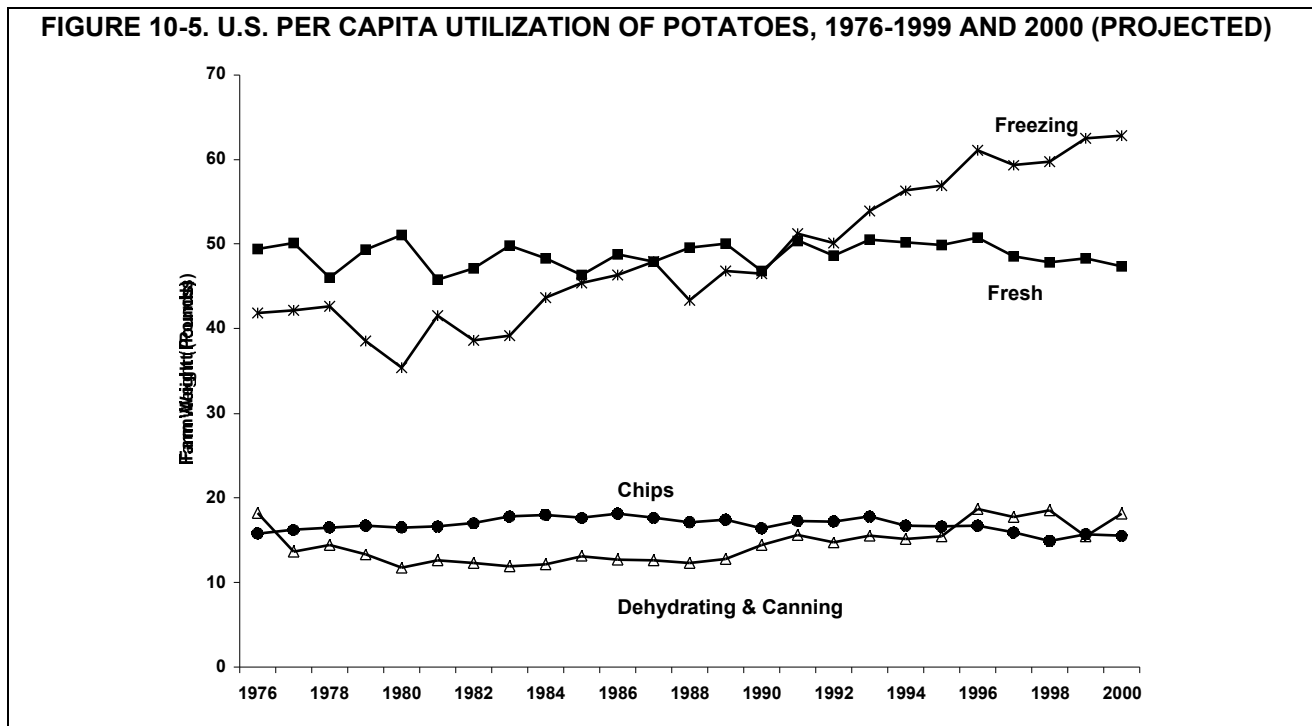


Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

FIGURE 10-4. U.S. PER CAPITA UTILIZATION OF PRINCIPAL NEW YORK VEGETABLES, 1976-1999 AND 2000 (PROJECTED)



Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000



Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

Trade

In 1999, the trade deficit in vegetable crops continued to expand. While the value of exports increased 1 percent to \$3.3 billion, imports rose 5% to \$4.0 billion. Since 1995 (when exports last exceeded imports) import value has risen 51%, while export value has increased just 16%. In 1999, U.S. imports from Mexico declined 4%, and -- driven by fresh greenhouse vegetables, canned sweet corn, and frozen potatoes -- imports from Canada rose 15%. Large domestic output and low market prices helped trim U.S. imports of fresh vegetables to 14% of total supplies, compared with 15% in 1998. Imports (excluding potatoes) accounted for 10% of domestic frozen vegetable consumption last year -- with broccoli accounting for 42% of frozen vegetable imports -- and nearly 11% of the vegetables used in canned form were imported. The United States exported nearly 8% of its fresh-market vegetable and melon supplies (production plus imports). This is the same as for the previous three years, and up from 7% in 1989. With higher prices and reduced stocks, about 7% of canned vegetable supplies were exported in 1999, down from 8% a year earlier.

The net value of potato trade (export value minus import value) remained relatively constant in 1999, totaling \$386 million. The value of potato and potato-product imports increased 14% to \$420 million -- due primarily to increased imports of frozen french fries from Canada. On the export side, the value of 1999 potato and potato-product exports rose 6% to \$806 million due to a sharp rise (133%) in potato flake exports, most of which was destined for the European Union. In 2000, frozen french fries would continue to drive all potato imports higher, while export volume would decrease due to reduced flake exports to Europe.

The value of U.S. vegetable exports to China and Hong Kong combined totaled \$104 million in 1999, up 4% from a year earlier. Six commodities accounted for two-thirds of the vegetables exported to China and Hong Kong. The major items exported were frozen french fries (\$26.5 million), celery (\$7.4 million), frozen sweet corn (\$5.3 million), and canned sweet corn (\$4.8 million).

TABLE 10-6. IMPORT VALUE OF MAJOR U.S. IMPORT VEGETABLES, BY COUNTRY, 1997-99					
Fresh Market	(\$ million)				
	Canada	Mexico	Netherlands	Others	World
1997					
Tomatoes	58.97	517.05	52.91	19.74	648.67
Bell Peppers	17.55	129.89	42.54	8.32	198.30
Onions	6.86	108.93	1.19	10.22	127.20
Cucumbers	9.79	89.11	0.26	2.10	101.26
1998					
Tomatoes	100.51	567.44	64.49	25.46	757.90
Bell Peppers	30.80	171.78	52.61	10.32	265.51
Onions	12.00	120.70	2.25	15.47	150.41
Cucumbers	12.62	142.46	0.38	2.38	157.85
1999					
Tomatoes	119.69	489.59	57.17	22.87	689.32
Bell Peppers	37.93	122.04	46.01	15.78	221.76
Onions	11.65	103.65	0.94	26.35	142.59
Cucumbers	15.69	122.78	0.82	2.59	141.87
Canned vegetable					
1997					
Tomato products	31.47	1.32	12.98	47.13	92.90
Artichokes	0.00	0.68	38.49	1.98	41.15
Cucumbers	7.31	0.00	0.00	12.74	20.05
1998					
Tomato products	29.34	4.24	10.24	61.96	105.78
Artichokes	0.00	1.36	65.55	4.06	70.97
Cucumbers	10.14	0.00	0.00	11.93	22.07
1999					
Tomato products	29.19	26.95	2.76	64.50	123.39
Artichokes	0.00	1.83	77.88	4.72	84.43
Cucumbers	12.82	0.00	0.00	16.32	29.13
Frozen vegetables					
1997					
Broccoli	0.17	91.21	14.26	0.02	105.66
Cauliflower	0.63	13.42	0.87	0.20	15.12
Green peas	8.69	0.04	0.69	4.97	14.40
1998					
Broccoli	0.67	86.78	20.12	0.02	107.59
Cauliflower	0.61	12.69	1.10	0.19	14.60
Green peas	7.79	0.13	1.31	3.83	13.06
1999					
Broccoli	0.48	105.04	23.20	0.08	128.80
Cauliflower	0.76	15.55	1.08	0.76	18.15
Green peas	8.03	0.34	3.03	7.50	18.89

Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

TABLE 10-7 EXPORT VALUE OF MAJOR U.S. EXPORT VEGETABLES, BY COUNTRY, 1997-99					
Fresh Market	Canada	Mexico	\$ million Japan	Others	World
1997					
Lettuce	129.64	7.46	4.53	17.51	159.14
Tomatoes	108.69	13.37	0.22	8.82	131.10
Broccoli	46.19	0.65	38.14	9.79	94.76
Onions	42.68	4.98	19.93	22.29	89.88
1998					
Lettuce	134.88	8.02	7.37	16.84	167.12
Tomatoes	107.38	3.73	0.84	8.57	120.52
Broccoli	47.36	0.49	39.54	8.55	95.93
Onions	50.14	10.31	22.26	24.37	107.07
1999					
Lettuce	131.03	8.20	4.03	16.17	159.42
Tomatoes	104.11	4.44	3.17	10.96	122.68
Broccoli	42.41	0.17	46.05	10.00	98.63
Onions	46.08	3.71	25.57	23.01	98.36
Canned vegetable					
1997					
Tomato products	109.06	30.10	11.88	97.30	248.35
Sweet corn	1.64	49.89	19.87	88.05	159.44
1998					
Tomato products	119.35	27.34	8.71	81.71	237.10
Sweet corn	1.45	51.21	11.65	86.32	150.62
1999					
Tomato products	120.77	25.44	9.73	77.68	233.62
Sweet corn	1.41	49.44	18.14	76.62	145.60
Frozen vegetable					
1997					
Sweet corn	3.57	40.68	3.81	12.63	60.69
Green peas	3.57	3.91	0.16	1.82	9.46
1998					
Sweet corn	2.14	39.55	3.70	15.54	60.92
Green peas	3.24	3.83	0.10	2.09	9.26
1999					
Sweet corn	2.27	37.80	3.33	17.81	61.21
Green peas	3.51	3.81	0.08	2.61	10.01

Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

Outlook

The U.S. market will continue to be a highly lucrative market for imports around the world. Low inflation continues to be part of the U.S. economic boom. Consumers are benefiting from an abundant supply of fresh produce and low prices. Consumers will eat more produce in the years to come. With only a small portion of disposable personal income (10 percent in 1999) being spent on food, desire for speed, convenience, high quality, and more varieties will drive consumers' purchase decision. The share of food dollars spent in restaurants and away from home was 48 percent in 1999, up from 39 percent in 1980.

However, for producers, commodity prices stay low, energy prices are up, and global supply further intensifies competition in the market. From digital communications, genetic engineering to better and smarter packaging, technology is exerting a substantial impact on how produce is grown, distributed, and marketed. Information technology is a key factor behind the increasing industry consolidation. According to Forrester Research Inc., Cambridge, Mass, electronic grocery sales are expected to reach \$10.8 billion by 2003. Still, that would account for just 2 percent of industry sales. On the other hand, business-to-business internet commerce is projected to reach \$1.3 trillion by 2003. *FoodTrends 2000* (an annual study on purchasing trends in the food industry conducted by *The Packer*) showed increases in electronic sourcing at three market segments. Fifty percent of restaurants, 66 percent of wholesalers/distributors, and 65 percent of food processors used electronic orders in 2000, up from 23 percent, 54 percent, and 42 percent, respectively, in 1999. With the belief that e-commerce will streamline supply chain management, and armed with the support from venture capital companies, the emergence of produce e-commerce web-sites is a trend worth watching.

Category	1994	1998	2003 (Projected)
		\$ million	
Fresh-cuts	2,282	6,423	12,950
Packaged salads	461	1,403	2,514
All other fresh-cuts	1,821	5,020	10,436
Organic	463	1,353	3,435

Source: Packaged Facts Report, Klorama Academic

Efforts to differentiate and add value to products will result in growing opportunities for smaller marketers. Fresh-cut (precut) produce consumption continues to grow because of the tight labor market in the foodservice industry, consumers' desire for convenience, and the produce industry's effort to create new products. Vegetables that are commonly sold precut include broccoli florets, brussel sprouts, carrots, cauliflower florets, cole slaw, long beans, mixed greens, salads, salad kits, and soup vegetables. Based on a study conducted by Anderson, Logan and Henahan at Cornell University, the food service segment represents approximately 55 percent of the total U.S. fresh-cut industry of \$8.5 billion. Northeast fresh-cut food service purchases represent approximately \$300 million. The largest fresh-cut food service market segments are fast food and casual/family dining. The Kalorama Information's *Packaged Fact* report estimated that retail sales of packaged salads and other precut produce (fruits and vegetables) exceeded \$6.4 billion in 1998 and is projected to approach \$13.0 billion. Packaged precut salads surpassed \$1.4 billion in 1998 and are expected to surpass \$2.5 billion by 2003. The fact that much fresh cut produce is packaged, is conducive to branding and allow the industry to stimulate sales with logo and mass advertising and promotion.

The organic category is growing nationwide. Retail sales of organic vegetables and fruits (whether cut or uncut) approached the \$1.4 billion mark in 1998. Organic produce is increasing about 10-12 percent annually in the past decade although it represents only about 2 percent of retail produce sales. However, annual sales growth for organic produce have tapered off in recent years, having peaked at more than 32 percent in 1996. *FoodTrends 2000* showed that about one-third of consumers said they had bought organic produce in the first six months of 2000. Eight-two percent of consumers who purchased organic produce said they purchased vegetables. The top three fresh organic vegetables purchased by consumers were tomatoes (46 percent), leafy vegetables (16 percent), and carrots (14 percent). While organic produce is becoming more mainstream, organic growers face the same challenges as the conventional growers – fewer buyers, bigger competitors, more product competition, narrower price differentiation with conventional produce, and how to expand consumer demand. While demand for organic products is still growing, growers need to prepare for strong competition by better crop planning, closer coordination with buyers, and expanding consumer education efforts. Other efforts to differentiate products include niche branding and specialty marketing (vegetarian, ethnic, and gourmet marketing, etc.). Food-borne illness, pesticide usage, environmental protection, generic engineering technology, worker protection, and world trade issues will continue to take high profile with government regulation and different groups which will influence the industry in 2001 and beyond.