

Chapter 9. Vegetables

Wen-fei L. Uva, Senior Extension Associate

New York vegetable operations are becoming larger in size and more efficient in production. According to the 1997 Census of Agriculture, there were 2,719 vegetable farms in New York State in 1997 with around 170,000 acres and \$207 million of vegetable production. Although the number of farms is decreasing in the state, production value and acreage have increased in the past ten years (Table 9-1). According to the New York Agricultural Statistics Service, total farm value of New York vegetables (fresh market and processing) was \$301 million in 1998. This figure excluded potato and dry bean production values. The value of potato production was around \$61 million, and the value of dry bean production was over \$9 million in 1998. The combined production value of vegetables, potatoes and dry beans (\$371 million) was about 12% of total New York agricultural farm marketing receipts and about 44% of the total New York horticultural crop production receipts in 1998.

	Number of Farms	Production Value	Acres of Production
	#	\$ million	acres
1987	2,822	158.5	150,054
1992	2,756	180.9	137,464
1997	2,719	206.9	167,834

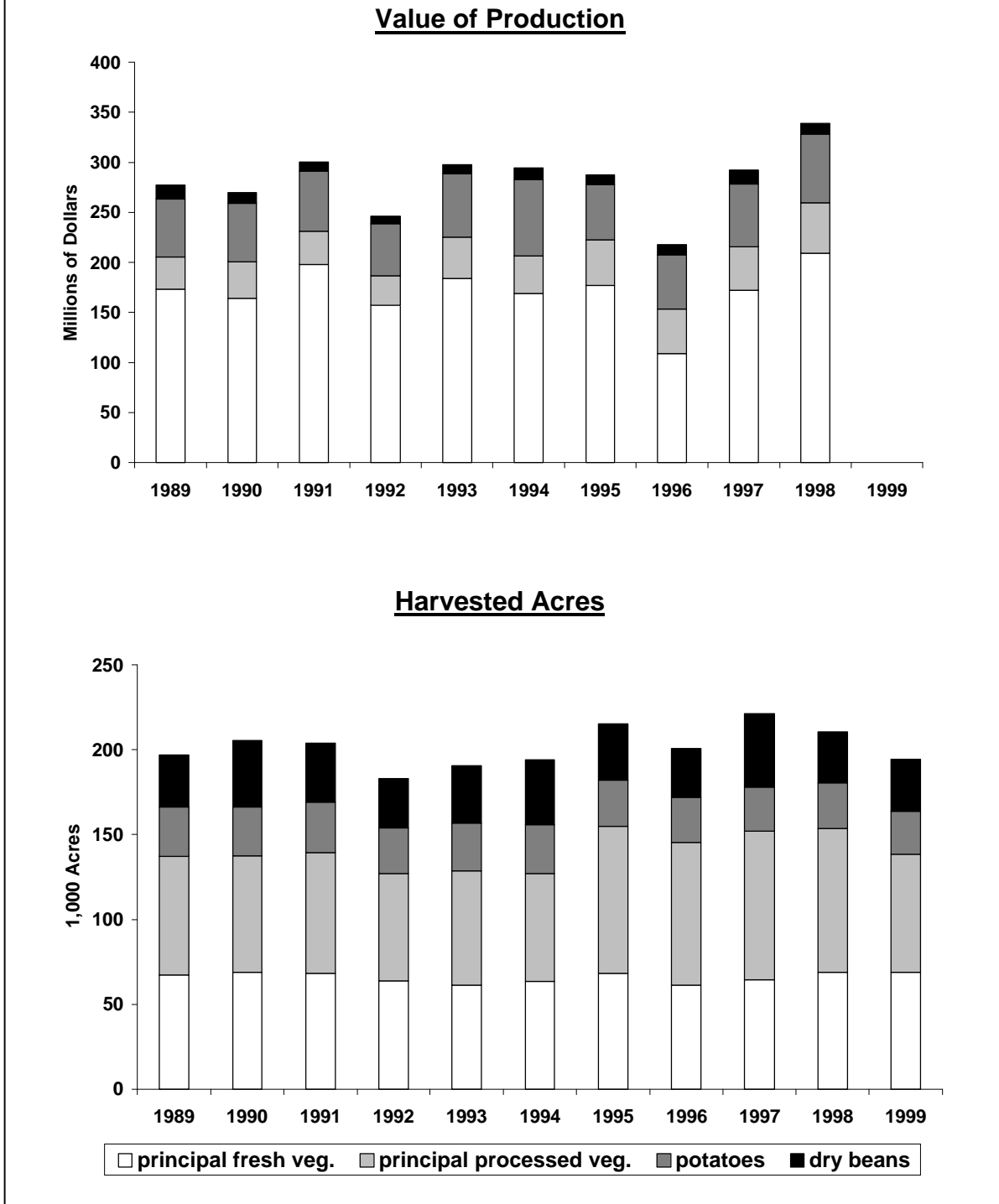
Source: 1997 Census of Agriculture, National Agricultural Statistics Service and Economic Research Service, USDA

Production Trends

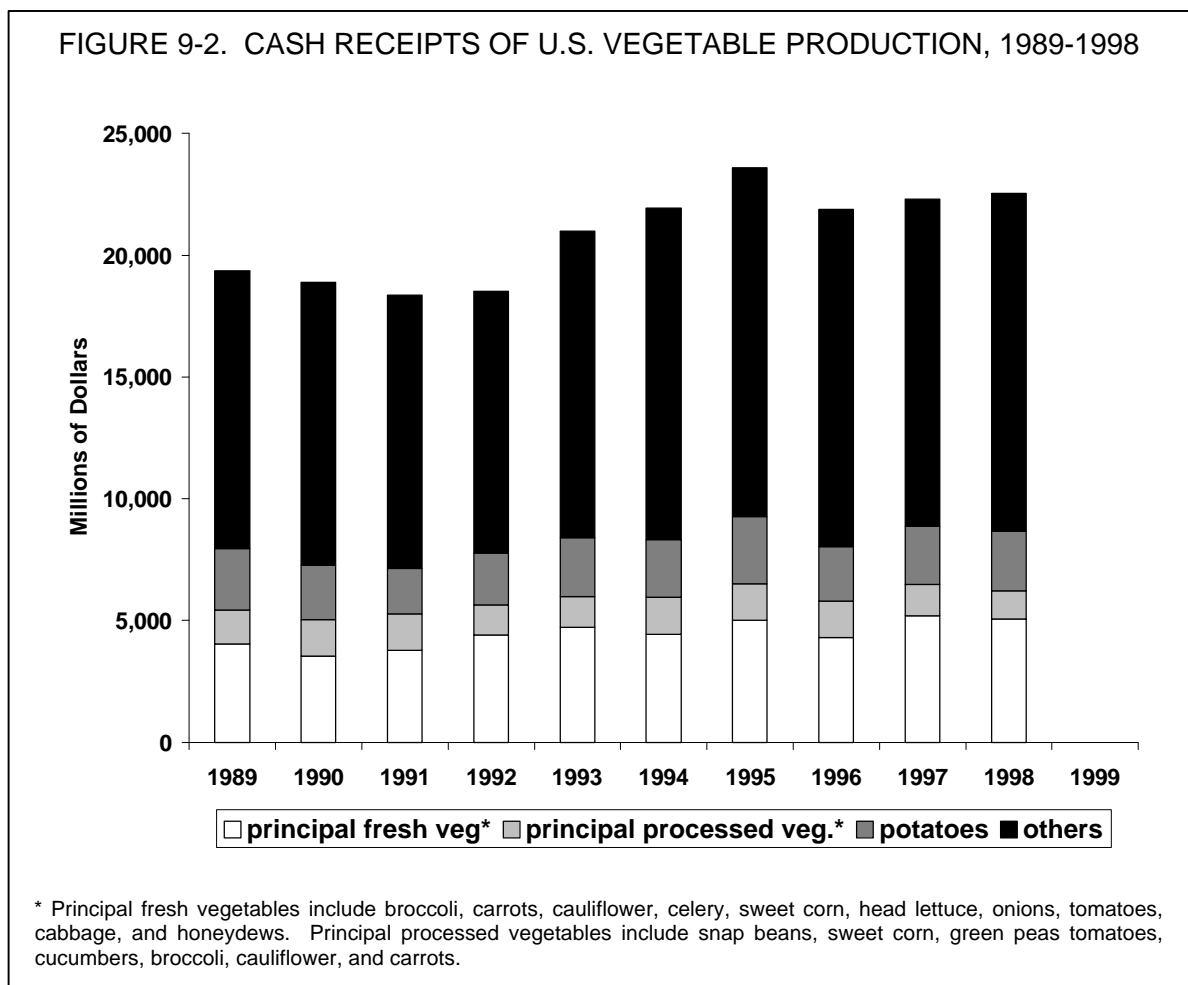
According to the New York Agricultural Statistics Service, the production value of principal fresh market vegetables, at \$209 million in 1998, was about 25% higher than the five-year average. This figure does not include pumpkins, summer or winter squash, peppers, and melons. The production value for processed vegetables, \$49.8 million in 1998, was nearly 20% higher than the five-year average. Figure 9-1 shows the production trends of New York principal vegetables, potatoes, and dry beans over time. The growth of production values in the vegetable industry in the past couple years was mostly due to the strong recovery in the fresh market sector of the industry.

In 1998, all U.S. vegetable and melon production declined 1% from 1997 to 1.3 billion hundred-weight. Output was stronger for potatoes (up 2%) and dry edible beans (up 5%), but output declined for fresh-market vegetables and melons (down 4%), processing vegetables (down 5%), and sweet potatoes (down 7%). Processors of five selected vegetables (tomatoes, sweet corn, snap beans, green peas, and cucumbers) expected to contract for 1.4 million acres in 1999 -- up 2% from a year earlier. Contract acreage is up strongly for tomatoes (18%), as well as for cucumbers for pickles (up 4%). With adequate frozen stocks and lackluster demand for canned products, contract areas for sweet corn, snap beans, and green peas were down in 1999. Figure 9-2 shows the trends in cash receipts for U.S. vegetable production over time.

FIGURE 9-1. PRODUCTION VALUES AND HARVESTED ACRES, PRINCIPAL VEGETABLES, POTATOES, AND DRY BEANS, NEW YORK, 1989-1999



Source: New York Agricultural Statistics, 1998-1999



Source: *Vegetables and Specialties*, USDA – ERS, July 1999

The three major fresh market vegetables in New York State are cabbage, onions and sweet corn, and the top three vegetables for processing are sweet corn, snap beans and green peas. All major fresh vegetable crops except carrots and lettuce saw growth from 1996 to 1998. Although the total area of processing vegetables harvested in 1998 (84,900 acres) decreased slightly from 1997 (87,600 acres), the total production value increased 15% to \$49.8 million. The production value of processed vegetables remained fairly constant. Nonetheless, there has been a noticeable growth among the production of sweet corn, snap beans and green peas for processing. Table 9-2 shows the harvest acreage, production values, market average prices and value per acre in New York for selected vegetable crops. Values per acre were based on market average price multiplied by average yield per acre in the state. In 1998, the highest average market prices for vegetables produced in New York State were snap beans (\$50.60/cwt) for fresh market vegetables, and green beans (\$330/ton) for processed vegetables. The highest production value per acre for fresh market was cauliflower (\$6,884/acre), and carrots (\$1,470/acre) for processing.

Vegetables	Harvest Area			Market Average Price			Value Per Acre		
	1996	1997	1998	1996	1997	1998	1996	1997	1998
Fresh market	---(acres)---			---(\$/cwt)---			---(\$/acre)---		
Carrots	600	600	500	15.0	16.0	16.0	3,300	4,480	4,800
Lettuce	800	700	600	13.0	15.0	20.0	1,300	4,200	5,500
Cauliflower	1,000	1,000	1,400	33.3	34.8	35.3	4,662	6,960	6,884
Tomatoes	1,900	3,200	3,300	22.1	29.1	29.0	1,768	3,492	4,060
Cucumbers	3,900	3,000	3,800	17.3	21.4	19.3	1,730	4,280	3,860
Snap beans	3,900	5,100	5,300	49.3	54.8	50.6	1,972	3,398	3,137
Cabbage	11,000	11,600	12,600	8.1	9.7	11.9	3,232	4,656	4,522
Onions	11,400	12,200	12,500	9.8	12.7	16.3	2,352	3,810	4,890
Sweet corn	27,100	27,300	29,200	14.8	14.9	18.1	1,110	1,088	1,629
Processing	---(acres)---			---(\$/ton)---			---(\$/acre)---		
Carrots	1,100	1,500	1,200	60.7	61.0	63.9	850	1,042	1,470
Beets	4,200	2,700	2,300	75.2	64.7	78.5	744	971	942
Kraut cabbage	3,000	2,300	3,000	40.2	46.3	46.4	623	1,394	956
Green peas	14,400	18,200	17,500	306.0	210.0	330.0	588	464	726
Snap beans	20,200	22,800	20,800	186.0	148.0	176.0	651	503	651
Sweet corn	40,900	39,300	39,200	72.3	60.1	70.6	398	385	395
Potatoes	---(acres)---			---(\$/cwt)---			---(\$/acre)---		
	26,500	26,000	27,000	7.30	8.75	9.45	2,044	2,406	2,552
Dry beans	---(acres)---			---(\$/cwt)---			---(\$/acre)---		
	29,000	43,500	30,000	27.0	20.6	25.3	351	321	359

Source: *New York Agricultural Statistics, 1998-1999*

Table 9-3 presents trends in the value of production for primary vegetables in New York State. The vegetables are listed in descending order with respect to the value of production in 1998. It also shows the average value of production and the trend value of production over the last 10 years. The trend analysis is calculated on nominal dollars (not discounted for inflation). The production value of principal vegetables produced in New York had a growth trend of \$2.34 million per year over the past decade. Fresh market sweet corn has the largest growth trend at \$1.8 million per year, followed by processed sweet corn at \$1.02 million per year. Vegetables with a negative trend in the past ten years were onions, cabbage for fresh market, tomatoes, lettuce, and carrots for fresh market.

TABLE 9-3. TRENDS IN THE VALUE OF PRODUCTION FOR SELECTED NEW YORK VEGETABLES, 1989-1998

Commodity	Value of 1998 production	Average value of production 1988-98	10-year high and the year	10-year production value trend
	\$ million	\$ million	\$ million (year)	\$ million
Potatoes	68.89	61.73	76.19 (1994)	0.749
Onion	51.95	49.26	74.83 (1993)	-(0.912)
Cabbage	49.91	43.33	56.76 (1991)	-(0.330)
Sweet corn (fresh)	47.57	31.44	49.01 (1995)	1.832
Snap beans (fresh)	16.65	10.62	16.65 (1998)	0.740
Sweet corn (processed)	15.50	12.91	16.44 (1995)	1.020
Cucumber	14.70	8.25	14.69 (1998)	0.689
Snap beans (processed)	13.55	11.97	14.01 (1991)	0.028
Tomatoes	13.40	11.39	16.40 (1990)	-(0.666)
Green peas (processed)	12.71	7.26	12.71 (1998)	0.750
Dry beans	10.78	10.37	14.09 (1989)	0.053
Cauliflower	9.64	6.53	9.64 (1998)	0.115
Lettuce	3.30	4.72	8.11 (1990)	-(0.712)
Cabbage for Kraut	2.87	2.42	3.58 (1993)	0.057
Carrot (fresh)*	2.40	4.15	7.81 (1992)	-(0.368)
Beets	2.17	2.32	3.13 (1996)	0.097
Total	338.67	278.67	338.67 (1998)	3.142

* Includes quantities used for processing from 1989 to 1992.
Source: *New York Agricultural Statistics* 1998-1999.

County Production

The top five vegetable production counties in the state are Genesee (16.2% of state production value), Orange (10.1%), Orleans (9.8%), Monroe (6.3%), and Suffolk (6.2%) based on 1998 production. The following table shows cash receipts from vegetable production sales (excluding potatoes and dry beans) for selected counties since 1995.

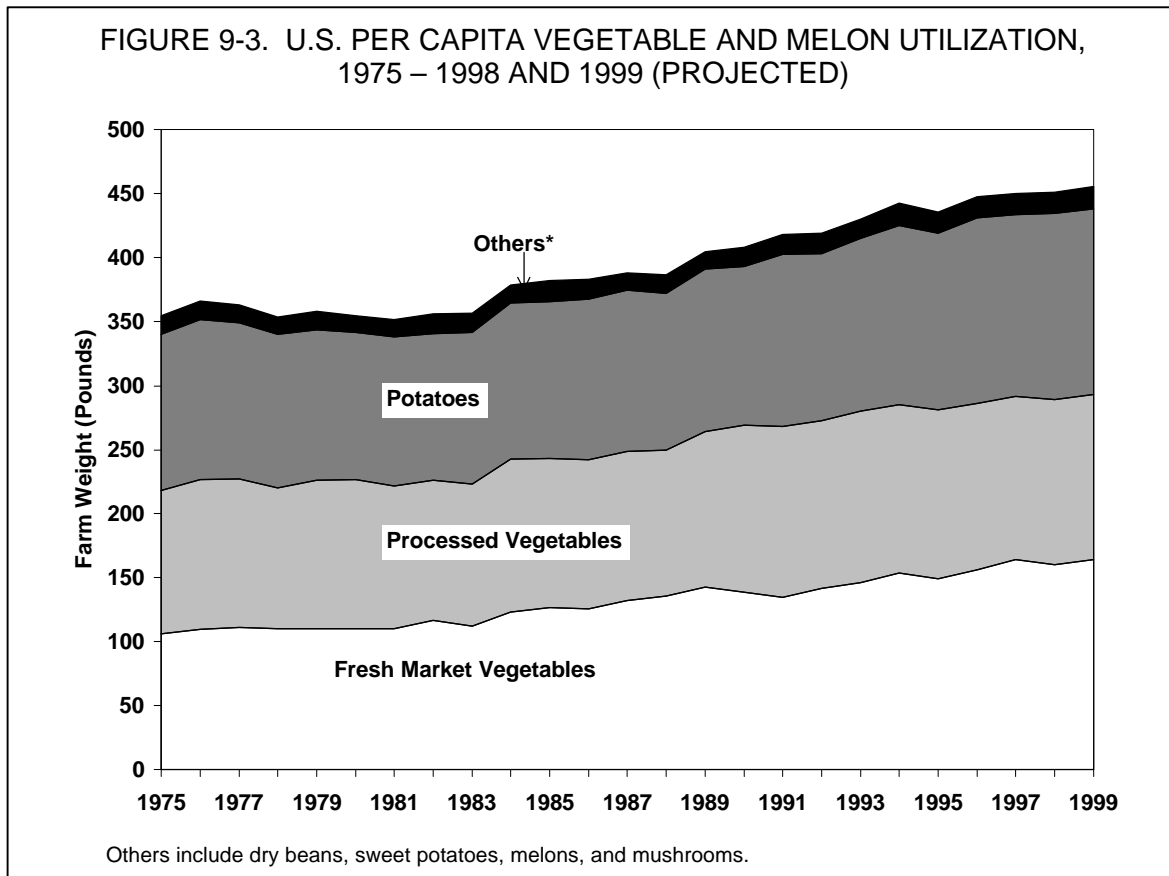
TABLE 9-4. CASH RECEIPTS FROM VEGETABLE PRODUCTION* FOR SELECTED COUNTIES, NEW YORK, 1995-1998

County	1995	1996	1997	1998
	---(\$1,000)---			
Cayuga	10,100	8,003	11,186	13,657
Genesee	22,648	17,945	39,979	48,809
Monroe	15,012	11,895	15,611	19,059
Ontario	10,075	7,983	14,242	17,388
Orange	40,011	31,703	24,994	30,515
Orlean	23,353	18,504	24,139	29,471
Oswego	14,371	11,387	13,500	16,482
Suffolk	17,889	14,175	15,381	18,778
State total	250,213	194,701	246,669	301,152

* Excluding potatoes and dry beans.
Source: *New York Agricultural Statistics* 1998-99.

Consumption

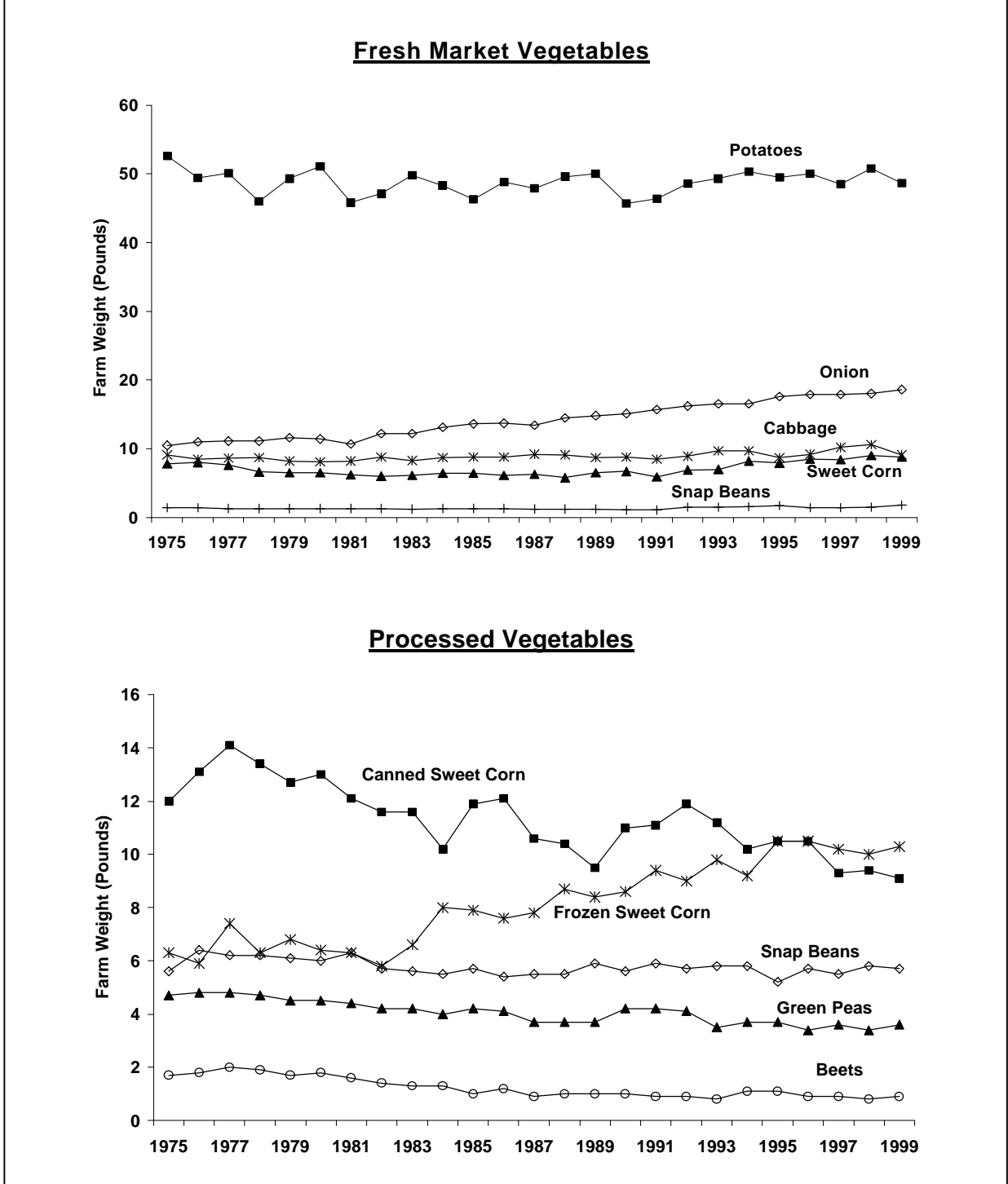
In 1999, increased use of fresh vegetables is expected to outweigh reduced use of most other vegetable categories to push vegetable and melon consumption (on a fresh-equivalent basis) up 1% to a record high 453 pounds per person in the United States. A reversal of this scenario was experienced in 1998. In 1998, declining fresh market vegetable use (down 4%) outweighed rising per capita use of processed vegetables (up 1%), and the total vegetable and melon use was 449 pounds per person -- down 1 pound from the previous year (Figure 9-3.)



Source: USDA, *Vegetable and Specialties*, July 1999

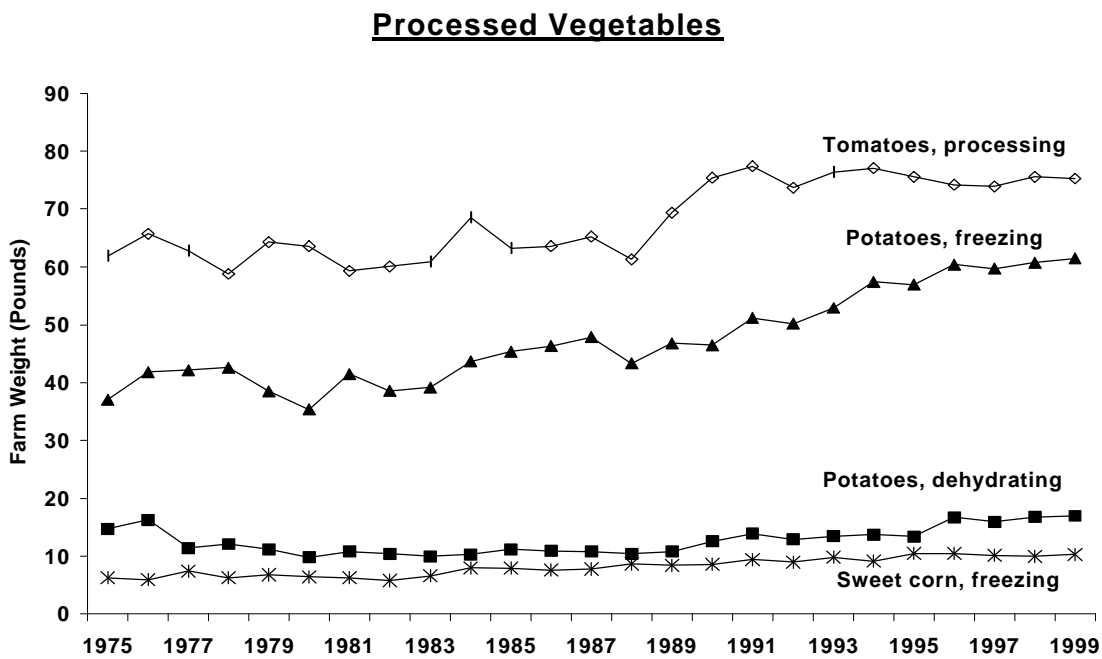
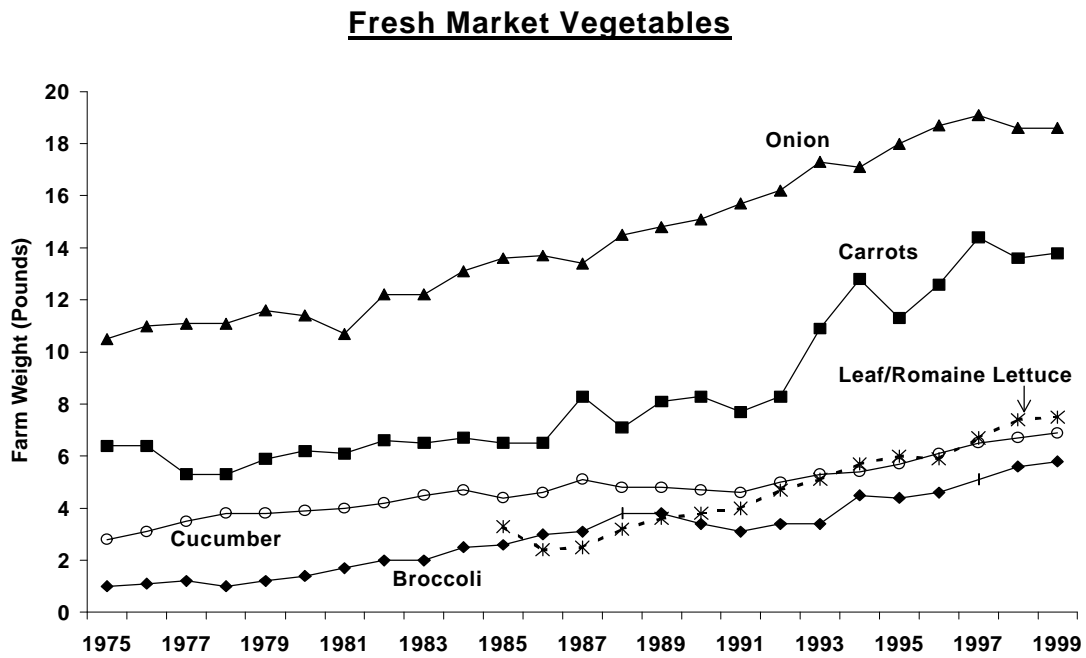
On the fresh-market side, significant declines in per capita use were experienced in head lettuce, cucumbers, carrots, and cabbage, partially offsetting increases in snap beans, asparagus, and broccoli. Based on preliminary data, per capita use of potatoes, the largest U.S. vegetable crop, rose 2% to about 145 pounds in 1998. Figure 9-4 presents national per capita utilization for some principal vegetables produced in New York State. Both fresh and processed uses of potatoes likely increased. While the consumption of processed potatoes, which accounts for 65% of the potato crop, has been rising this decade, fresh use continues to remain relatively stable at around 50 pounds per person. The growth in processed potato per capita consumption was mainly in the frozen form, which increased from 37.1 pounds in 1975 to 60.7 pounds in 1998 and 61.5 pounds (estimated) in 1999. Figure 9-5 shows some vegetables with substantial growth of per capita utilization in the past two decades.

FIGURE 9-4. U.S. PER CAPITA UTILIZATION OF PRIMARY NEW YORK VEGETABLES, 1975-1998 AND 1999 (PROJECTED)



Source: USDA, *Vegetable and Specialties*, July 1999.

FIGURE 9-5. U.S. PER CAPITA UTILIZATION OF SELECTED GROWING VEGETABLES, 1975-1998 AND 1999 (PROJECTED)

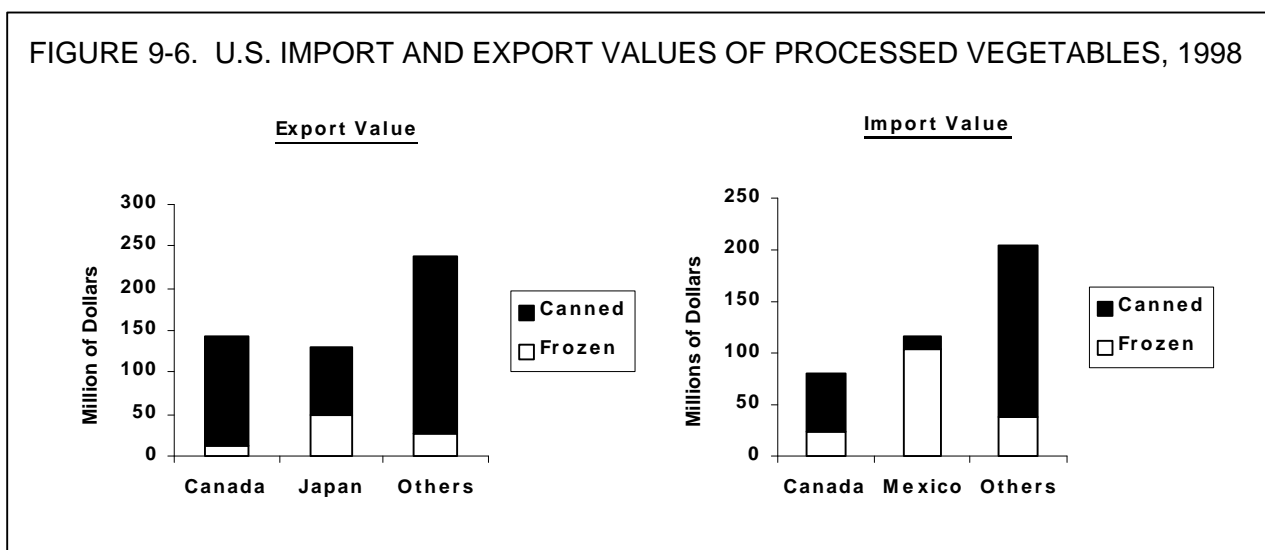


Source: USDA, *Vegetable and Specialties*, July 1999.

Trade

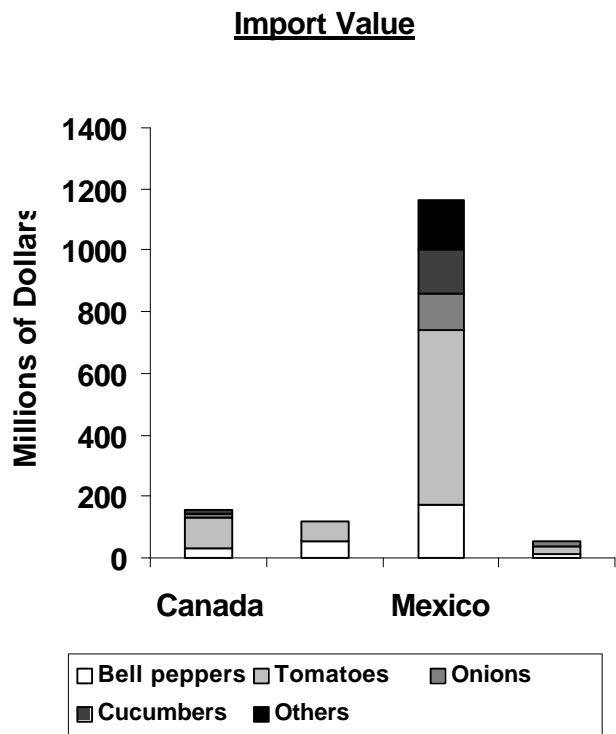
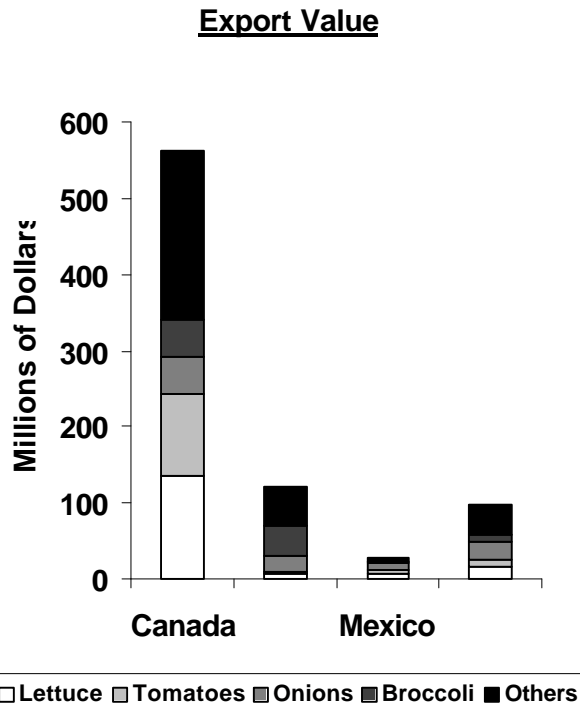
For the third consecutive year, the United States was a net importer (in dollar value) of vegetables, melons, pulses, and related seed crops in 1998. Tomatoes were the largest fresh market import, at \$758 million. In 1998, nearly 11% of the more than 121 billion pounds of total U.S. vegetable and melon consumption was satisfied by imported products totaling \$3.9 billion. This was up from 9% in 1997 and 7% in 1990. In 1998, the U.S. exported \$3.2 billion of vegetables, melons, pulses, and related seed crops, about 8% of its available supply. This is about the same as 1997 but up from 6% in 1990. After a strong year in 1998, export volume for dry beans has been reduced this year, due largely to a dearth of sales to Mexico and Iraq. After 2 years of decline, the U.S. trade surplus in potatoes increased nearly 7% in 1998 to \$388 million. Total U.S. potato exports were valued at \$757 million in 1998, compared with imports of \$369 million. Imports of fries from Canada continued to grow, but were more than offset by increased exports of potato chips (up 52% in value to \$247 million) and fries (up 8% to \$324 million) in 1998.

Mexico continued to be the leading foreign supplier of vegetables, melons, pulses, and seed to the United States in 1998. Imports from Mexico increased 22% to nearly \$1.9 billion in 1998, caused largely by weather-reduced domestic vegetable supplies which raised prices and increased import demand. While imports from Mexico increased 10% to \$567 million, fresh market bell pepper imports increased 32% to \$172 million in 1998. The value of vegetables imported to the U.S. from Canada has risen annually for 6 consecutive years. In 1998, the value of imports increased 28% to \$713 million. Two crops, potatoes and tomatoes, and their products account for about two-thirds of U.S. vegetable imports from Canada. In 1998, frozen french-fried potatoes (\$224 million), fresh market tomatoes (\$101 million), fresh potatoes and potato seed (\$95 million), and processed tomato products (\$30 million) were the leading imports. Like tomatoes, bell peppers (\$31 million) are also largely grown in hothouses, and shipments to the United States have been rising. Figures 9-6 and 9-7 show the U.S. export and import values for fresh and processed vegetables in 1998.



Source: Foreign Agricultural Trade of the United States, FATUS, Economic Research Service, USDA

FIGURE 9-7. U.S. IMPORT AND EXPORT VALUES OF FRESH VEGETABLES, 1998



Source: Foreign Agricultural Trade of the United States, FATUS, Economic Research Service, USDA:

Outlook

Although this year's weather posted challenges for growers, overall the weather did not have a strong impact on the supply of most New York produced vegetables. The processed vegetable market is stable. There is no push for higher demand for processed vegetables. Trade continued to play an increasingly large role in the U.S. vegetable industry. Competition is expected to grow as ample supplies from western states and Canada continue to be available.

Consolidation in the retail and food service industries, global trade and treaties, and higher production costs are some factors that continue to drive up the competitive stake of New York vegetable producers. In addition, the risk that growers and marketers face in terms of unpredictable weather conditions, market supply, media attitudes and government regulations has not decreased. The use of risk management tools will become more important for New York vegetable producers and marketers. The industry will become even more diversified. More producers will consider adopting alternative production systems (organic, sustainable, hydroponic, greenhouse, irradiation) and emerging marketing systems (slotting fee, direct marketing, e-commerce).

Produce suppliers need to become more customer-oriented and provide tailored products and services to their customers regardless of season or unplanned event. Value-added is the key to finding profitability in the supply chain. The value-added may be in the manner of processing or in selection, quality, packaging, or communication systems. The industry needs to take advantage of the progress in information technology to conduct transactions, provide services, enhance communications with buyers and suppliers, and improve management.

The New York vegetable industry has formed the New York Vegetable Research Council and the New York Vegetable Research Association. These organizations will channel funds from growers and processors to support research efforts to improve the viability of the New York State vegetable industry. The New York Crop Research Facility was established in Batavia, New York, in 1999 to support applied crop research. The increased support from the industry on research will no doubt enhance the research effort on New York vegetables.