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OUTLOOK FOR VEGETABLES

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Overview

Vegetable Output and Prices Strong in 1989

U.S. vegetable production for 1989 likely will top the drought-reduced level of 1988, largely due to a 29-percent increase in processing tonnage and a 3-percent gain in potato output (table 1). Processing vegetable output is estimated at nearly 15 million tons, while potato output is estimated at 367 million cwt. Output of fresh vegetables, mushrooms, sweetpotatoes, and dry edible beans are expected to rise 1, 14, 7, and 25 percent, respectively.

Despite the strong increase in U.S. vegetable output, the value of all U.S. vegetable imports likely will rise by about 5 percent to a record level. Growth in imports during 1989 stemmed from strong prices at the wholesale and retail levels, combined with continued strong consumer demand. Most of the imports are fresh vegetables, which enter the United States during the winter months when U.S. production is limited to the southern-tier States.

Even though U.S. vegetable prices were strong in 1989, foreign demand increased and likely will boost export value nearly one-tenth from the \$1.4 billion of a year earlier. This level is near the record high of 1981, though successive declines in the following years resulted from severe underreporting at the U.S.-Canadian border, which receives the bulk of U.S. fresh exports.

Vegetable Use Grew in 1980's; More Expected in 1990's

Domestic per capita use of total vegetables rose to an estimated 336 pounds in 1988 from 335 the previous year, despite drought-reduced supplies (table 2). In general, increases in fresh vegetables, potatoes, and mushrooms offset declines in the processing sector.

Fresh vegetable use reached 100 pounds per capita for the first time because of higher lettuce and onion use. Increased supply from U.S. production and imports of lettuce completely offset higher exports. Lettuce use grew as demand expanded for such value-added products as shredded and prepackaged lettuce. Onion use rose as 1988 output set a new record of 48 million cwt, with much of the additional supply going to the foodservice market.

Recent results from the Fresh Trends '89 survey (conducted by Vance Research Service) indicate that consumers are concerned about health and nutrition and highly correlate good health and nutrition with eating fresh vegetables. The respondents indicated that they were eating more fresh vegetables at the expense of canned and frozen vegetables. They tended to eat fresh vegetables over processed because of better quality of vegetables are now available, more kinds of vegetables are available, and items can be microwaved. These results indicate that fresh vegetable consumption will likely continue to outpace process consumption in the 1990's, unless consumer's confidence about the safety of the fresh supply is shaken.

Potato use rose from 49 pounds in 1987 to 55 pounds in 1988. This gain can be attributed entirely to large carryover stocks of fresh potatoes. Use of frozen potatoes dropped 4 percent to 44 pounds as record exports reduced the domestic supply.

What is Ahead for the Vegetable Industry in the 1990's

Vegetable growers have benefited during the 1980's from increasing output and strong demand, yet the 1990's are likely to pose a challenge to growers. The major issues are food safety, farm labor, chemical availability, and water quality. Each of these issues could have a negative impact on the supply of vegetables which would increase the cost to consumers. Already, research in these areas portends a brighter outlook for the quality of vegetables reaching the market in the 1990's.

The issue of food safety has come to light more for fresh vegetables than processed and has shaken consumer confidence about fresh vegetables. One apparent difference between fresh and processed vegetables is the existence of strict food labeling laws for the processing sector. As such, the fresh vegetable industry has been busy introducing its own labels like Organic, Low-input, IPM, and Natural. This recent proliferation of labels has placed an overwhelming amount of information in front of the consumer. Producers and retailers are trying to tell consumers what quality is and in fact only further clouding the issue.

Consumers want to know more about the fresh vegetables they purchase and a recent survey indicates that they are likely to pay more money for products which are clearly and simply identified. Consumers probably would be receptive to a choice in available vegetables, whether it be pesticide-free or simply pesticide-residue free.

Current legislation is at both the Federal and State level to enhance the quality of the food supply. Several of the important pieces of legislation are:

- The Food Safety Amendment of 1989 would replace EPA's current method of assessing both risks and benefits of a pesticide with a risk-based standard.
- The Comprehensive Food Safety Inspection Act of 1989 would consolidate food inspection functions under USDA.
- A new California Department of Food and Agriculture program, scheduled to go into effect January 1, 1990, would require growers to report all pesticides used on crops, rather than just the 50-60 chemicals whose use is restricted in California.
- o A California voter initiative on pesticides for the 1990 ballot. This is a sweeping initiative, which among other goals contains language to phase out many "suspect" pesticides and revise (lower) pesticide standards to "protect children's health."

As food safety issues have dominated the public's attention during the last few years of the 1980's, farm labor availability likely will dominate grower's attention during the 1990's. The enactment of the Immigration Reform and Control Act of 1986 and recent passage of the higher Federal minimum wage rate legislation is forcing growers, especially those with seasonal labor, to review their farm labor policies.

Fresh vegetable production is more dependent on seasonal farm labor than processing vegetables, potatoes, and dry edible beans. Thus fresh vegetable producers would likely feel the greatest impact from either higher wage rates or higher costs associated with maintaining the labor supply.

Already many fresh vegetable growers sense that they are going to face some type of labor shortage as newly legalized workers are enticed off the farm. Illegal or undocumented seasonal workers may not be as readily available with labor shortages in Mexico reducing the flow of these workers into the United States. U.S. vegetable growers are employing labor incentives such as charging nominal rates for housing, providing health-care benefits, and offering free day-care for employees' children.

In 1988, EPA revised the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in order to speed up the review of older chemicals at the chemical manufacturer's expense. Because vegetables are considered "minor use" crops by the chemical companies, previously registered herbicides, fungicides, and insecticides may be dropped. The list of chemicals already dropped by companies is growing, indicating the trend to come.

Vegetable growers will be faced with tough choices in the 1990's regarding their cultural practices. Research efforts have recently focused on the use of alternative production methods. Alternative production practices includes integrated pest management (IPM), low input sustainable agriculture (LISA), or organic production methods.

Legislation is in place, re-registration of pesticides by the Environmental Protection Agency, to reduce the number and amount of chemicals which are used on vegetables. However, policy

oriented towards research in the area of low input agriculture has been a bit slower in the offing.

Environmental concerns have also focused attention on the quality of irrigation run-off water as it impacts aquatic animal and vegetative life. Vegetable growers are by far the heaviest users of irrigation, along with fruit growers, and will be forced to address the issue of how to dispose of waste water in the 1990's. Short-term solutions have been to install on farm evaporation ponds. However, as growers change cultural practices because of less chemicals used, some improvement will obviously be transferred to the quality of waste water.

Vegetable Trade Deficit Likely to Narrow in 1990's

The value of all vegetable imports during the 1980's rose nearly 8 percent per year, while exports rose 2 percent per year. Deterioration in the reporting of exports to Canada has shadowed much of the growth in U.S. fresh vegetable exports which are shipped primarily to Canada. The value of Canadian vegetable imports, however, rose 6 percent per year between 1983 and 1988 and was, on average, double the value of U.S. vegetable exports. Changes in reporting of exports is expected to correct much of the discrepancy between the two major trading partners. Accurate U.S. export statistics, the lowering of trade barriers resulting from the U.S./Canada Free Trade Agreement, and strong offshore demand for U.S. frozen potatoes are all expected to have a positive impact on the U.S. vegetable trade deficit.

The United States imports the majority of its vegetables from Mexico. During the 1980's, the mix of vegetables imported changed. The traditional vegetable imports have been the 6 winter fresh vegetables (snap beans, cucumbers, eggplant, bell peppers, squash, and tomatoes) which enter during the October-June period. However, Mexico has diversified its product mix and extended its export season. Mexico now is an important supplier of frozen broccoli, cauliflower, and okra, fresh bulb and green onions, and processed tomatoes.

Interestingly during the second-half of the 1980's Mexico's economy rebounded, as the peso stabilized relative to the U.S. dollar, and Mexicans expanded their taste for U.S. vegetables. The value of U.S. vegetable exports to Mexico in 1989 likely will reach \$18 million, a twofold increase from 1988. The major vegetable exports to Mexico are fresh potatoes, celery, onions, tomato sauce, and canned sweet corn.

Mexico is likely to grow in the 1990's as an importer of U.S. vegetables. The influx of U.S. investment in major vegetable packing and processing facilities has given many potential emigrants local jobs and boosted the local economy. The expansion of vegetable acreage during the late 1980's in new regions of Mexico has increased the demand for workers and has caused farm wages to rise in Mexico. Wages are likely to continue to rise in Mexico and reduce the number of workers available to the U.S. vegetable industry. During the 1990's Mexico is likely to face rising wage rates, which narrows its competitive position with the United States, though U.S. farm labor supplies likely will remain ample due to the pool of illegal workers.

Trade between the U.S. and Canada will also increase during the 1990's. Increased U.S. vegetable exports to Canada is expected to result from the Free Trade Agreement, but Canadian exports of vegetables to the U.S. will also increase. The scenario between the United States and Canada may unfold to mirror the recent developments in trade between the U.S. and Mexico and the United States and several South American countries. The key to changes in trade will be the opening up of investment opportunities between the two countries.

Foreign demand for frozen french fried potatoes during the second half of the 1980's has significantly improved the vegetable trade deficit. The United States remains a net exporter of processed potatoes, as 1989 exports of frozen potatoes through August ran 22 percent ahead of the same period last year. Japan, the largest importer, accounted for three-quarters of U.S. frozen potato exports in 1988.

The 1990's may see relative shifts in trade flows of U.S. imported vegetables. Trade barriers are likely to be relaxed due to existing bilateral agreements, like the U.S./Israel accord and the signing of multinational agreements like the General Agreement of Trade and Tariffs. Shifts in suppliers of U.S. vegetable imports have already transpired for both processed tomatoes and canned mushrooms.

Canned mushrooms are by far the most important category of mushroom imports, and made up 98 percent of total mushroom imports in 1988. Although the volume of canned imports is overwhelming, advances in technology and strong demand have substantially boosted fresh and frozen mushroom imports in the last 10 years.

Although canned mushroom imports from China accounted for 48 percent of the 1988 U.S. total, the United States halted these imports in October 1989 because of bacteria. Supplies of canned mushrooms for the remainder of 1989 are therefore likely to tighten somewhat, though U.S. production of processing mushrooms rose 13 percent for the 1988/89 season.

Commodity Outlook

Fresh Vegetable Acreage in 1989 Up Slightly

Based on seasonal harvested acreage estimates for the major fresh vegetables (asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, tomatoes, and honeydews), total acreage likely will rise 4 percent to 1.2 million acres, compared to 1.1 million harvested acres in 1988. Vegetable growers were hit early in the year with heavy rains then a freeze in Florida, followed by continued hot and dry weather in the West but excessive moisture in the East. Stronger grower prices for most major fresh vegetables resulted from a succession of weather-induced effects on seasonal yields. Lower domestic shipments of cabbage, cucumber, lettuce, and tomatoes during 1989 were offset by higher shipments of cantaloup, watermelon, carrots, celery, and onions.

Preliminary ERS estimates of 1989 vegetable production for the 10 major fresh vegetables places the total at 253 million cwt, up 1 percent from 1988 (table 1). ERS projections for fresh vegetable production through 1995 call for trend increases of about 2 percent per year. This increase reflects continued strong per capita disposable incomes, and population growth.

The index of prices received by fresh vegetable growers is expected to rise 8-10 percent this year compared with 138 (1977=100) in 1988. Much of the increase in vegetable prices is attributable to the adverse weather during the year. However, some of the increase can be explained by stronger demand at the foodservice level for value-added vegetables, like shredded lettuce. As growers look into the 1990's, prices are likely to remain favorable due to the continued growth in value-added produce, increased exports and the potential shifts in supply locations due to chemical restrictions. However, several factors having price depressing effects may include increased import competition and the over-saturation of the organic vegetable market.

As grower prices rose during 1989, the retail price index for fresh vegetables, including potatoes, also rose 10-12 percent compared to 129 (1982-84=100) in 1988. Higher retail prices resulted mainly from rising grower level prices, but retailers were faced with stronger foodservice demand which bid away potential supply. Retail prices for fresh vegetables increased more than overall food prices, which are expected to rise nearly 6 percent in 1989. Retailers' costs of goods increased due to stronger foodservice demand, higher packaging costs, higher advertising costs, and higher labor costs. Factors further increasing retail prices during the next decade will be the rising costs of labor and transportation.

Record Contracted Processing Production in 1989

Processors faced nearly depleted inventories this season from drought-reduced pack in 1988. Consequently, contract intentions and production reached a record 15 billion tons in 1989, up 29 percent from last year. Processing tomatoes, the volume leader in the processing vegetable industry, realized a 31 percent in production. However, snap bean output soared 51 percent to .8 million tons, sweet corn rose 25 percent to 3 million tons, and green peas jumped 60 percent to half a million tons. The drought was the most important determinant in acreage expansion, however, the processing tomato industry is in the midst of an demand expansion in the fast-food sector. In addition, the canning vegetable industry has made great strides to recapture market share in processed vegetable consumption by introducing microwavable "canned" vegetables.

Research of at-home-food consumption indicated that the microwave has also played a key role in expansion of frozen vegetable consumption. Even though at-home-food consumption is not growing as fast as away-from-home food consumption, the technological innovations by the canning industry to penetrate the upscale-convenience at-home market will continue in the 1990's.

Processed vegetable growers received significantly higher contract prices in 1989 as processors were faced with attractive prices for competing agricultural crops and the need to rebuild

depleted inventories. Contract price increases combined with larger production will boost the cash receipts of processed vegetable growers for the year.

Prices of processed vegetables at the retail level also increased, likely rising 11 percent for 1989 from 112 (1982-84=100) in 1988. Retail prices for both canned and frozen vegetables rose only slightly in the third quarter as expectations of larger packs surfaced. However, prices inched higher during the fall, likely rising 1-2 percent for the fourth quarter. Higher prices returned as the retail supply of several vegetables continued to remain short, particularly processed tomato products, and untimely rains and the earthquake hit California during the final weeks of the processing tomato harvest causing some yield reduction.

Strong Potato Prices during 1988/89 Bring Modest Production Increase

Total 1989 potato production rose 3 percent to 367 million cwt from last year's drought-reduced level. Modest increases in production were seen during the winter, spring, and summer seasons. First indications of the fall output place it 3 percent above last fall's 314 million cwt and below what traditionally has been seen during a year of strong prices. Typically potato growers increase production more than the given potato price increase. However, grower prices for potatoes rose 47 percent during 1989 but production rose just 3 percent. Production of fall potatoes was lower than expected as competition for competing crops was very strong. Bad weather in the Red River Valley, Idaho, and Washington reduced fall output in regions heavily devoted to processing. Processors already faced short supplies of frozen and chip stock.

As processing demand will remain strong in the 1989/90 season and 1989 fall output only rose moderately, prices of potatoes at all levels will remain strong. Grower prices for the 1989/90 season likely may average near the \$6.02 per cwt of the 1988/89 season. Other price enhancing factors will be continued strong export demand for frozen potatoes and strength in the fresh market prices.

Dry Edible Bean Output Rebounds in 1989

Estimated 1989 dry edible bean production was 25 percent higher than last year's drought-reduced crop of 19 million cwt. Even though production rose, prices appear to be holding during the first-quarter of the 1989/90 season as stocks were depleted and demand remained firm. Grower prices for the 1989/90 season likely will average one-fifth lower than the \$30 per cwt for the previous season. Production estimations for the next decade portend a yearly increase of about 1 percent. Factors influencing increased production are stronger demand for high nutritional commodities and increased diversification of program farmers who have expertise in bean production.

U.S. exports of pintos and black beans may continue strong through 1989 because of low South American supplies. Indeed, this shortage may even boost exports of great northerns and other white beans. Also Brazil has exempted dry beans from duties, which could lead to U.S. export gains. Exports of dry beans have not been predictable during much of the 1980's with

exports rising when South or Latin American countries have supply shortages. However as Mexico has entered the GATT and agreed to a bilateral agreement with the United States, the 1990's may provide more consistent U.S. exports of dry beans.

Organic Vegetable Production Likely to Increase in 1990's

Even though no national estimates for organic production exist, concerns about the safety of produce have lead to increased supply. Based on information obtained from national organic wholesalers much of the supply originates in California, though the continued strong price differential between organic and non-organic has stimulated growers in other areas to allocate acreage to organic. Price differentials between organic and non-organic vary considerably according to the Organic Market News Information Service (OMNIS).

Price differentials vary because of the wide range in input costs associated with organic production. Organic vegetables can be grown using high input organic techniques--applying organic pesticides--to low input organic techniques which would not require schedule applications of pesticides. Input costs under the high input techniques would logically be greater than the low input technique, however research results from a study done in California showed that high input techniques kept yields close to conventional yields while low input techniques severely reduced yields. Thus as demand increases for organic vegetables, growers are going to likely choose techniques which keep yields high in order to maximize returns.

Organic production of vegetables in the 1990's likely will increase to fill market niches, however, organic production will by no means supplant the entire market for fresh vegetables. As market niches become saturated and legislation is enacted to standardize organic production and labeling requirements, price differentials between organic and non-organic vegetables will likely be minimized.

Variable name	Units			1988					1989			Percent
	•• ••	οI	011	0111	۷۱۵	Annual 1/	Ισ	011	0111	۷۱۵	Annual 1/	1989/1988
Potatoes 2/ \$/cwt	\$/cut :	3.81	4.33	5.21	5.29	6.02	6.67	31.97	7.75	5.50	6.50	8%
Commercial vegetables, Prices received index	1910-14=100	806	611	703	869	705	823	834	402	618	972	%9
Fresh vegetables, Prices received index	1977=100	165	112	139	138	138	163	154	139	148	151	*6
Fresh vegetables price indices Fresh vegetables 1982=100 Potatoes 1982=100 Canned vegetables 1982=100	dices	110 104 103 107	91 112 103	101 113 110	101 103 116 112	100 108 108	108 164 119 114	122 155 119 115	96 147 119 116	100 134 115	106 150 118 115	%% %% %%
Fresh vegetables 1982-Potatoes Processed vegetables 1982-Potatoes 1982-Processed vegetables 1982-Processed vegetables 1982-Processed vegetables 1988-Processed vegetables 1988	lices	134 106 108	125 116 109	128 128 114	130 127 118	129 119 112	142 139 122	149 165 125	143 172 126	138 152 125	143 157 124	11% 32% 11%
Total vegetables 3/ Fresh vegetables Processed vegetables Mushrooms Potatoes Sweetpotatoes Dry edible beans	1000 cut 1000 cut 1000 cut 1000 cut 1000 cut 1000 cut					254,278 249,730 227,409 6,317 356,438 11,832					259,329 253,476 292,645 7,227 367,280 12,716 23,991	~

1/ Annual prices for potatoes and dry edible beans are season average for crop year. 2/ Calendar quarters and season average. 3/ Includes fresh and processed.

Source: NASS, USDA; BLS, USDC; and ERS, USDA.

Table 2.--Vegetables, commercially produced: Total U.S. per capita utilization, 1970-88

Ory peas & lentils

Fresh Processing

Total

potatoes

Other

chips 5/

Fresh Freezing

Total

Vegetables
Fresh Canning Freezing

fresh and processed

total

Year

Potatoes

Sweet

Mushrooms

	0.5 1.1 0.4	1.4	1.5	1.6	1.6	1.6	1.4 1.4 0.4	1.7	1.5	1.8	1.7	1.7	1.7	1.5
	1.6	2.1	2.4	2.6	2.7	2.8	2.8	3.1	3.1	3.6	3.5	3.6	3.6	3.5
	5.0						4.8				,		•	,
	16.5 15.3						16.8 12.4	•		•		•		
гm-weight	31.4	39.4						•	•		`	•		
person, farm-weight	55.1	7.67	50.1	46.1	9.64	51.1	45.7	9.94	6.64	48.8	46.6	9.65	48.4	54.6
Pounds per p	118.3	122.8	121.8	120.2	119.0	116.0	112.7	114.9	118.1	119.2	121.3	126.0	124.0	127.3
_	13.7	13.9	15.4	14.3	15.0	14.4	14.7	13.5	14.5	17.5	17.2	15.8	16.8	17.5
	92.0	94.1	92.1	87.0	91.2	9.06	80.0	78.9	79.6	85.2	87.5	87.6	87.0	85.8
	72.3	75.3	75.2	76.5	79.1	80.5	79.3	82.3	82.5	87.6	88.0	95.3	98.5	100.3
	177.9	183.3	182.7	177.8	185.3	185.5	174.0	174.7	176.6	190.3	192.7	198.7	202.3	500.6
	303.2	314.0	312.0	306.0	312.6	309.2	294.7	298.6	302.9	318.5	323.4	333.2	334.8	336.2
	1970-75	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988

1/ Includes asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, onions, tomatoes, and honeydews. 2/ Includes aparagus, snap beans, carrots, sweet corn, green peas, pickles, and tomatoes. 3/ Includes aparagus, snap beans, broccoli, carrots, cauliflower, sweet corn, green peas. 4/ Use estimates adjusted due to previous error in calculation. 5/ Includes chip and shoestrings, and canning. 6/ Includes canning and dehydrating. 7/ Use estimates now include feed, seed, home use, and shrinkage. 8/ Includes canning, freezing, and dehydrating.

Source: Economic Research Service, USDA.

Table 3.--Vegetable, potato and dry edible bean prices and indices, selected years

I tem	••	Unit		1970	1975	1980	1985	1986	1987	1988	1989f	1990f
Grower prices:	••		••									
Fresh	••	1977=100	••	26	88	110	122	123	147	138	151	147
Commerical	••	1977=100	••	103	164	196	129	130	144	144	156	155
Potatoes		\$/cwt		2.21	4.48	6.55	3.92	5.03	4.38	6.02	6.50	4.80
Dry beans	••	\$/cwt		9.21	21.10	27.60	17.60	19.10	16.50	30.30	24.00	23.00
	••											
Wholesale prices:	••											
Fresh	••	1982=100	••	55.1	84.5	84.3	100.3	7.66	0.66	100.4	106.0	108.7
Potatoes	••	1982=100		41.7	75.6	103.3	101.3	104.1	120.1	108.0	150.0	156.1
Dry beans	••	1982=100		25.7	46.7	81.0	84.8	64.1	78.7	144.5	114.5	141.1
	••											
Retail prices:	••											
Commercial	-	1982-84=100;		39.4	55.6	79.0	103.5	107.7	121.6	129.0	143.0	149.4
Potatoes		: Cents/lb :		38.0	57.7	19.1	20.8	24.1	27.6	26.1	35.2	36.8
Processed	::	782-84=100	<u></u>	36.6	62.2	83.1	104.4	104.2	107.1	112.0	124.2	129.8
	••											

Sources: National Agricultural Statistics Service, USDA and Bureau of Labor Statistics, Department of Labor.