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July 1981

A.E. Res. 81-11

**COST OF
PRODUCTION**
Update
For 1980

**SWEET CORN
for PROCESSING**

FIELD CORN

POTATOES - Long Island

**MARKET CABBAGE -
Packing and Storage Costs**

Darwin P. Snyder

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853

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COST OF PRODUCTION

UPDATE FOR 1980

Contents

	Page
Introduction	i
Procedure.	1
The Growing Season in 1980	2
Processing Sweet Corn - 1980	4
Growing Costs	4
Harvesting Costs.	6
Selling Costs	7
Costs and Returns	9
Previous and Current Studies Compared	13
Another Analysis.	14
Field Corn - 1980.	15
Growing Costs	16
Harvesting Costs.	17
Drying and Hauling Costs.	18
Costs and Returns - 1980 Yields	19
Costs and Returns - Average Yields.	23
Long Island Potatoes	25
Overall Results of the 1980 Study	25
Comparison of 1979 and 1980 Study Results	31
Market Cabbage - Packing and Storage Costs	33

Introduction

The agricultural industry in New York has long benefited from a continuing research project dealing with specific farm enterprise cost and return data. Commonly known as the New York Farm Cost Account project, this program has provided information for livestock and crop enterprises most prevalent in the State. Some crops, however, are not adequately represented in the records kept by the cooperating farmers to provide enough data to be meaningful to the whole industry. These include various crops grown in sufficient volume to merit specific study to maintain up to date cost of production information.

Data for processing sweet corn were collected for the 1980 crop year with the encouragement of a grant from Curtice Burns, Inc., one of the major vegetable processors in the State. At the same time, data were also obtained for field corn enterprises on the farms of the processing sweet corn growers. That effort included comparable data from growers in the major processing sweet corn states of Wisconsin and Minnesota. This publication includes only data for the New York growers. The complete report of that study including results for Wisconsin and Minnesota enterprises is published in The Competitive Position of Processing Sweet Corn in New York State, A.E. Res. 81-1, D. P. Snyder, Department of Agricultural Economics, Cornell University, Ithaca, New York 14853.

Because of the continuing interest in production costs for potatoes on Long Island, data for a second consecutive year were collected in 1980 for that crop. Information for both 1979 and 1980 are compared to provide meaningful insight to the changing economics of potato production on Long Island.

For some time interest from the field has shown the need for information about storage costs for market cabbage on New York farms. Extension agents in western New York enlisted the cooperation of several growers to keep records of their costs for the 1979-80 storage season. The results of this work are summarized in this publication.

Procedure

A group of New York processing sweet corn growers was given the opportunity to participate in the study of production costs and returns for the 1980 season. From that group, 15 growers provided information about their sweet corn enterprise. Thirteen of those growers also provided data about their 1980 field corn enterprise during the same interview. Thus, the data collection for both sweet corn and field corn was obtained at the same time with a minimum of additional effort. The fact that much of the same equipment and similar practices are used to grow both crops contributed to the compatibility of conducting both studies together.

Interviews with Long Island potato growers included the same ten growers that cooperated in the 1979 study plus three additional ones. While most of the producers are located on the North Fork, a few growers from the South Fork were included in the study.

Extension agents in Western New York asked several cabbage growers to keep a record of labor and other costs related to the packing and storing of market cabbage during the 1979-80 storage season. Additional cost information was obtained by interview after the end of the season to complete the data needed to analyse these costs.

Cooperating sweet corn and potato growers provided information about their crop enterprises for the 1980 year during an interview held after the crops were harvested. The questionnaire was designed to determine the grower's cash costs for the crop and to allocate appropriate overhead costs including labor, tractor, equipment, land and other costs related to the producing and disposition of the crop. The approach used relies heavily upon experience with the Cornell Farm Cost Account research project for various cost factors not easily determined in an interview situation and for tests of reasonableness used throughout the study.

A detailed explanation of the procedure and forms used to accumulate crop costs and analyse the enterprises is available in three bulletins published by the Department of Agricultural Economics at Cornell.*

* Enterprise Analysis: A guide for determining Field and Vegetable Crop Costs and Returns, A.E. Ext. 76-4, D. P. Snyder, Department of Agricultural Economics, Cornell University, Ithaca, New York 14853.

Enterprise Analysis: A guide for determining Fruit Crop Costs and Returns, A.E. Ext. 76-5, D. P. Snyder, Department of Agricultural Economics, Cornell University, Ithaca, New York 14853.

Enterprise Analysis: A guide for determining Farm Tractor and Equipment Costs, A.E. Ext. 76-6, D. P. Snyder, Department of Agricultural Economics, Cornell University, Ithaca, New York 14853.

The Growing Season in 1980

Weather has a major influence on crop production in New York State. Even though good cultural practices are followed, good yields are highly dependent upon timing and amount of rainfall, temperatures and length of growing season. The following two tables indicate climatic conditions during the 1980 growing season in several areas of the State.

The growing season for 1980 began with a warm and dry May throughout the State. Good planting conditions in May were followed by a period of cool, wet weather during June. Temperatures and precipitation were quite normal for most areas of the State in July. Most weather stations shown in Tables 1 and 2 indicated hot and dry conditions for the month of August. Normal weather returned for September with both temperature and rainfall near the 30 year averages for the month.

In general, the 1980 growing season resulted in a good crop year with average temperatures and somewhat less than average precipitation.

Table 1. Growing Season Temperature, Degrees F Selected Stations, New York, 1941-70 and 1980

Station	May		June		July		August		September		Growing Season Average	
	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980
Albany	57.7	59.5	67.5	63.3	72.0	72.2	69.6	70.7	61.9	62.6	65.7	65.7
Alfred	54.6	54.9	63.5	59.1	67.0	67.5	65.2	68.2	58.9	60.2	61.8	62.0
Aurora		57.7		61.9		69.0		71.3		62.5		64.5
Batavia	55.8	58.5	65.9	62.5	69.7	70.9	67.9	71.8	63.9	62.4	64.6	65.2
Binghamton	55.1	58.8	64.8	62.0	69.1	70.4	67.3	70.6	60.2	62.2	63.3	64.8
Canton	54.8	54.8	64.7	60.2	69.2	68.9	67.0	68.5	59.3	57.2	63.0	61.9
Glens Falls		57.0		61.2		69.9		69.5		59.6		63.4
Ithaca	55.2	56.0	65.0	61.4	69.4	68.7	67.5	70.1	60.7	61.6	63.6	63.6
Lowville	54.6	56.6	64.2	59.9	68.3	68.1	66.2	69.1	59.3	57.8	62.5	62.3
Utica		59.0		60.2		69.9		70.7		60.6		64.1

Source: Climatological Data; NOAA, Environmental Data Service, Monthly Reports, New York, 1980, Vol. 92, Nos. 5 to 9.

Table 2. Growing Season Precipitation Selected Stations, New York, 1941-70 and 1980

Station	May		June		July		August		September		Growing Season Average	
	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980	1941-70	1980
Albany	3.26	1.05	3.00	4.90	3.12	2.69	2.87	6.45	3.12	2.24	15.4	17.3
Alfred	3.76	1.39	3.76	3.44	3.73	1.16	3.60	5.49	2.93	2.65	17.2	14.1
Aurora	2.98	1.03	2.54	5.63	3.03	3.24	2.81	2.85	2.46	2.87	13.8	15.6
Batavia	3.17	1.70	2.69	8.01	3.05	2.31	3.50	1.55	2.87	4.23	15.3	17.8
Binghamton	3.83	1.54	3.59	5.68	3.83	2.09	3.61	1.58	3.02	2.81	17.9	13.7
Canton	3.37	0.93	2.91	2.22	3.43	4.43	3.47	3.35	3.31	4.78	16.5	15.7
Glens Falls	3.63	1.10	3.77	2.92	3.68	2.07	3.42	1.94	3.31	2.99	17.8	11.0
Ithaca	3.55	1.37	3.40	4.13	3.67	3.43	3.49	1.98	3.08	2.21	17.2	13.1
Lowville	3.42	1.98	2.94	3.89	3.26	6.42	3.58	1.07	3.31	3.49	16.5	16.9
Utica	3.52	1.37	3.55	4.56	4.17	5.26	3.54	1.47	3.32	2.41	18.1	15.1

Source: Climatological Data; NOAA, Environmental Data Service, Monthly Reports, New York, 1980, Vol. 92, Nos. 5 to 9.

PROCESSING SWEET CORN - 1980

Sweet corn for processing continues to occupy the second largest acreage of processing vegetables in the State. This acreage has increased from about 13,000 acres a decade ago to about 20,000 acres currently - about one fourth of New York's processing vegetable acreage.

Nationally, the State has ranked seventh for several years in terms of harvested acreage and production of sweet corn. Yields of processing sweet corn in New York have competed favorably with the major producing states with the exception of the irrigated areas of the northwestern states.

In 1980, New York growers planted 17,900 acres and harvested 17,000 acres of processing sweet corn. Sweet corn acreage was down 17 percent or 3,700 acres from the year before. Although the yield was below 1979's yield, production per acre was 23 percent above the 1976-80 five year average of 4.4 green tons per acre.

The following analysis of 1980 processing sweet corn enterprises is based on information obtained from 15 western New York producers located in Genesee and adjacent counties. Interviews were held with each grower during October. In addition to the 1980 analysis, this report will include some comparisons with results from the previous study for the 1976 crop.

Growing Costs -

Costs to grow processing sweet corn in New York State during 1980 are summarized in Table 1. As indicated, these 15 farms grew an average of 111 acres of sweet corn which yielded an average of 5.4 tons per acre of corn in the husk. Acreage was evenly distributed within the range of 44 to 350 acres per enterprise.

Each of the cost items listed in Table 1 includes all of the fixed and variable costs inherent to the item. Labor costs include employers' costs for worker's compensation, Social Security and fringe benefits as well as cash wages. Tractor and equipment costs include depreciation, interest, fuel, repairs and insurance, etc. Land costs are an average of the costs of owned land and rented land as experienced by these growers.

Table 1. SWEET CORN FOR PROCESSING
 Growing Costs
 1658 acres on 15 Farms
 New York, 1980

Item	Rates per acre	Cost	
		Per Acre	Per Ton*
Number of farms			15
Acres per enterprise			111
Yield per acre planted, green tons			5.4
Labor	2.0 hr	\$ 12	\$ 2.17
Tractor	1.9 hr	14	2.50
Equipment, large trucks		15	2.71
Custom work, equipment rent		1	.27
Land use		45	8.19
Lime, cover crop, manure		3	.61
Fertilizer: lbs. N-105, P-67, K-84		46	8.43
Seed 9 lbs.		13	2.45
Chemicals		13	2.40
Interest on operating capital		4	.73
All other		3	.61
Total growing costs		\$169	\$31.07

* Green tons

The total growing costs for processing sweet corn averaged \$169 per acre. With the 1980 yield averaging 5.4 green tons per acre, growing costs amounted to \$31 per green ton. Direct costs for fertilizer and chemicals cost the grower a total of \$59 per acre - one-third of the total cost.

Harvesting Costs -

Only one-third of the growers surveyed owned harvesters. The other ten growers made arrangements to have their sweet corn crop harvested by a custom operator. Table 2 contrasts the harvesting costs for these two groups. Total harvesting costs per acre were essentially the same for both groups at \$27 per acre.

Table 2. SWEET CORN FOR PROCESSING
Harvesting Costs
1658 acres on 15 Farms
New York, 1980

Item	Owned Equipment	Custom Harvest
Number of farms	5	10
Acres per enterprise	174	79
Yield per acre planted, green tons	5.9	4.9
	- cost per acre -	
Labor	\$ 3.07	\$.23
Tractor	.17	.38
Equipment	22.81	--
Custom harvest	--	25.77
All other	<u>1.56</u>	<u>.35</u>
Total harvesting costs	\$27.61	\$26.73
	- cost per green ton -	
Labor	\$.52	\$.05
Tractor	.03	.08
Equipment	3.87	--
Custom harvest	--	5.26
All other	<u>.26</u>	<u>.07</u>
Total harvesting costs	\$ 4.68	\$ 5.46

Growers that owned harvesters had sweet corn enterprises that averaged 174 acres each. All but one of the five growers in this group depended on custom harvesting to help bear the fixed ownership costs of the equipment. Except for one six row harvester, all the harvesters were four row machines having an average original new cost of about \$38,000 each. Equipment costs for those who owned harvesters averaged \$23 per acre. Labor and other costs to harvest the crop brought the total harvesting costs to \$27.61 per acre compared to \$26.73 per acre for crops that were harvested by custom operators.

Selling Costs -

Selling costs for processing sweet corn are composed mainly of the cost to haul the crop to the processor. However, because of delayed payment schedules, interest was charged as a selling cost on the portion of the crop proceeds carried by the grower as an accounts receivable.

Table 3. SWEET CORN FOR PROCESSING
Selling Costs
15 Farms, New York, 1980

Item	Cost	
	Per Acre	Per Green Ton
Number of farms		15
Acres per enterprise		111
Yield per acre planted, green tons		5.4
Green tons hauled		9,027
Labor	\$ 2.73	\$.50
Truck	8.62	1.58
Custom haul	<u>8.89</u>	<u>1.63</u>
Total hauling costs	\$20.24	\$3.71
Interest on accounts receivable	<u>6.90</u>	<u>1.27</u>
Total selling costs	\$27.14	\$4.98

Item	Own Haul	Custom Haul
Number of farms	9*	9*
Green tons hauled	6,170	2,857
	- cost per green ton -	
Labor	\$.73	--
Truck	2.32	--
Custom haul	<u>--</u>	<u>\$5.16</u>
Total hauling cost	\$3.05	\$5.16

* Three growers hired some custom hauling to supplement their own trucks.

Table 3 indicates the hauling and interest costs experienced by these growers in 1980. Interest on accounts receivable amounted to nearly one-fourth of the total selling costs and averaged \$6.90 per acre or \$1.27 per green ton. Hauling costs totalled about \$20 per acre or \$4 per green ton. Thus, total selling costs were \$27 per acre or \$5 per green ton.

Over two-thirds of the sweet corn produced was hauled by the growers. In general, growers hauled their own sweet corn for about \$2 per ton less than custom haulers as shown in the lower half of Table 3. Even so, growers with relatively little use for a large truck can wisely employ a custom hauler and, in the process, avoid unnecessary investment and benefit from additional help during a busy harvest season.

Costs and Returns -

With growing costs of \$169 and harvesting costs of \$27 per acre, production costs for processing sweet corn in 1980 averaged \$196 per acre for these 15 growers. Adding to that figure the selling costs of \$27 per acre brings the total cost to produce and market sweet corn to \$223 per acre or \$41 per ton (Table 4). All costs are covered including a cost for the operator's labor and management chargeable to this crop.

Table 4. SWEET CORN FOR PROCESSING
Costs and Returns
15 Farms, New York, 1980

Item	Cost or Return	
	Per Acre Planted	Per Green Ton
Number of farms		15
Acres per enterprise		111
Yield per acre planted, green tons		5.4
Costs to: Grow	\$169	\$ 31
Harvest	<u>27</u>	<u>5</u>
Produce	\$196	\$ 36
Sell	<u>27</u>	<u>5</u>
Total costs	\$223	\$ 41
Returns	\$263	\$ 48
Profit	\$ 40	\$ 7
Return per dollar of cost		\$1.18

Returns to these New York growers averaged \$48 per green ton delivered to the processor. With yields averaging 5.4 tons per acre, total returns averaged \$263 per acre. These returns are based on estimates of the cooperative's final commercial market value for sweet corn adjusted for various quality factors. No attempt has been made to include an estimate of retained earnings that might accrue to the 1980 crop.

Although six of the 15 growers' enterprises showed losses on sweet corn, the group as a whole received a profit of \$40 per acre or \$7 per ton. Expressed another way, these growers received an average return of \$1.18 for each dollar of cost on their sweet corn enterprise.

Selected Factors -

The following three tables contain summary and analysis data for all 15 sweet corn enterprises in the study for 1980. Table 7 provides a listing of selected factors for each enterprise to illustrate ranges and variations between enterprises.

F A C T O R S

C R E D I T S

DEBITS	QTY	UNIT	TOTAL COST/ACRE \$	QTY	UNIT	TOTAL
GROWING COSTS - OPER 1:						
1. LABOR	3,276	HR	19,562	9,027	IN	436,669
2. TRACTOR	3,116	HR	22,547			
3. TRUCK			557			
4. EQUIPMENT			23,937			
5. CUSTOM WORK, EQUIP. RENT			2,456			
6. LAND USE			73,921			
7. MANURE, COVER CROPS	3,273	2				
8. LIME	1,522	1				
9. FERTILIZER - N*173,910 LB						
10. P*111,173 LB						
11. K*139,683 LB			76,080			
12. SEED, PLANTS	14,752	LB	22,129			
13. SPRAY, DUST MATERIALS			21,620			
14. INTEREST			6,630			
15. ALL OTHER			5,498			
HARVESTING COSTS - OPER 2:						
16. LABOR	448	HR	2,850			
17. TRACTOR	50	HR	445			
18. TRUCK			0			
19. EQUIPMENT			19,845			
20. CUSTOM WORK, EQUIP RENT			20,308			
21. ALL OTHER			1,637			
STORING & SELLING COSTS - OPER 3:						
22. LABOR	758	HR	4,522			
23. TRACTOR, TRUCK			14,288			
24. EQUIPMENT			0			
25. BUILDING USE			0			
26. INTEREST			11,434			
27. ALL OTHER CUSTOM HAUL			14,742			
28. TOTAL COSTS			\$370,503			
29. GAIN			66,166			
30. TOTAL DEBITS			\$436,669			

AVERAGE PER ACRE

J. YIELD	(31/A)	5.4	TN
K. FERTILIZER - N	(9/A)	105	LB
L. P	(10/A)	67	LB
M. K	(11/A)	84	LB
N. SEED, PLANTS	(12/A)	9	LB
O. GROWING COST	(8/A)	\$	169
P. HARVESTING COST	(C/A)	\$	27
Q. PRODUCTION COST	(0+P)	\$	196
R. TOTAL COSTS	(28/A)	\$	223
S. TOTAL RETURNS	(34/A)	\$	263
T. PROFIT	(S-R)	\$	40
U. LABOR TO: GROW	(1/A)	2	HR
V. HARVEST	(16/A)	0	HR
W. PRODUCE	(U+V)	2	HR
X. LABOR RETURNS	(I/A)	\$	56
Y. TRACTOR: GROW	(2/A)	2	HR
Z. HARVEST	(17/A)	0	HR

AVERAGE PER UNIT

AA. GROWING COST	(8/31)	\$	31
BB. HARVESTING COST	(C/31)	\$	5
CC. NET** PRODUCTION COST (D-32)/31		\$	36
DD. STORE & SELL COST (E/31)		\$	5
EE. TOTAL COSTS (28/31)		\$	41
FF. NET COST ** (F/31)		\$	41
GG. TOTAL RETURNS (34/31)		\$	48
HH. NET RETURNS ** (34-32)/31		\$	48
II. PROFIT (HH-FF)		\$	7

RETURNS

JJ. PROD / HR OF LABOR (31/(1+16))	2.4	TN
KK. RETURN PER HR OF LABOR (I/G)	\$	20.77
LL. RETURN PER \$ OF COST (34/28)	\$	1.18

* DETERMINED BY COST ACCOUNT STAFF

** VALUE OF BY-PRODUCT DEDUCTED

Table 6.

SWFET CORN- PROC
COSTS AND RETURNS PER ACRE
1,658 ACRES ON 15 COST ACCOUNT FARMS, 1980

ITEM	AVERAGE PER ACRE
<u>COSTS:</u>	
<u>GROWING:</u>	
LABOR 2 HR	\$ 12
TRACTOR 2 HR	14
TRUCK, EQUIPMENT	15
CUSTOM WORK, EQUIP RENT	1
LAND USE	45
MANURE, LIME, COVER CROP	3
FERT - LBS N- 105, P- 67, K- 84	46
SEED, PLANTS 9 LB	13
SPRAY, DUST MATERIALS	13
INTEREST, ALL OTHER	7
TOTAL GROWING COSTS	\$ 169
<u>HARVESTING:</u>	
LABOR 0 HR	2
TRACTOR 0 HR	0
TRUCK, EQUIPMENT	12
CUSTOM WORK, EQUIP RENT	12
ALL OTHER	1
TOTAL HARVESTING COSTS	27
TOTAL PRODUCTION COSTS	\$ 196
<u>STORING AND SELLING:</u>	
LABOR 0 HR	3
TRACTOR, TRUCK, EQUIP	9
BUILDING USE	0
INTEREST, ALL OTHER	15
TOTAL STORING AND SELLING COSTS	27
TOTAL COSTS	\$ 223
<u>RETURNS:</u>	
CROP - YIELD: 5.4 TN	\$ 263
BY-PRODUCT, OTHER RETURNS **	0
TOTAL RETURNS	\$ 263
<u>PROFIT:</u>	\$ 40
AVERAGE	
OTHER FACTORS: COST PER TN TO: GROW	\$ 31
HARVEST	5
STORE AND SELL	5
TOTAL (GR NET*) COST PER TN	41
TOTAL (GR NET*) RETURN ** PER TN	48
PROFIT PER TN	7
LABOR RETURN PER ACRE	\$ 56
PRODUCTION PER HOUR OF LABOR	2.4 TN
RETURN PER HOUR OF LABOR	\$ 20.77
RETURN PER DOLLAR OF COST	1.16

* VALUE OF BY-PRODUCTS, IF ANY, DEDUCTED

** RECEIPTS FROM GOVERNMENT PROGRAMS NOT INCLUDED

Table 7. Sweet Corn for Processing
Selected Factors
New York, 1980
1658 acres on 15 Farms

Farm No.**	Yield per acre tn*	Average per Acre Planted			Average per Ton*		Return per \$ of cost
		Grow cost	Harvest cost	Profit	Cost	Return	
		\$	\$	\$	\$	\$	\$
101	6.2	147	38	87	34	48	1.41
102	5.7	181	14	53	39	48	1.23
103	6.3	186	33	69	39	50	1.28
104	5.2	185	14	32	42	48	1.15
105	4.5	161	26	-1	48	48	1.00
106	5.3	162	35	35	40	47	1.16
107	4.1	183	22	-29	56	49	0.87
108	4.6	177	22	-4	50	49	0.98
109	6.4	141	27	123	30	50	1.63
110	3.9	179	21	-37	57	47	0.83
111	3.6	148	25	-22	54	47	0.89
112	5.7	215	30	-9	50	48	0.97
113	5.0	152	22	33	41	47	1.16
114	5.3	159	30	29	40	45	1.13
115	7.3	209	33	84	37	49	1.31
Range	3.6 to 7.3	141 to 215	14 to 38	-37 to 123	30 to 57	45 to 50	0.87 to 1.63
Weighted average	5.4	169	27	40	41	48	1.18

* Green or delivered tons.

** Ranked from largest to smallest acreage.

Previous and Current Studies Compared -

Prior to this 1980 study, the most recent economic study of processing sweet corn was made in 1976. Table 8 summarizes the results of both studies. Perhaps the most important comparisons to make between these studies are the yield per acre, return per ton and the costs to grow and harvest, that is, to produce the crop. These are the factors having the greatest effect on enterprise profits.

The comparison shows an increase in production costs from \$157 to \$196 per acre - an increase of 25 percent in the four year period. Yield was below average in 1976 and above average in 1980 for these growers. Returns for these growers averaged \$1 per ton higher in 1980 compared to 1976. Profits were significantly higher in 1980 as a result of the higher yields. Had yields for both years been equal to the 1976-80 five year average yield, 1980 profits would have been well below the 1976 level.

Table 8. SWEET CORN FOR PROCESSING
Costs and Returns
New York, 1976 and 1980 Compared

Item	Cost or Return			
	Per Acre		Per Ton	
	1976	1980	1976	1980
Number of farms	21	15		
Acres per enterprise	154	111		
Yield, green tons per acre	4.2	5.4		
Costs to: Grow	\$138	\$169	\$33	\$31
Harvest	19	27	4	5
Produce	\$157	\$196	\$37	\$36
Sell	20	27	5	5
Total costs	\$177	\$223	\$42	\$41
Returns	\$198	\$263	\$47	\$48
Profits	\$ 21	\$ 40	\$ 5	\$ 7
Return per dollar of cost	\$1.12	\$1.18		

Another Analysis -

The figures shown so far for processing sweet corn enterprises are averages for the 15 growers who cooperated in the 1980 study. How typical these production costs are for other New York growers is unknown. However, if we can assume production practices are fairly common for all growers, we might also assume these production costs are reasonably typical.

Yields are more related to weather than any other single factor and so may vary widely from year to year. Because of this wide fluctuation and the effect yields have on enterprise profits, it should be helpful to relate current costs to average State yields.

Yields on these 15 farms averaged 5.4 green tons per planted acre in 1980. That compares to the State average yield from Crop Reporting Board publications of 4.8 green tons per acre for 1980 and 4.4 green tons per acre for the 1976-80 five year average on a planted acre basis. If we use costs per acre experienced by the 15 growers in this study with the average State yields for 1976-80 and 1980, profits per acre will be substantially less than for the study group with its higher yield.

Using this approach, Table 9 shows a loss of \$2 per acre with 1980 costs and State average yields for the 1976-80 five year period. A 10 percent higher yield, as occurred for the State in 1980, would result in a profit of \$15 per acre.

Table 9. PROCESSING SWEET CORN
Costs and Returns
Using State Average Yields
New York, 1976-80 and 1980

Item	1976-80	1980
State average yield green tons per planted acre	4.4	4.8
- per planted acre -		
1980 costs to:		
Grow	\$169	\$169
Harvest	<u>27</u>	<u>27</u>
Produce	\$196	\$196
Sell*	<u>22</u>	<u>24</u>
Total costs	\$218	\$220
Returns**	\$216	\$235
Profit	\$- 2	\$ 15
Return per dollar of cost	\$0.99	\$1.07

* Adjusted by using 1980 cost of \$5 per ton.

** Returns using State yields noted and 1980 average returns of \$49 per green ton as published by the Crop Reporting Board.

FIELD CORN - 1980

As noted earlier in this publication, information for field corn enterprises was obtained from the same growers interviewed for processing sweet corn. As a result, thirteen records were obtained from field corn producers in western New York for the 1980 crop year.

Producers commonly market field corn at different times throughout the year. To make the 13 enterprises as comparable as possible, this study treated each enterprise as though the crop was dried and sold at harvest time. Hence, the enterprise analysis includes costs for the crop through harvest time sale and returns based on the grower's harvest time price for dry shelled corn hauled to a local buyer.

Note should be made that these field corn growers, in general, are commercial crop producers. That is, their major source of income is from the production of crops and, as such, their corn enterprises are larger than would generally be the case on a commercial dairy farm. Economies of size and efficiency of operation would enable the commercial crop producer to raise crops at lower costs and higher profits than a commercial dairy farmer.

Growing Costs -

Costs to grow field corn in New York in 1980 are shown in Table 10. These 13 commercial corn growers had enterprises averaging 346 acres each. The average yield on these farms for the year was 99 bushels of dry shelled corn per acre. That yield was six bushels higher than the State average of 93 bushels per acre for 1980.

Table 10.

FIELD CORN
Growing Costs
4498 acres on 13 Farms
New York, 1980

Item	Rates per acre	Cost	
		Per Acre	Per Bushel
Number of farms		13	
Acres per enterprise		346	
Yield per acre planted, bushels		99	
Labor	1.6 hr	\$ 10	\$.10
Tractor	1.5 hr	13	.13
Equipment, large trucks		12	.12
Custom work, equipment rent		--	--
Land use		46	.46
Lime, cover crop, manure		3	.02
Fertilizer: lbs. N-121, P-66, K-86		46	.47
Seed	25 M Kernels	15	.16
Chemicals		16	.17
Interest on operating capital		4	.04
All other		3	.03
Total growing costs		\$168	\$1.70

Growing costs totalled \$168 per acre and \$1.70 per bushel. Cash expenses for fertilizer, seed and chemicals amounted to \$67 per acre or 40 percent of all costs. Land cost, at \$46 per acre, represents the average costs of owned and rented land on these farms.

Harvesting Costs -

All but three of the field corn growers owned their own harvesting equipment. The three growers who had their crop harvested by a custom operator grew a total of 415 acres - less than 10 percent of the acres in the study.

Table 11 shows the harvesting costs for the 13 growers on a per acre and per bushel basis. These costs include costs to place the crop on a truck if the crop was to leave the farm for any reason at harvest time. Otherwise, as in most cases, harvesting costs include costs to deliver the corn to farm drying facilities. Drying, hauling or storage costs are not included.

Table 11. FIELD CORN
Harvesting Costs
4498 acres on 13 Farms
New York, 1980

Item	Cost	
	Per Acre	Per Bushel
Number of farms		13
Acres per enterprise		346
Yield per acre, bushels		99
Labor	\$ 4	\$.04
Tractor, truck	2	.02
Equipment	10	.10
Custom work	2	.02
All other	<u>1</u>	<u>.01</u>
Total harvesting costs	\$19	\$.19

Total harvesting costs amounted to \$19 per acre on these farms for 1980. With yields averaging 99 bushels per acre, the cost to harvest the crop averaged \$0.19 per bushel. Equipment costs were the largest single item. These included the grower's own equipment and most of any custom harvesting costs. Thus, equipment costs totalled \$12 per acre. Labor cost an average of \$4 per acre for about two-thirds of an hour of labor per acre. Tractor and truck costs of \$2 per acre covered those items used to move the crop to the farm drying facilities.

Drying and Hauling Costs -

Although most field corn growers had their own storage facilities to provide flexibility in their marketing practices, no attempt was made to estimate and include total storing and selling costs as a part of this study. The aim was to analyse the production phase of the field corn enterprise and so only costs to produce and sell dry shelled corn at harvest time were considered. Therefore, this analysis includes only costs to dry and haul the crop to a buyer in addition to the growing and harvesting costs. Estimated harvest time prices for dry shelled corn were used for each grower to determine total returns and profits for each enterprise.

Table 12. FIELD CORN
Drying and Hauling Costs
4498 acres on 13 Farms
New York, 1980

Item	Cost	
	Per Acre	Per Bushel
Number of farms		13
Acres per enterprise		346
Yield per acre, bushels		99
Estimated harvest moisture, %		26.6
Drying costs	\$36	\$0.36
Hauling costs	<u>17</u>	<u>0.17</u>
Total costs	\$53	\$0.53

Table 12 indicates the drying and hauling cost on a per acre and per bushel basis. The average harvest time moisture level for shelled corn harvested by these New York growers was estimated at 26.6 percent. Based on the estimated moisture and local drying charges to dry the corn to 15 percent moisture, drying cost 36 cents per bushel or \$36 per acre for these growers.

An additional cost of 17 cents per bushel or \$6 per ton was used for each grower to move the crop from the farm to a local buyer. This charge resulted in handling and hauling costs of \$17 per acre for these enterprises.

Using these assumptions the total cost to dry and haul the corn crop to a local buyer amounted to 53 cents per bushel or \$53 per acre at the 1980 yield level.

Costs and Returns - 1980 Yields -

Table 13 summarizes the costs and returns for these New York field corn growers on a per acre basis and also on a per bushel basis according to their 1980 yield levels. Returns are based on the growers' actual receipts for corn sold at harvest time plus anticipated receipts as if the balance of his crop was sold at the local price on November 1, 1980.

Table 13.

FIELD CORN
Costs and Returns
4498 acres on 13 Farms
New York, 1980

Item	Cost or Return	
	Per Acre	Per Bushel
Number of farms		13
Acres per enterprise		346
Yield per acre, bushels		99
Costs to: Grow	\$168	\$1.70
Harvest	<u>19</u>	<u>.19</u>
Produce	\$187	\$1.89
Dry and haul	<u>52</u>	<u>.53</u>
Total costs	\$239	\$2.42
Returns	\$319	\$3.24
Profit	\$ 80	\$0.81
Return per dollar of cost		\$1.34

These records show a total cost of \$239 per acre in 1980 for these growers. Returns averaged \$319 per acre and \$3.24 per bushel for a 99 bushel per acre yield. With an excellent yield and a high price, the corn crop showed an average profit of \$80 per acre. Growers received \$1.34 for each dollar of cost for their corn grain enterprise in 1980.

Selected Factors -

The following three tables contain summary and analysis data for all 13 field corn enterprises in the study for 1980. Table 13C provides a listing of selected factors for each enterprise to illustrate ranges and variations between enterprises.

Table 13A.
FISCAL YEAR 1980

SUMMARY AND ANALYSIS OF CROP ENTERPRISE 3110 CORN FOR GRAIN

FOR ALL FARMS

D E B I T S		C R E D I T S		F A C T O R S	
QTY	UNIT	TOTAL COST /	QTY	UNIT	TOTAL
GROWING COSTS - OPER. 1:		ACRE \$	\$		
1.	LABOR	7,167 HR	443,305 BU	1,436,325	A. ACRES * 4,498.0 AC
2.	TRACTOR	6,743 HR			B. TOT GROW COST (SUM 1 THRU 15) \$ 754,242
3.	TRUCK	1,721			C. TOT HARV COST (SUM 16 THRU 21) \$ 85,653
4.	EQUIPMENT	51,695			D. PRODUCTION COST (B+C) \$ 839,895
5.	CUSTOM WORK, EQUIP. RENT	1,178			E. TOT S. & S COST (SUM 22 THRU 27) \$ 235,234
6.	LAND USE	204,949			F. NET** CROP COST (28-32) \$1,075,129
7.	MANURE, COVER CROPS	6,775			G. TOT LABOR HOURS (1+16+22) 9,866 HR
8.	LIME	3,086			H. TOT LABOR COST (1+16+22) \$ 63,403
9.	FERTILIZER-N*542,374 LB				I. LABOR RETURNS (H+29-35) \$ 424,699
10.	P*295,763 LB				
11.	K*385,776 LB	205,860			J. YIELD (31/A) 99 BU
12.	SEED, PLANTS	112,872 M			K. FERTILIZER - N 121 LB
13.	SPRAY, DUST MATERIALS	73,841			L. P (10/A) 66 LB
14.	INTEREST	18,259			M. K (11/A) 86 LB
15.	ALL OTHER	14,789			N. SEED, PLANTS (12/A) 25 M
HARVESTING COSTS - OPER. 2:					O. GROWING COST (8/A) \$ 168
16.	LABOR	2,699 HR			P. HARVESTING COST (C/A) \$ 19
17.	TRACTOR	30 HR			Q. PRODUCTION COST (O+P) \$ 187
18.	TRUCK	6,299			R. TOTAL COSTS (28/A) \$ 239
19.	EQUIPMENT	46,889			S. TOTAL RETURNS (34/A) \$ 319
20.	CUSTOM WORK, EQUIP RENT	10,147			T. PROFIT (S-R) \$ 80
21.	ALL OTHER	4,511			U. LABOR TO: GROW (1/A) 2 HR
STORING & SELLING COSTS - OPER. 3:					V. HARVEST (16/A) 1 HR
22.	LABOR	0 HR			W. PRODUCE (U+V) 3 HR
23.	TRUCK	0			X. LABOR RETURNS (I/A) \$ 94
24.	EQUIPMENT	160,045			Y. TRACTOR: GROW (2/A) 1 HR
25.	BUILDING USE	0			Z. HARVEST (17/A) 0 HR
26.	INTEREST	0			
27.	ALL OTHER	75,189			
28.	TOTAL COSTS	\$1,075,129			AA. GROWING COST (B/31) \$ 1.70
29.	GAIN	361,196			BB. HARVESTING COST (C/31) \$ 0.19
30.	TOTAL DEBITS.	\$1,436,325			CC. NET** PRODUCTION COST (D-32)/31 \$ 1.89
* DETERMINED BY COST ACCOUNT STAFF					DD. STORE & SELL COST (E/31) \$ 0.53
** VALUE OF BY-PRODUCT DEDUCTED					EE. TOTAL COSTS (28/31) \$ 2.43
					FF. NET COST ** (F/31) \$ 2.43
					GG. TOTAL RETURNS (34/31) \$ 3.24
					HH. NET RETURNS ** (34-32)/31 \$ 3.24
					II. PROFIT (HH-FF) \$ 0.81
					RETURNS
					JJ. PROD / HR OF LABOR (31/(1+16)) 45 BU
					KK. RETURN PER HR OF LABOR (I/G) \$ 43.05
					LL. RETURN PER \$ OF COST (34/28) \$ 1.34

Table 13B.

CORN FOR GRAIN
 COSTS AND RETURNS PER ACRE
 4,498 ACRES ON 13 COST ACCOUNT FARMS, 1980

ITEM	AVERAGE PER ACRE
COSTS: GROWING:	
LABOR 2 HR	\$ 10
TRACTOR 1 HR	13
TRUCK, EQUIPMENT	12
CUSTOM WORK, EQUIP RENT	0
LAND USE	46
MANURE, LIME, COVER CROP	2
FERT - LBS N- 121, P- 66, K- 86	46
SEED, PLANTS 25 M	15
SPRAY, DUST MATERIALS	16
INTEREST, ALL OTHER	8
TOTAL GROWING COSTS	\$ 168
HARVESTING:	
LABOR 1 HR	4
TRACTOR 0 HR	0
TRUCK, EQUIPMENT	12
CUSTOM WORK, EQUIP RENT	2
ALL OTHER	1
TOTAL HARVESTING COSTS	19
TOTAL PRODUCTION COSTS	\$ 187
STORING AND SELLING:	
LABOR 0 HR	0
TRACTOR, TRUCK, EQUIP	36
BUILDING USE	0
INTEREST, ALL OTHER	16
TOTAL STORING AND SELLING COSTS	52
TOTAL COSTS	\$ 239
RETURNS:	
CROP - YIELD: 99 BU	\$ 319
BY-PRODUCT, OTHER RETURNS **	0
TOTAL RETURNS	\$ 319
PROFIT:	\$ 80
AVERAGE	
OTHER FACTORS: COST PER BU TO: GROW	\$ 1.70
HARVEST	0.19
STORE AND SELL	0.53
TOTAL (OR NET*) COST PER BU	2.43
TOTAL (OR NET*) RETURN ** PER BU	3.24
PROFIT PER BU	0.81
LABOR RETURN PER ACRE	\$ 94
PRODUCTION PER HOUR OF LABOR	45 BU
RETURN PER HOUR OF LABOR	\$ 43.05
RETURN PER DOLLAR OF COST	1.34

* VALUE OF BY-PRODUCTS, IF ANY, DEDUCTED
 ** RECEIPTS FROM GOVERNMENT PROGRAMS NOT INCLUDED

Table 13C.

FIELD CORN
Selected Factors
New York, 1980
4498 acres on 13 Farms

Farm No.*	Yield per acre bu.	Average per Acre			Average per Bushel		Return per \$ of Cost
		Grow cost	Harvest cost	Profit	Cost	Return	
		\$	\$	\$	\$	\$	\$
101	100	149	20	117	2.18	3.35	1.53
102	110	193	12	103	2.42	3.35	1.38
103	90	155	13	69	2.39	3.15	1.32
104	110	164	20	114	2.26	3.30	1.46
105	80	166	25	8	2.91	3.00	1.03
106	90	187	29	4	2.95	3.00	1.02
107	100	189	30	46	2.74	3.20	1.17
108	95	170	19	55	2.47	3.05	1.23
109	100	160	29	84	2.37	3.21	1.35
110	120	163	18	142	2.07	3.25	1.57
111	75	175	30	-19	3.26	3.00	0.92
112	80	174	21	5	2.94	3.00	1.02
113	85	190	32	-11	3.13	3.00	0.96
Range	75 to 120	149 to 193	12 to 32	-19 to 142	2.07 to 3.26	3.00 to 3.35	0.92 to 1.57
Weighted average	99	168	19	80	2.43	3.24	1.34

* Ranked from largest to smallest acreage.

Costs and Returns - Average Yields -

Corn grain yields in New York were at a record high level in 1980. The Crop Reporting Board published a State average yield for corn grain of 93 bushels per acre. The 15 growers in the study averaged 99 bushels per acre. These high yields obviously had a positive effect on enterprise profits in 1980.

Table 14 shows enterprise results using current costs and prices with a yield equal to the 1976-80 five year average. Appropriate adjustments have been made to reflect the effect of the lower yield on the drying and hauling costs and on the returns per acre. The result was a reduction in drying and hauling costs per acre and returns per acre. Profits were reduced to \$45 per acre and the returns to \$1.20 per dollar of cost - still very attractive levels.

Table 14.

FIELD CORN
Costs and Returns
Using a 5 Year Average Yield
New York, 1980

Item	Cost or Return	
	Per Acre	Per Bushel
Number of farms		13
Acres per enterprise		346
Yield per acre, bushels avg for 1976-80		85
Costs to: Grow	\$168	\$1.98
Harvest	<u>19</u>	<u>.22</u>
Produce	\$187	\$2.20
Dry and Haul	<u>43</u>	<u>.51</u>
Total costs	\$230	\$2.71
Returns	\$275	\$3.24
Profit	\$ 45	\$0.53
Return per dollar of cost		\$1.20

LONG ISLAND POTATOES

In spite of a smaller yield on fewer acres than in recent years, New York continued to rank tenth in the nation for potato production in 1980. Most of the decrease in New York potato production occurred on Long Island where about half of the State production normally is grown.

A hot, dry growing season was the major factor that caused the lower yield in 1980. The New York Crop Reporting Board reported a 1980 yield of 235 cwt per acre as compared to a 1975-1979 five year average yield of 285 cwt per acre.

Acreage of potatoes on Long Island has averaged 23,000 acres per year during the same period. It would seem that concern over insect control due to the withdrawal of the insecticide Temik from the market may have been a major reason for the reduction in acreage of potatoes on the Island in 1980. The Crop Reporting Board estimated an acreage of 18,800 acres for 1980 - down about 5,000 acres from the average of the previous five years.

Because of continuing interest in the general economic climate of the Long Island potato industry, data for a second consecutive year were collected from cooperating growers. Ten of the 13 growers were cooperators in the 1979 study and a comparison of the two years' data is included in this publication.

Overall Results of the 1980 Study -

The group of 13 cooperating growers had potato enterprises ranging in size from 35 to 375 acres and averaging 168 acres per enterprise. Even though the average yield for Long Island, as a whole, was well below normal, these growers' yields averaged only slightly below normal. However, as in any average, the distribution is likely more important than the average itself. Only three of the 13 growers had yields above the average for the Island. The average yield of 273 cwt per acre for the 13 growers was strongly influenced by the fact that the grower with the largest acreage also had the highest yield. Table 19 will show the yield distribution for these growers.

Growing costs for potatoes on these farms averaged \$1,011 per acre in 1980 as shown in Table 15. Land cost, at \$132 per acre, is an average of the cost of owned and rented land as experienced by these growers. Land costs are related to agricultural use values and exclude any value for development rights.

Major out-of-pocket costs were for fertilizer, seed and chemicals. Together, these costs totalled \$606 per acre or 60 percent of the total growing costs. Labor costs of \$60 per acre include employer costs as well as cash wages. They also include the cost of the operator's labor and management.

Table 15. LONG ISLAND POTATOES
Growing Costs
2184 acres on 13 Farms
New York, 1980

Item	Rates per Acre	Cost	
		Per Acre	Per Cwt
Number of farms			13
Acres per enterprise			168
Yield per acre, cwt.			273
Labor	10.4 hr	\$ 60	\$.22
Tractor	4.3 hr	28	.11
Equipment, large truck		77	.28
Custom work, equipment rent		15	.05
Land use		132	.48
Cover crop, lime		22	.08
Fertilizer: Lbs. N-188, P-351, K-175		185	.68
Seed 2,130 lbs		154	.57
Chemicals		267	.98
Interest on operating capital		32	.12
All other		39	.14
Total growing costs		\$1011	\$3.71

Table 15 also shows the growing costs of the various input items per hundredweight. Based on an average yield of 273 cwt per acre, 1980 growing costs for these growers averaged \$3.71 per cwt.

Harvesting costs totalled \$150 per acre in 1980. These costs include vine killing, the harvest operation and the costs to place the potatoes in farm storage. No grading, storage or marketing costs are included. Labor and mechanical harvesting equipment were the major cost items. Together, these two items accounted for two-thirds of the total harvesting costs. Table 16 shows that harvesting cost \$.55 per hundredweight.

Table 16.

LONG ISLAND POTATOES
Harvesting Costs
2184 acres on 13 Farms
New York, 1980

Item	Rates per Acre	Cost	
		Per Acre	Per Cwt
Number of farms		13	
Acres per enterprise		168	
Yield per acre, cwt		273	
Labor	8.0 hr	\$ 45	\$.17
Tractor	1.8 hr	12	.04
Truck		11	.04
Equipment		56	.20
Custom work, equipment rent		1	.01
All other		<u>25</u>	<u>.09</u>
Total harvesting costs		\$150	\$.55

Because most potato growers harvest their crop in a volume too large to market at harvest time, it is essential that they have access to a storage facility. Normally, the potato storage is located on the farm. Potatoes, not sold at harvest time, are placed in storage to be marketed after harvest.

To recognize this cost to the grower, a cost of 30 cents per hundredweight stored has been charged against each potato enterprise as a storage building cost. In addition, the cost to load the stored potatoes out of storage was estimated and included in the storing costs shown in Table 17. These costs averaged \$47 per acre for these growers in 1980 or 17 cents per hundredweight. No additional costs for grading, hauling or interest on the stored crop are included.

Table 17.

LONG ISLAND POTATOES
Storing Costs
2184 acres on 13 Farms
New York, 1980

Item	Cost	
	Per Acre	Per Cwt
Number of farms		13
Acres per enterprise		168
Yield per acre, cwt		273
Labor	\$ 3	\$.01
Tractor	2	.01
Storage building	40	.15
All other	2	--
Total storing costs*	\$47	\$.17

* See text for description of costs.

Costs and returns are summarized in Table 18. The total cost to produce potatoes was \$1,161. Additional costs to provide a storage building for part of the crop and to load those potatoes out of storage averaged \$47 per acre for these growers. Thus, total costs for this study added to \$1,208 per acre or \$4.43 per hundredweight.

Table 18. LONG ISLAND POTATOES
Costs and Returns
2184 acres on 13 Farms
New York, 1980

Item	Cost or Return	
	Per Acre	Per Cwt
Number of farms		13
Acres per enterprise		168
Yield per acre, cwt		273
Costs to: Grow	\$1011	\$3.71
Harvest	<u>150</u>	<u>.55</u>
Produce	\$1161	\$4.26
Store*	<u>47</u>	<u>.17</u>
Total cost	\$1208	\$4.43
Returns	\$2125	\$7.80
Profit	\$ 917	\$3.37
Return per dollar of cost		\$1.76

* See text for description of costs.

Returns for this study include the ungraded farm value of all potatoes sold at harvest, the value of all B grade potatoes and the value of stored potatoes as of November 1. Using these values, potatoes averaged \$7.80 per hundredweight and, with a yield of 273 hundredweight per acre, returns averaged \$2125 per acre. Profits for the group averaged \$917 per acre or \$3.37 per hundredweight. Expressed another way, growers received \$1.76 for each dollar of cost to grow and harvest their potato crop in 1980.

Table 19 provides a listing of several factors for each grower with the group average for each factor at the bottom of the table. The data illustrate the wide variation in the various factors from farm to farm.

Table 19. LONG ISLAND POTATOES
Selected Factors
13 Enterprises, New York, 1980
(Ranked by size of enterprise)

Farm No.	Yield per acre cwt	Production per hour of farm labor cwt	Average per Acre					Production cost per cwt. \$
			Fert cost \$	Spray cost \$	Grow cost \$	Harvest cost \$	Prod cost \$	
401	384	34	157	219	883	138	1021	2.66
402	240	14	226	330	1241	123	1364	5.69
403	257	17	180	325	993	150	1143	4.45
404	265	9	182	400	1256	183	1439	5.71
405	345	32	188	205	964	157	1121	3.39
406	200	9	168	276	881	154	1035	5.42
407	205	9	182	172	882	113	995	5.01
408	313	21	156	79	768	201	969	3.29
409	210	8	199	289	1024	171	1195	5.91
410	260	16	227	298	1007	147	1154	4.50
411	212	11	165	284	1097	100	1197	5.91
412	227	7	174	228	1074	213	1287	5.83
413	165	3	241	362	1308	265	1573	9.85
Range	165 to 384	3 to 34	156 to 241	79 to 400	768 to 1308	100 to 265	969 to 1573	2.66 to 9.85
Weighted average	273	15	185	267	1011	150	1161	4.43

Comparison of 1979 and 1980 Study Results -

With two consecutive years' data, and most of it from the same farms for both years, a comparison will reveal some significant differences in production costs. Table 20 summarizes the production costs for the potato enterprises included in the 1979 and 1980 studies. These data show a 23 percent increase in production costs from 1979 to 1980. Costs increased from \$947 to \$1161 per acre.

Table 20. LONG ISLAND POTATOES
Production Costs
1979 and 1980 Compared
New York State

Item	Cost			
	Per Cwt		Per Cwt	
	1979	1980	1979	1980
Number of farms	10	13		
Acres per farm	159	168		
Yield per acre, cwt	287	273		
Costs to: Grow	\$829	\$1011	\$2.89	\$3.71
Harvest	<u>118</u>	<u>150</u>	<u>.41</u>	<u>.55</u>
Produce	\$947	\$1161	\$3.30	\$4.26
Same farms	10	10		
Acres per farm	159	148		
Yield per acre, cwt	287	250		
Costs to: Grow	\$829	\$1040	\$2.89	\$4.16
Harvest	<u>118</u>	<u>151</u>	<u>.41</u>	<u>.60</u>
Produce	\$947	\$1191	\$3.30	\$4.77
Selected Factors:				
Grow and harvest labor cost	\$ 99	\$ 116		
Grow and harvest eqpt cost	\$102	\$ 124		
Seed	\$153	\$ 156		
Chemicals	\$183	\$ 265		
Fertilizer	\$154	\$ 191		
Lbs. of N	192	193		
P	346	348		
K	173	174		

When data from the same ten farms are compared, production costs per acre increased from \$947 to \$1191 - an increase of over 25 percent. These growers planted a few less acres and experienced a 13 percent lower yield due, in large part, to a generally hot, dry growing season.

Differences in some selected factors are shown at the bottom of Table 20. Although labor and equipment costs showed significant increases, chemical and fertilizer costs increased more than other items. The substitution of other spray materials for Temik, as well as a general price increase, resulted in a 45 percent increase in chemical costs per acre. Fertilizer costs increased 24 percent - from \$154 to \$191 per acre - with no change in the quantity of nutrients applied.

The 1980 study showed the results of sharply higher production costs in a year of significantly lower yields. Costs for these growers were up 23 percent from 1979 while yields on Long Island in general were down 17 percent from the 1975 to 1979 five year average. Even so, with a price 45 percent higher than 1979 and 85 percent over the 1975 to 1979 average, 1980 was a profitable year for Long Island potato growers.

MARKET CABBAGE

Packing and Storage Costs

During the fall of 1979, a group of cabbage growers agreed to cooperate in an effort to obtain costs to pack and store market cabbage. The aim was to work with growers who stored between 500 and 1500 tons of cabbage from the 1979 crop. Other criteria were that the cabbage be stored only in common storage and that most of the cabbage be sold as fresh in bags.

Records kept by eight growers were summarized for the 1979-80 storage season. These growers stored an average of 762 tons and sold 521 tons of cabbage indicating an average storage and trimming loss of 32 percent. Quantity stored ranged from 359 tons to 1530 tons per grower.

Packing and storing costs are summarized in Table 21. Over 84 percent of the cabbage sold was packed in 50 pound bags furnished by the buyer. The remaining 16 percent was trimmed and sold in bulk. Since the bags were furnished by the buyer, the packing costs shown in Table 21 do not include a cost for bags.

Table 21 shows that the average quantity of cabbage packed per farm was 440 tons or 17,600 50 pound bags. The labor required to pack that quantity of cabbage amounted to an average of 2217 hours per farm. This cost an average of \$24.51 per ton or 61 cents per bag. Labor was the major cost in packing cabbage as shown in Table 21. Other costs involved in the packing operation are listed in the table. Total packing costs amounted to \$34 per ton or 84 cents per bag.

Table 21.

MARKET CABBAGE
Packing and Storage Costs
8 Farms, New York
1979-80

Number of farms	8
Tons per farm - Stored	762
Sold	521
Trimmed and packed	440
Trimmed only	81

Item	Total Cost per Farm	Cost Per	
		Packed ton	50 lb bag
Average quantity per farm		440 tons	17,600 bags
<u>Packing costs -</u>			
Labor 2217 hours	\$10,783	\$24.51	61¢
Tractor, truck	1,297	2.95	7
Equipment	558	1.27	3
Farm buildings	726	1.65	4
Utilities	787	1.79	5
Other	<u>714</u>	<u>1.62</u>	<u>4</u>
Total packing costs	\$14,865	\$33.79	84¢

Item	Total Cost per Farm	Cost Per	
		Net ton sold	50 lb bag*
Average quantity per farm		521 tons	17,600 bags
<u>Storage Costs -</u>			
Labor	\$ 263	\$.51	1.3¢
Equipment	3,289	6.31	15.6
Farm buildings	5,114	9.82	24.2
Utilities	466	.89	2.1
Interest on stored crop	<u>774</u>	<u>1.49</u>	<u>3.7</u>
Total storage costs	\$9,906	\$19.02	46.9¢

* Excludes storage costs for cabbage that was trimmed only.

At the bottom of Table 21 are shown the storage costs for an average of 521 tons of cabbage stored per farm. The only labor cost involved in these costs is for periodic checking of the condition of the stored cabbage. The major costs include the building in which the cabbage was stored as well as the bins holding the cabbage. Bin costs are indicated in the Table as equipment costs. These major costs for storing the crop included the bin costs of \$6.31 per ton which amounted to 15.6 cents per bag. Storage building costs totalled \$9.82 per ton or 24.2 cents per bag.

The only other major cost involved in storing the crop was for interest on the stored crop. This was charged on the value of the crop in storage for the length of time it was stored during the season. This amounted to \$1.49 per ton or 3.7 cents per bag. Total storage costs added up to \$19 per ton or 47 cents per bag.

The next three Tables - 22, 23 and 24 - list selected factors for each farm in the study to illustrate the variation between farms as well as the range and average of the group.

Variations in packing costs shown in Table 22 are related to the labor cost and the effectiveness with which the labor was used. Table 23 shows factors indicating packing efficiency for each farm. An average of 5.0 hours of labor was required to pack a ton of cabbage in 50 pound bags. Expressed another way, these growers trimmed and packed 7.9 50 pound bags per worker hour. Most of the variation in storage costs shown in Table 24 are the result of type and age of the storage.

Table 22.

MARKET CABBAGE
Packing Costs
8 Farms, New York
1979-80

Farm No.	Quantity Trimmed and Packed tn	Packing Cost Per 50 lb Bag				Packing cost per ton \$
		Labor \$	Tract Eqpt \$	Bldg \$	Total \$	
101	184	.49	.03	.02	.60	24
102	190	1.67	.18	.07	2.08	83
103	223	.84	.18	.08	1.23	49
104	225	.54	.05	.04	.67	27
105	381	.39	.10	.07	.61	24
106	541	1.09	.17	.02	1.44	57
107	658	.50	.08	.01	.63	25
108	1,118	.33	.08	.05	.55	22
Range	184 to 1,118	.33 to 1.67	.03 to .18	.01 to .08	.55 to 2.08	22 to 83
Weighted average	440	.61	.10	.04	.84	34

Table 23.

MARKET CABBAGE
Packing Efficiency
8 Farms, New York
1979-80

Farm No.	Packing Hours Per Farm	Tons Packed Per Farm	Hours Per Ton Packed	50 lb Bags Packed	
				Per Farm	Per Hour
101	1,146	184	6.2	7,350	6.4
102	1,777	190	9.4	7,600	4.3
103	2,076	223	9.3	8,920	4.3
104	650	225	2.9	9,000	13.8
105	1,582	381	4.2	15,240	9.6
106	5,075	541	9.4	21,640	4.3
107	2,276	658	3.5	26,326	11.6
108	3,150	1,118	2.8	44,720	14.2
Range	650 to 5,075	184 to 1,118	2.8 to 9.4	7,350 to 44,720	4.3 to 14.2
Weighted average	2,217	440	5.0	17,600	7.9

Table 24.

MARKET CABBAGE
Storage Costs
8 Farms, New York
1979-80

Farm No.	Quantity Stored tn	Storage Cost Per 50 lb Bag					Storage Cost Per Ton \$
		Eqpt \$	Bldg \$	Int \$	Other \$	Total \$	
101	359	.14	.49	.04	.03	.70	28
102	1,210	.15	.27	.04	.04	.50	20
103	472	.29	.22	.03	.03	.57	23
104	375	.30	.21	.04	.03	.58	23
105	475	.20	.24	.04	.03	.51	20
106	900	---	.13	.04	.09	.26	11
107	772	.16	.19	.04	.02	.41	17
108	1,520	.16	.28	.03	.03	.50	20
Range	359 to 1,530	0 to .30	.13 to .49	.03 to .04	.02 to .09	.26 to .70	11 to 28
Weighted average	762	.16	.24	.04	.03	.47	19