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COST OF PRODUCTION UPDATE

For 1978 on

SNAP BEANS for PROCESSING (2nd Year)

and BEETS for PROCESSING

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CONTENTS

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 prevelant 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 snap beans were collected in 1978 for the second consecutive year. This publication contains the results for the 1978 costs and returns study as well as a comparison with the 1977 results. Background information on the snap bean industry in New York as it relates to other important producing states is presented in Cost of Production Update for 1977 on Snap Beans for Processing, A.E. Res. 78-11, D. P. Snyder, Department of Agricultural Economics, Cornell University, Ithaca, New York 14853.

Data were also collected for the first year for processing beets. Cost and return information as well as background information for processing beets in New York are provided in the second section of this report. It is anticipated that a second year of beet information will be obtained in 1979 and reported in a subsequent publication.

Procedure

Snap bean growers who participated in the 1977 study were given the opportunity to participate again in 1978. Thus, records from 32 snap bean enterprises were obtained for two consecutive years. In addition, nine other snap bean growers participated in the 1978 effort bringing the total to 41 snap bean enterprises.

A list of processing beet growers was compiled with the aid of growers, processors and extension agents. A total of 22 beet enterprises are summarized in this report.

Cooperating growers provided information about their crop enterprises for the 1978 year during an interview held after the crop was 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 Enterprise 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 analysing 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, N.Y. 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, N.Y. 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, N.Y. 14853.

The Growing Season in 1978

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 1978 growing season in four areas of the State. All four areas represent major snap bean growing areas. The stations at Batavia and Geneva represent the major beet growing areas in the State.

Generally, it was a dry year with ideal harvesting conditions in the fall. While these conditions resulted in some germination and growth problems, very few acres of either snap beans or beets were left unharvested and yields of beans were higher than in 1977. Although rainfall was below normal for most of the growing season, the month of September was wetter than normal but not so much that harvest operations were seriously hindered.

Tables 1 and 2 show weather data for 1978 compared to normal for four appropriate Areas in the State.

Table 1. TEMPERATURE, PRECIPITATION AND GROWING SEASON
Selected Stations, New York, 1941-70 and 1978

Area - Station	Average temperature May - Sept.		Precipitation				Length of growing season*	
			May - Sept.		Total annual			
	1941-70	1978	1941-70	1978	1941-70	1978	1947-67	1978
	degrees F		inches				days	
Southwestern N.Y.								
Jamestown	64.1	60.9	17.6	15.0	-----	37.5	144	136
Western N.Y.								
Batavia	64.0	65.3	15.3	13.9	32.6	30.3	154	158
Central N.Y.								
Geneva	65.3	64.5	14.6	11.3	32.3	27.6	158	166
Utica N.Y.								
Utica	63.5	64.7	18.1	16.4	40.6	36.7	157	145

* Days between the last temperature of 32°F in the spring and the first in the fall.

Table 2. GROWING SEASON RAINFALL
Selected Stations, New York, 1941-70 and 1978

Station	May		June		July		Aug		Sept	
	1941-70	1978	1941-70	1978	1941-70	1978	1941-70	1978	1941-70	1978
	inches									
Jamestown	-----	2.99	-----	2.42	-----	4.25	-----	3.16	----	2.15
Batavia	3.17	2.67	2.69	1.84	3.05	2.23	3.50	2.57	2.87	4.62
Geneva	3.02	2.09	3.10	2.65	3.06	2.05	2.82	1.41	2.59	3.07
Utica	3.52	1.86	3.55	4.59	4.17	3.16	3.54	2.22	3.32	4.61

Source: Climatological Data NOAA, Environmental Data Service, New York Annual Summary, 1978, Vol. 90, No. 13.

PROCESSING SNAP BEANS - 1978

Enterprise records were obtained from snap bean growers in each of the four areas in the State where the crop has significant acreage. The data for each area are summarized as well as for the State as a whole. Because 1978 was the second consecutive year for which snap bean records were obtained, data comparisons are made for the two years. Also, a comparison is made of the 32 enterprises that were in the study for both years.

Overall Results for the State -

The 41 snap bean enterprises included in the 1978 study had a total of 25,256 acres - 48 percent of the 52,300 acres planted in the State. The Crop Reporting Board figures indicate that 3.1 percent of the planted acreage was not harvested as compared to 1.6 percent for the Study acreage. The unharvested acreage of processing snap beans was significantly below the more normal eight percent of planted acres and far below the 12 percent loss experienced in 1977. Study results show an increase in yield for each Area as well as for the State, mainly because more of the planted acres were harvested.

In the following tables, costs and returns are shown for these 1978 snap bean enterprises. When compared to the 1977 figures both costs and returns are higher and, with somewhat higher yields per acre, profits were also higher. In 1978, 83 percent of the enterprises showed a gain on the snap bean enterprise as compared to 54 percent in 1977.

Table 3 shows that growing costs for processing snap beans in the State averaged $217 per acre. This was $5 per acre higher than 1977 growing costs per acre and is accounted for by minor increases in several of the cost items. Because of an increase in yield to 2.4 tons per acre, growing costs decreased to $90 per ton - $9 per ton lower than in 1977. Cash costs for fertilizer, seed and chemicals continue to account for over half of the growing costs.

Table 3. PROCESSING SNAP BEANS
Growing Costs
New York State
25,256 Acres, 41 Farms, 1978

Item	Rates per acre	Cost Per Acre	Cost Per Ton
Number of farms		41	
Acres per enterprise		616	
Yield per acre planted, tons*		2.4	
Labor	3.0 hrs	$ 15	$ 6
Tractor	2.0 hrs	12	5
Truck, equipment		10	4
Custom work, equipment rent		2	1
Land use		46	19
Lime, cover crop, manure		9	4
Fertilizer:	lbs. N-35, P-80, K-42	26	11
Seed	97 lbs.	66	28
Chemicals		20	8
Interest on operating capital		3	1
All other		8	3
Total growing cost		$217	$90

* Paid weight

Harvesting conditions were very favorable in 1978. As a result, only 1.6 percent of the planted acres were not harvested. Therefore, harvesting costs are presented on the basis of planted acres in Table 4. These costs averaged $52 per acre. This was $7 per acre less than in 1977 primarily because of lower tractor and equipment costs due to improved harvesting conditions. Also, equipment fixed costs were spread over more acres per enterprise which would tend to lower harvesting costs. Harvesting costs averaged $22 per ton which was $2 lower than in 1977.

Table 4. PROCESSING SNAP BEANS
Harvesting Costs
New York State
25,256 Acres, 41 Farms, 1978

Item	Cost	
	Per Acre	Per Ton
Number of farms	41	
Acres per enterprise	616	
Yield per acre planted, tons*	2.4	
Labor	$13	$ 5
Equipment	33	14
Custom work, equipment rent	2	1
All other	4	2
Total harvesting costs	$52	$22

* Paid weight

Selling costs as shown in Table 5 include, basically, the cost to haul the crop off the farm to the processor. While most growers used their own trucks to haul the beans, a significant amount of hauling was done by custom operators. Many of the processors, especially grower cooperatives, did not pay the grower immediately for all of his crop. In some cases the growers had substantial accounts receivable. The cost to the grower to carry these receivables is reflected in the interest cost of $6 per acre or $3 per ton.

Table 5. PROCESSING SNAP BEANS
Selling Costs
New York State
25,256 Acres, 41 Farms, 1978

Item	Cost	
	Per Acre	Per Ton
Number of farms	41	
Acres per enterprise	616	
Yield per acre planted, tons*	2.4	
Labor	$ 3	$ 1
Truck	7	3
Custom haul	4	2
Interest on accounts receivable	6	3
All other	1	-
Total selling costs	$21	$ 9

* Paid weight

Total cost for producing and marketing processing snap beans in New York in 1978 averaged $290 per acre, as compared to $281 per acre for 1977. This represents a cost increase of about 3.2 percent. With a higher yield the total cost per ton decreased to $121 in 1978. Returns averaged $357 per acre or $149 per ton.

In cases where growers sold beans to a cooperative, no effort was made to estimate a value for potential retained earnings. Returns per ton include only what he had actually received for the crop and what he had yet to receive based on the most current estimate of Commercial Market Value. Profits on these 41 snap bean enterprises averaged $67 per acre and $28 per ton. Table 6 summarizes the situation for 1978 for the State.

Table 6. PROCESSING SNAP BEANS
Enterprise Costs and Returns
New York State
25,256 Acres, 41 Farms, 1978

Item		Cost or Return Per Acre	Per Ton
Number of farms		41	
Acres per enterprise		616	
Yield per acre planted, tons*		2.4	
Costs to:	Grow	$217	$ 90
	Harvest	52	22
	Produce	$269	$112
	Sell	21	9
	Total costs	$290	$121
Returns		$357	$149
Profit		$ 67	$ 28
Return per dollar of cost		$1.23	

* Paid weight

Comparison of Two Years' Data -

In comparing the enterprise results for the two years for the State, some of the changes will be due to the inclusion of different farms in the study. Therefore, a more meaningful comparison could be made using data from the same farms for both years. Fortunately, 32 of the farms in the 1978 study were also in the 1977 study.

Table 7 compares experience with snap bean enterprises on the same farms for two consecutive years. For both years the average size of the enterprise was essentially the same. A higher yield per acre is indicated for 1978 on a planted acre basis. This increase is not due to greater production per acre harvested but rather is the result of a smaller acreage in 1978 that was left unharvested. In 1977 over 11 percent of the planted acres were not harvested because of poor harvest conditions. With excellent conditions in 1978, only 1.5 percent of the planted acres were unharvested.

Although costs, in general, continued their upward trend, the increased production and a higher return per ton for snap beans resulted in increased profits for 1978 compared to 1977.

Table 7. PROCESSING SNAP BEANS
Costs and Returns
1977 and 1978 Compared
Same 32 Farms, New York State

Item	1977	1978
Number of farms	32	32
Acres per enterprise	562	560
Yield per acre planted, tons*	2.2	2.4
Percent of acres harvested	88.5%	98.5%
Costs per acre planted:		
Growing	$214	$219
Harvesting	52	54
Production	$266	$273
Selling	18	21
Total costs per acre	$284	$294
Returns per acre	$312	$357
Profits per acre	$ 28	$ 63
Costs per ton:		
Growing	$ 98	$ 91
Harvesting	24	23
Production	$122	$114
Selling	8	9
Total costs per ton	$130	$123
Returns per ton	$143	$150
Profits per ton	$ 13	$ 27
Return per dollar of cost	$1.10	$1.21
Growing costs per acre for:		
Land	$ 47	$ 46
Fertilizer	26	25
Seed	67	67
Chemicals	19	18
Labor, tractor, equipment, overhead	42	49
Seed per acre, lbs.	95	95

*Paid weight

The following two tables also compare snap bean enterprises on the same farms for two consecutive years. Table 8 includes data from nine farms in the Western Area and Table 9 includes data from 14 farms in the Central Area. In both of these groups the increased yield resulted mostly from the harvest of a higher percentage of the acres planted in 1978 than in 1977. The yield per acre harvested was essentially the same for both groups.

The nine Western Area farms increased their acreage by an average of 50 acres per enterprise. Costs per acre tended to increase but returns increased more. The result was a modest increase in profit per acre. With an increase in size of enterprise and profit per acre, enterprise profits showed an average increase of about 50 percent. Table 8 compares data for these farms in 1977 and 1978.

Table 8. PROCESSING SNAP BEANS
Costs and Returns
1977 and 1978 Compared
Same 9 Farms, Western Area, New York

Item	1977	1978
Number of farms	9	9
Acres per enterprise	460	510
Yield per acre planted, tons*	1.9	2.0
Percent of acres harvested	90.2%	96.2%
Costs per acre planted:		
Growing	$179	$186
Harvesting	48	48
Production	$227	$234
Selling	12	14
Total costs per acre	$239	$248
Returns per acre	$277	$299
Profit per acre	$ 38	$ 51
Costs per ton:		
Growing	$ 94	$ 93
Harvesting	25	24
Production	$119	$117
Selling	6	7
Total costs per ton	$125	$124
Returns per ton	$146	$150
Profit per ton	$ 21	$ 26
Return per dollar of cost	$1.16	$1.21
Growing costs per acre for:		
Land	$ 33	$ 33
Fertilizer	22	23
Seed	61	60
Chemicals	17	18
Labor, tractor, equipment, overhead	39	43
Seed per acre, lbs.	91	87

*Paid weight

For the 14 growers in the Study in the Central Area, nearly all of the acres were harvested in 1978. These growers cut back on their cash costs for fertilizer, seed and chemicals per acre. This was the main reason for lower growing costs per acre in 1978. Harvesting and selling costs increased with higher production. The combination of lower costs and higher returns per ton along with a better yield resulted in significantly higher profits for these Central New York growers in 1978. Profits increased from $5 to $69 per acre (Table 9).

Table 9. PROCESSING SNAP BEANS
Costs and Returns
1977 and 1978 Compared
Same 14 Farms, Central Area, New York

Item	1977	1978
Number of farms	14	14
Acres per enterprise	317	312
Yield per acre planted, tons*	1.9	2.1
Percent of acres harvested	91.3%	99.8%
Costs per acre planted:		
Growing	$207	$193
Harvesting	53	54
Production	$260	$247
Selling	16	17
Total costs per acre	$276	$264
Returns per acre	$281	$333
Profit per acre	$ 5	$ 69
Costs per ton:		
Growing	$111	$ 90
Harvesting	29	25
Production	$140	$115
Selling	8	8
Total costs per ton	$148	$123
Returns per ton	$151	$155
Profit per ton	$ 3	$ 32
Return per dollar of cost	$1.02	$1.26
Growing costs per acre for:		
Land	$ 44	$ 41
Fertilizer	23	21
Seed	67	62
Chemicals	18	13
Labor, tractor, equipment, overhead	46	48
Seed per acre, lbs.	87	85

*Paid weight

In Tables 10 and 11 comparison of data is made for all farms interviewed in the 1977 and 1978 studies for each of the four Areas.

The Southwestern Area shows an increase in average size of enterprise. These growers had considerably improved harvest conditions resulting in more planted acres being harvested and a higher yield per acre planted for 1978. Actual yield per acre harvested was down slightly in 1978. Costs were higher in 1978 but not enough to offset the effects of the higher production and a $10 increase in returns per ton. Profits increased significantly for 1978.

In the Western Area the sample of growers was nearly the same for both years except for two small enterprise records not obtained in 1978. The comparison for the two years is also nearly the same as shown previously in Table 8. Costs were up slightly for 1978, returns increased $4 per ton and, with higher total production due to good harvest conditions, profits showed a modest improvement over 1977.

Table 10 compares 1977 and 1978 results for two snap bean producing Areas in the State.

Table 10. PROCESSING SNAP BEANS
Costs and Returns
1977 and 1978 Comparison by Areas
New York State

Item	Area			
	Southwestern Area		Western Area	
	1977	1978	1977	1978
Number of farms	7	8	11	9
Acres per enterprise	1,166	1,476	395	510
Yield per acre planted, tons*	2.5	2.8	1.9	2.0
Percent of acres harvested	84.1%	98.9%	90.3%	96.2%
Costs per acre planted:				
Growing	$237	$248	$180	$186
Harvesting	52	54	49	48
Production	$289	$302	$229	$234
Selling	19	27	12	14
Total	$308	$329	$241	$248
Returns per acre	$336	$409	$276	$299
Profits per acre	$ 28	$ 80	$ 35	$ 51
Costs per ton:				
Growing	$ 96	$ 89	$ 95	$ 93
Harvesting	21	19	26	24
Production	$117	$108	$121	$117
Selling	8	9	6	7
Total	$125	$117	$127	$124
Returns per ton	$136	$146	$146	$150
Profits per ton	$ 11	$ 29	$ 19	$ 26
Return per dollar of cost	$1.09	$1.24	$1.15	$1.21
Growing costs per acre for:				
Land	$ 55	$ 59	$ 33	$ 33
Fertilizer	30	30	22	23
Seed	69	71	61	60
Chemicals	23	24	17	18
Labor, tractor, eqpt, overhead	41	47	39	44
Seed per acre, lbs.	103	110	91	87

*Paid weight

Table 11 includes a comparison of all the snap bean enterprises in the Central Area included in the study for both 1977 and 1978. Comparisons of the same farms (Table 9) as well as for the whole groups for each year show similar results. Costs were generally lower per acre in 1978 particularly because of reductions in cash outlays for fertilizer, seed and chemicals. Returns increased about $3 per ton and, with more acres harvested at about the same yield per acre harvested, profits were much improved over 1977.

Growers in the Utica Area experienced increased costs to produce snap beans in 1978. However, they also received about $9 per ton more for their beans and, with a slight increase in yield, profits per acre increased from $37 in 1977 to an average of $51 in 1978.

Table 11. PROCESSING SNAP BEANS
Costs and Returns
1977 and 1978 Comparison by Area
New York State

Item	Area			
	Central Area		Utica Area	
	1977	1978	1977	1978
Number of farms	17	19	4	5
Acres per enterprise	293	374	574	350
Yield per acre planted, tons*	1.9	2.0	2.2	2.3
Percent of acres harvested	90.2%	98.9%	95.9%	98.7%
Costs per acre planted:				
Growing	$206	$187	$195	$206
Harvesting	53	48	57	62
Production	$259	$235	$252	$268
Selling	15	14	26	34
Total	$274	$249	$278	$302
Returns per acre	$280	$309	$315	$353
Profits per acre	$ 6	$ 60	$ 37	$ 51
Costs per ton:				
Growing	$111	$ 93	$ 91	$ 90
Harvesting	28	24	26	27
Production	$139	$117	$117	$117
Selling	8	7	12	15
Total	$147	$124	$129	$132
Returns per ton	$151	$154	$146	$155
Profits per ton	$ 4	$ 30	$ 17	$ 23
Return per dollar of cost	$1.02	$1.24	$1.13	$1.17
Growing costs per acre for:				
Land	$ 44	$ 35	$ 44	$ 43
Fertilizer	23	21	25	29
Seed	66	64	63	65
Chemicals	17	17	12	10
Labor, tractor, eqpt, overhead	47	46	42	51
Seed per acre, lbs.	87	86	85	88

*Paid weight

The following three tables contain the summary and analysis of all 41 snap bean enterprises in the Study for 1978. Table 14 provides a listing of selected factors for each enterprise to illustrate ranges and variations between enterprises.

Processing snap beans are a crop well adapted to New York conditions. For the grower who can control his costs by properly matching fixed costs to a size of enterprise large enough to justify the investment and who can expect an average yield in excess of two tons per planted acre, snap beans offer a profitable alternative to other less well adapted and more intensive processing vegetable crops.

Table 12.
FISCAL YEAR 1978

NEW YORK FARM COST ACCOUNTS
SUMMARY AND ANALYSIS OF CROP ENTERPRISE 4050 SNAP BEANS- PROC

FOR ALL FARMS
New York State

D E B I T S

	QTY	UNIT	TOTAL $	COST/ ACRE $
GROWING COSTS - OPER 1:				
1. LABOR	75,291	HR	376,524	15
2. TRACTOR	51,160	HR	314,778	12
3. TRUCK			26,615	1
4. EQUIPMENT			224,254	9
5. CUSTOM WORK, EQUIP RENT			51,830	2
6. LAND USE			1171,362	46
7. MANURE, COVER CROPS			180,280	7
8. LIME			56,705	2
9. FERTILIZER-N*	891,068	LB		
10. P*	016,320	LB		
11. K*	050,848	LB	658,345	26
12. SEED, PLANTS	459,228	LB	1672,389	66
13. SPRAY, DUST MATERIALS			499,325	20
14. INTEREST			61,185	2
15. ALL OTHER			185,710	7
HARVESTING COSTS - OPER 2:				
16. LABOR	64,016	HR	317,810	13
17. TRACTOR	427	HR	3,541	0
18. TRUCK			1,140	0
19. EQUIPMENT			840,855	33
20. CUSTOM WORK, EQUIP RENT			47,971	2
21. ALL OTHER			101,386	4
STORING & SELLING COSTS - OPER 3:				
22. LABOR	13,441	HR	67,471	3
23. TRACTOR, TRUCK			176,150	7
24. EQUIPMENT			24,548	1
25. BUILDING USE			0	0
26. INTEREST			139,732	6
27. ALL OTHER			124,637	5
28. TOTAL COSTS			$7,324,543	
29. GAIN			1700,889	
30. TOTAL DEBITS			$9,025,432	

* DETERMINED BY COST ACCOUNT STAFF

** VALUE OF BY-PRODUCT DEDUCTED

C R E D I T S

	QTY	UNIT	TOTAL $
31. CROP	60,521	TN	9,025,432
32. BY-PRODUCT			0
33. OTHER RETURNS			0
34. TOTAL RETURNS			$9,025,432
35. LOSS			0
36. TOTAL CREDITS			$9,025,432

F A C T O R S

A. ACRES *	25,256.4	AC
B. TOT GROW COST (SUM 1 THRU 15)	$5,479,302	
C. TOT HARV COST (SUM 16 THRU 21)	$1,312,703	
D. PRODUCTION COST (B+C)	$6,792,005	
E. TOT S & S COST (SUM 22 THRU 27)	$ 532,538	
F. NET** CROP COST (28-32)	$7,324,543	
G. TOT LABOR HOURS (1+16+22)	152,748	HR
H. TOT LABOR COST (1+16+22)	$ 761,805	
I. LABOR RETURNS (H+29-35)	$2,462,694	

AVERAGE PER ACRE

J. YIELD (31/A)	2.4	TN	
K. FERTILIZER - N (9/A)	35	LB	
L. P (10/A)	80	LB	
M. K (11/A)	42	LB	
N. SEED, PLANTS (12/A)	97	LB	
O. GROWING COST (B/A)	$ 217		
P. HARVESTING COST (C/A)	$ 52		
Q. PRODUCTION COST (O+P)	$ 269		
R. TOTAL COSTS (28/A)	$ 290		
S. TOTAL RETURNS (34/A)	$ 357		
T. PROFIT (S-R)	$ 67		
U. LABOR TO: GROW (1/A)	3	HR	
V. HARVEST (16/A)	3	HR	
W. PRODUCE (U+V)	6	HR	
X. LABOR RETURNS (I/A)	$ 98		
Y. TRACTOR: GROW (2/A)	2	HR	
Z. HARVEST (17/A)	0	HR	

AVERAGE PER UNIT

AA. GROWING COST (B/31)	$ 91	
BB. HARVESTING COST (C/31)	$ 22	
CC. NET** PRODUCTION COST (D-32)/31	$ 112	
DD. STORE & SELL COST (E/31)	$ 9	
EE. TOTAL COSTS (28/31)	$ 121	
FF. NET COST ** (F/31)	$ 121	
GG. TOTAL RETURNS (34/31)	$ 149	
HH. NET RETURNS ** (34-32)/31	$ 149	
II. PROFIT (HH-FF)	$ 28	

RETURNS

JJ. PROD / HR OF LABOR (31/(1+16))	0.4	TN
KK. RETURN PER HR OF LABOR (I/G)	$ 16.12	
LL. RETURN PER $ OF COST (34/28)	$ 1.23	

Table 13. SNAP BEANS- PROC
COSTS AND RETURNS PER ACRE
25,256 ACRES ON 41 COST ACCOUNT FARMS, 1978

ITEM		AVERAGE PER ACRE	
COSTS: GROWING:			
LABOR	3 HR	$ 15	
TRACTOR	2 HR	12	
TRUCK, EQUIPMENT		10	
CUSTOM WORK, EQUIP RENT		2	
LAND USE		46	
MANURE, LIME, COVER CROP		9	
FERT - LBS N- 35, P- 80, K- 42		26	
SEED, PLANTS	97 LB	66	
SPRAY, DUST MATERIALS		20	
INTEREST, ALL OTHER		11	
TOTAL GROWING COSTS			$ 217
HARVESTING:			
LABOR	3 HR	13	
TRACTOR	0 HR	0	
TRUCK, EQUIPMENT		33	
CUSTOM WORK, EQUIP RENT		2	
ALL OTHER		4	
TOTAL HARVESTING COSTS			52
TOTAL PRODUCTION COSTS			$ 269
STORING AND SELLING:			
LABOR	1 HR	3	
TRACTOR, TRUCK, EQUIP		8	
BUILDING USE		0	
INTEREST, ALL OTHER		10	
TOTAL STORING AND SELLING COSTS			21
TOTAL COSTS			$ 290
RETURNS:			
CROP - YIELD:	2.4 TN	$ 357	
BY-PRODUCT, OTHER RETURNS **		0	
TOTAL RETURNS			$ 357
PROFIT:			$ 67

		AVERAGE	
OTHER FACTORS:	COST PER TN TO: GROW	$ 91	
	HARVEST	22	
	STORE AND SELL	9	
	TOTAL (OR NET*) COST PER TN	121	
	TOTAL (OR NET*) RETURN ** PER TN	149	
	PROFIT PER TN	28	
	LABOR RETURN PER ACRE	$ 98	
	PRODUCTION PER HOUR OF LABOR	0.4	TN
	RETURN PER HOUR OF LABOR	$ 16.12	
	RETURN PER DOLLAR OF COST	1.23	

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

Table 14. PROCESSING SNAP BEANS
Selected Factors
All Areas, New York
25,256 Acres Planted on 41 Farms, 1978
(24,846 Acres Harvested)

Farm No.	Yield per Acre	Average per acre Planted			Average per ton*		Return per $ of cost
		Grow cost	Harvest cost	Profit	Costs	Returns	
	TN	$	$	$	$	$	$
135	2.9	282	46	73	121	146	1.21
116	3.1	237	59	128	107	148	1.39
120	2.3	249	54	12	140	145	1.04
117	3.2	236	65	156	103	152	1.47
106	2.4	242	42	46	121	140	1.16
105	2.9	213	71	93	110	143	1.29
122	2.7	220	58	65	108	132	1.22
121	1.0	221	78	-156	320	159	0.50
224	2.0	193	40	54	123	150	1.22
225	1.5	178	60	-21	163	149	0.91
226	2.8	189	59	165	97	156	1.61
228	1.7	178	41	21	138	150	1.09
223	1.7	184	47	11	140	146	1.05
230	2.4	167	57	129	99	152	1.54
227	2.2	180	41	82	103	140	1.35
229	2.3	217	46	82	123	158	1.29
232	1.7	189	149	-106	206	143	0.69
334	1.7	182	33	33	134	155	1.15
308	1.9	187	42	59	128	159	1.24
333	1.8	170	38	59	120	152	1.27
338	2.7	213	61	128	109	157	1.45
341	1.9	216	48	40	139	160	1.15
339	2.1	182	60	77	121	157	1.30
315	2.2	181	60	85	113	151	1.34
340	3.0	205	62	188	93	156	1.68
319	1.2	185	50	-51	200	158	0.79
314	2.2	155	59	94	106	148	1.39
302	2.4	191	65	47	124	143	1.16
331	2.7	195	85	93	116	151	1.30
307	2.0	205	61	-12	144	138	0.96
309	1.9	182	59	18	137	147	1.07
318	2.4	200	76	54	124	147	1.19
313	2.4	170	40	124	97	149	1.54
301	2.7	171	87	115	106	148	1.40
312	1.6	217	50	-45	181	153	0.84
310	2.6	169	81	102	107	147	1.37
404	2.4	208	68	80	130	163	1.25
411	1.8	202	69	-20	163	152	0.93
403	3.3	249	61	122	109	146	1.34
436	1.7	174	37	34	132	152	1.15
437	2.9	163	40	202	78	148	1.88
Range	1.0 to 3.3	155 to 282	33 to 149	-156 to 202	78 to 320	132 to 163	0.50 to 1.88
Weighted average	2.4	217	52	67	121	149	1.23

*Paid weight

PROCESSING BEETS - 1978

Trends in United States

Beets are one of the nine principle vegetables grown for processing in the United States. For the past several years, beets have ranked 8th in this group according to planted acreage. Even so, processing beets do not account for a large acreage - only about one percent of the total acreage of these nine principle processing vegetable crops. That amounted to 18,550 acres for beets in the United States for 1978. Table 15 illustrates some of the data for processing beets in the United States for the recent past.

Table 15. PROCESSING BEETS
Selected Factors, 1971-78
United States

Year	Acres		Yield per pltd acre	Total production	Avg. price per ton
	Planted	Harvested			
	ac	ac	tons	thous. tons	$
1971	14,070	13,690	13.5	190	21.40
1972	15,250	12,670	10.8	165	23.70
1973	17,890	16,400	11.2	201	28.70
1974	20,180	18,510	11.9	241	41.00
1975	19,410	18,080	11.9	231	40.50
1976	15,020	14,490	10.5	157	38.49
1977	16,240	14,120	12.7	206	40.65
1978	18,550	17,320	11.9	221	39.34

Source: Vegetables, Annual Summaries, Crop Reporting Board, ESCS, USDA.

Processing beets are grown in about nine states. Of these states, Wisconsin and New York continue to be the principle producing states. In the past decade these two states have planted at least two-thirds, and recently nearly three-fourths, of the total beet acreage in the country. Wisconsin continues to be the leading producer of table beets with New York, a distant second, normally growing about two-thirds the acreage grown by Wisconsin.

In the past eight years, yields in New York have usually been significantly higher than Wisconsin beet yields. Also, Wisconsin growers usually harvest a lower percent of planted acres than do their New York counterparts. Table 16 compares beet data for New York, Wisconsin and the United States in recent years.

Table 16. PROCESSING BEETS
Selected Factors
Major Producing States, 1971-78

Year	State	Acres Planted	Acres Harvested	Yield per pltd acre	Total production	Avg. price per ton
		ac	ac	tons	thous. tons	$
1971	NY	4,000	4,000	18.3	73	18.40
	Wisc.	6,000	5,800	11.3	68	21.50
	U.S.	14,070	13,690	13.5	190	21.40
1972	NY	4,100	3,500	11.8	48	21.10
	Wisc.	6,200	4,500	10.2	63	22.20
	U.S.	15,250	12,670	10.8	165	23.70
1973	NY	4,400	4,200	15.0	66	27.00
	Wisc.	7,300	6,600	8.3	61	26.20
	U.S.	17,890	16,400	11.2	201	28.70
1974	NY	5,400	5,100	16.0	86	36.30
	Wisc.	8,600	8,100	10.0	86	34.20
	U.S.	20,180	18,510	11.9	241	41.00
1975	NY	4,900	4,900	15.5	76	38.30
	Wisc.	8,200	7,300	11.0	90	36.60
	U.S.	19,410	18,080	11.9	231	40.50
1976	NY	4,700	4,700	12.0	56	35.30
	Wisc.	6,600	6,300	8.8	58	35.90
	U.S.	15,020	14,490	10.5	157	38.50
1977	NY	4,600	3,600	11.2	52	35.00
	Wisc.	7,600	6,900	12.5	95	36.60
	U.S.	16,240	14,120	12.7	206	40.70
1978	NY	5,300	5,000	13.6	72	39.20
	Wisc.	8,100	7,600	11.6	94	36.30
	U.S.	18,550	17,320	11.9	221	39.30

Source: Vegetables, Annual Summaries, Crop Reporting Board, ESCS, USDA.

Trends in New York State

During the period from 1949 to 1958, harvested beet acreage in New York ranged from a low of 3,600 acres in 1951 to a high of 4,800 acres in 1955 and averaged 4,280 per year. According to the 1964 Agricultural Census, New York growers harvested 4,236 acres of beets that year. Table 17 shows that, in the seventies, harvested beet acreage ranged from 3,500 acres in 1972 to 5,100 acres in 1974 and stood at 5,000 acres in 1978, the year of this study. Yields per planted acre have increased from an average of less than 11 tons per acre in the fifties to, perhaps, 14 tons per acre in the seventies.

With a modest increase in beet acreage and a significant increase in yield, total production of beets in New York has increased 50 percent over the past 30 years. The price growers received for beets was generally in the low twenty dollar range until in the early seventies when prices began increasing. Prices have ranged from $35 to $40 per ton for the past five years (Table 17).

Table 17. PROCESSING BEETS
Selected Factors, 1971-78
New York State

Year	Acres		Yield per pltd acre	Total production	Avg. price per ton
	Planted	Harvested			
	ac	ac	tons	thous. tons	$
1949-58 avg.	--	4,280	10.5	45	21.04
1971	4,000	4,000	18.3	73	18.40
1972	4,100	3,500	11.8	48	21.10
1973	4,400	4,200	15.0	66	27.00
1974	5,400	5,100	16.0	86	36.30
1975	4,900	4,900	15.5	76	38.30
1976	4,700	4,700	12.0	56	35.30
1977	4,600	3,600	11.2	52	35.00
1978	5,300	5,000	13.6	72	39.20

Source: New York Agricultural Statistics, 1977; N.Y. Crop Reporting Service.

The areas of beet production in New York State have not changed much in the past 25 years. However, beet acreage in various counties has changed. Acreage has increased significantly in Genesee and Yates Counties and has decreased in Wayne and Suffolk Counties. Ontario and Livingston Counties have shown only modest increases in beet acreage. Today Ontario and Genesee Counties produce the bulk of processing beets grown in New York State (Table 18).

Table 18. ACRES OF BEETS HARVESTED IN NEW YORK STATE BY COUNTIES, CENSUS YEARS 1954, 1964 and 1974

County	1954		1964		1974	
	Farms	Acres	Farms	Acres	Farms	Acres
	No	Ac	No	Ac	No	Ac
Erie	92	140	44	71	15	120
Genesee	16	334	6	949	5	1,594
Livingston	16	181	7	96	6	234
Ontario	151	2,367	63	2,209	33	2,438
Suffolk	88	159	58	64	27	37
Wayne	160	460	46	301	6	194
Yates	118	224	10	346	5	540
All other	678	507	264	200	82	39
Total	1,219	4,372	498	4,236	179	5,196

Source: U.S. Census of Agriculture.

The 1978 Study

Data for a total of 23 processing beet enterprises were obtained for the 1978 study. One enterprise was not included in the averages because its large size would have unduly affected the results. Accordingly, data for 22 beet enterprises are summarized to show the results for the State as a whole for the majority of producers. Next, three groups based on size of enterprise are compared to study differences resulting from scale of the beet enterprise. Finally, the State group is divided into two groups to show the effects on profits of other factors such as yield, price received and costs.

These 22 beet enterprises included a total of 2,490 acres of beets planted of which 2,449 acres were harvested. Thus, the Study results average together nearly half of the total acreage in the State and an estimated half of the processing beet producers. The beet enterprises on these farms averaged 113 acres in size and had yields averaging 14.9 tons per acre - somewhat higher than the yield estimated by the Crop Reporting Service.

Results of the State

Growing costs for processing beets averaged $306 per acre for the 22 enterprises included in this study for 1978. With an average yield of 14.9 tons of beets delivered to the processor, the crop cost $20.49 per ton to grow to the time of harvest. Table 19 shows that beets required 8.8 hours of farm labor and 4.5 hours of tractor use to perform the work necessary to grow the crop on these farms. Fertilizer was applied to average 163 pounds of nitrogen, 132 pounds of

phosphorus and 154 pounds of potash per acre in addition to the normal 500 pounds of salt per acre. Beets were seeded at an average rate of 23 pounds of seed per acre.

Cash costs for fertilizer, seed and chemcials accounted for 46 percent of the total growing costs. Other major costs include labor costs at $41 and land costs at $55 per acre.

Table 19. PROCESSING BEETS
Growing Costs
(2,449 Acres Harvested) New York, 1978
2,490 Acres Planted on 22 Farms

Item	Rates per Acre	Cost Per Acre	Cost Per Ton
Number of farms		22	
Acres per enterprise		113	
Yield per acre planted, tons*		14.9	
Labor	8.8 hr.	$ 41	$2.76
Tractor	4.5 hr.	22	1.47
Equipment, large trucks		17	1.13
Custom work, equipment rent		2	.16
Land use		55	3.68
Lime, cover crop, manure		9	.57
Fertilizer: lbs.	N-163, P-132, K-154	64	4.30
Seed:	23 lbs.	53	3.51
Chemicals		23	1.54
Interest on operating capital		3	.23
All other		17	1.14
Total growing cost		$306	$20.49

* Paid weight

In this study, harvesting costs are defined as those costs related to the actual harvest operation including the costs to haul beets to a central point on the farm to stockpile temporarily or to load beets on trucks to be hauled directly to the processor. Costs to load beets from a stockpile or to haul off the farm are not included as harvest costs.

Within this context, processing beets cost $104 per acre to harvest in 1978. A total of 5.8 hours of labor at a cost of $32 per acre and equipment costs of $50 per acre were the major costs of the harvest operation.

With harvesting costs of $104 per acre, the average yield of 14.9 tons per acre resulted in a harvesting cost of $7 per ton of paid beets (Table 20).

Table 20. PROCESSING BEETS
Harvesting Costs
New York, 1978
2,490 Acres, 22 Farms

Item		Cost Per Acre	Cost Per Ton
Number of farms		22	
Acres per enterprise		113	
Yield per acre planted, tons*		14.9	
Labor	5.8 hr./ac.	$ 32	$2.13
Tractor		3	.19
Large truck		8	.55
Equipment		50	3.29
Custom work, equipment rent		3	.22
All other		8	.56
Total harvesting costs		$104	$6.94

* Paid weight

As mentioned earlier, selling costs for processing beets include the cost to haul the crop to the buyer. In many cases beets were temporarily stockpiled on the farm to keep the harvest operation going. The cost to load the beets from the pile is included as a selling cost. Labor, tractor and truck costs were the largest cost items in selling the beet crop. Totaling $39 per acre, they accounted for nearly two-thirds of the $59 per acre selling cost. Another important cost was interest at $10 per acre to recognize the cost to the grower for crop proceeds tied up as accounts receivable with the cooperatives through which the crop was marketed. Total selling costs amounted to $4 per ton (Table 21).

Table 21. PROCESSING BEETS
Selling Costs
New York, 1978
2,490 Acres, 22 Farms

Item	Cost Per Acre	Cost Per Ton
Number of farms	22	
Acres per enterprise	113	
Yield per acre planted, tons*	14.9	
Labor	$14	$ .94
Tractor, truck	25	1.66
Equipment	1	.07
Custom haul	7	.46
Interest on accounts receivable	10	.67
All other	2	.13
Total selling costs	$59	$3.93

* Paid weight

With growing costs of $306 and harvesting costs of $104 per acre, production costs for processing beets in 1978 averaged $410 per acre for these 22 growers. Adding to that figure the selling costs of $59 per acre brings the total cost to produce and market beets to $469 per acre or $31 per ton (Table 22).

Processing beet growers in New York State market their crop through three buyers, two of which are cooperatives. In determining returns for the beet crop, cash receipts plus accounts receivable based on the cooperatives' final commercial market value were included. No effort was made to estimate a value for retained earnings which might also be received from the cooperatives. Therefore, the average returns of $41 per ton do not include any estimate of retained earnings for the beet crop. At the average yield of 14.9 tons per acre, returns for beets for these growers averaged $614 per acre.

Table 22. PROCESSING BEETS
Costs and Returns
New York, 1978
2,490 Acres, 22 Farms

Item		Cost or Return Per Acre	Per Ton
Number of farms		22	
Acres per enterprise		113	
Yield per acre, tons*		14.9	
Costs to:	Grow	$306	$20
	Harvest	104	7
	Produce	$410	$27
	Sell	59	4
	Total costs	$469	$31
Returns		$614	$41
Profit		$145	$10
Return per dollar of cost		$1.31	

* Paid weight

Beets were profitable for most growers in 1978. Only four of the 22 growers experienced a loss on their beet enterprise. For the whole group, profits averaged $145 per acre and $10 per ton. For each dollar of cost expended on the beet crop in 1978, these 22 producers received a return of $1.31 as shown in Table 22.

Results Based on Size of Enterprise

Size of enterprise frequently has an effect on various factors related to the enterprise. Whether to hire a job done or do it yourself is largely determined by the amount of work to be done and other demands on existing resources. In comparing the general characteristics and results based on size, the group of 22 beet growers was divided into three smaller groups as shown in Table 23.

Table 23. PROCESSING BEETS
Costs and Returns per Acre
by Size of Enterprise
22 Farms, New York, 1978

Item		50 ac. or less	51 to 150 ac.	151 to 300 ac.	All farms
Number of farms		7	8	7	22
Acres per enterprise		36	108	196	113
Yield per acre, tons*		13.6	12.7	16.6	14.9
		$	$	$	$
		per acre planted			
Costs to:	Grow	290	295	316	306
	Harvest	126	108	97	104
	Produce	416	403	413	410
	Sell	61	50	64	59
	Total costs	477	453	477	469
Returns		624	522	670	614
Profit		147	69	193	145
Return per dollar of cost		1.31	1.15	1.41	1.31

* Paid weight

As size of enterprise increased there tended to be an increase in growing costs and a decrease in harvesting costs per acre. As far as growing costs were concerned, large enterprises had higher labor costs primarily due to the added time required to travel greater distances to perform the various growing operations. Also, larger enterprises tended to use more cover crop, fertilizer, seed and chemicals and to have somewhat higher overhead costs.

Harvesting costs per acre decreased as size of enterprise increased mainly because of lower equipment costs. The smaller group included the only growers who hired their beets harvested on a custom basis. This tended to increase their harvest costs but, considering their size of enterprise and the investment required for harvest equipment, they, no doubt, had made the right decision. The larger size enterprises had the lowest harvest equipment costs as well as the lowest harvest costs because of the greater efficiencies they obtained as they spread fixed costs over more acres.

The greatest effect of size on these beet enterprises was the magnitude of enterprise profits. If the enterprise is well managed with resultant good production, total profits can be significant even without top yields. However, in this comparison of beet enterprises, the group having the largest size also obtained the highest yields - well above the other two size groups. This group also received the lowest average price for beets. Thus, even though these growers' costs were among the highest and their returns per ton were the lowest of the three groups, their yield was high enough to earn the greatest profit per acre and, obviously, the highest enterprise profits.

Results Based on Yield

To study the effects of beet yield on profits, the group of 22 enterprises was divided in half after being ranked according to yield. Accordingly, the low yield group had yields ranging from 4.7 to 14.3 tons which averaged 11.6 tons of beets per acre. The high yield group had yields ranging from 14.4 to 25.3 tons with an average of 17.7 tons of beets per acre. The higher yielding group had a somewhat larger acreage of beets in the enterprise as shown in Table 24.

Table 24. PROCESSING BEETS
Costs and Returns per Acre
Based on Yield
22 Farms, New York, 1978

Item	Yield Per Acre			
	Under 14.4 tons		Over 14.3 tons	
Number of farms	11		11	
Acres per enterprise	103		124	
Yield per acre, tons*	11.6		17.7	
	Per Acre	Per Ton	Per Acre	Per Ton
Costs:				
Grow	$302	$26	$309	$17
Harvest	107	9	101	6
Produce	$409	$35	$410	$23
Sell	44	4	72	4
Total costs	$453	$39	$482	$27
Returns	$471	$41	$733	$41
Profit	$ 18	$ 2	$251	$14
Return per dollar of cost	$1.04		$1.52	
	Per Acre			
Other factors -				
Land cost	$50		$59	
Fertilizer cost	$58		$69	
LB per acre: N	141		182	
P	122		141	
K	149		159	
Seed cost	$57 (25 lb)		$49 (22 lb)	
Chemical cost	$25		$21	
Cover crop cost	$ 6		$11	

*Paid weight

The cost of producing beets for these two groups was quite similar on a per acre basis. Growing costs for the low yield group were $7 less and harvesting costs were $6 more per acre than for the high yield group. Reasons for the higher growing costs for the high yield group are shown in Table 24 as some of the cost items are compared. Beet growers having the higher yields tended to use higher valued land, and more fertilizer and they made greater use of cover crops to maintain or improve the soil structure of their cropland. On the other hand, the high yield group generally used less seed and chemicals per acre than did the low yield group of beet enterprises.

The major difference in harvest costs for the two groups was in equipment costs. Harvest equipment costs per acre were about $11 less for the high yield group. This is likely more related to the larger acreage of the high yield group reflecting efficiencies gained by spreading fixed costs over more units of production.

The cost of selling or hauling the crop to the processor was considerably higher for the high yield group. This is to be expected since the cost of hauling is directly related to production per acre and hauling distance. On a per ton basis, selling costs averaged $4 for both groups.

Returns averaged $41 per ton for both groups and, in spite of the higher total costs per acre for the high yield group, profits were significantly different for the two groups. The 50 percent higher yield for the high yield group resulted in profits of $233 more per acre than for the low yield group. The four enterprises that did show a loss were all in the low yield group. While both groups showed a gain on the average for the enterprise, the effects of a good yield are readily apparent in the Table 24 comparison.

When the group of 22 beet enterprises is ranked according to profit per acre and divided into two groups, the groups are nearly identical with the high and low yield groups. Thus, in this study of beet enterprises high yield is very close to being synonymous with high profits.

Other Factors as Related to Profits

In addition to yield or production, costs and price are important in determining profits. Costs must be controlled but always within the framework of good management. Lack of fertilizer or inadequate pest control may result in lower costs but are very likely to reduce yields and profits. Costs should be controlled wisely and in a manner that will provide the quantity and quality of inputs that will make a good yield possible under conditions where the uncontrollable factors are favorable.

Irrigation was used to some extent by five of the 22 beet growers in the Study. Three of the five growers had yields below average for the whole group of 22 growers but all five beet enterprises were profitable.

When the 22 beet enterprises are ranked according to total cost per acre, divided into two groups and compared, the higher cost group also had the higher profits. Even though costs were $68 per acre higher, the high cost group still had profits averaging $66 more per acre than the low cost group. The price received for beets was the same for both groups and averaged $41 per ton. The higher profits are directly related to a 25 percent higher yield for the high cost group. The higher level of fertilizer use and greater use of cover crop seemed to accompany higher yields and profits.

Although price has an important effect on profits, the individual grower has little influence on the price he receives except as he controls quality or, perhaps, produces for a special market. Frequently, a higher price because of early production or high quality results in a reduced yield. In any case, price must be such that the producer both maintains his market and receives a profit over the years.

The following three tables contain the summary and analysis of all 22 beet enterprises in the Study for 1978. Table 27 provides a listing of selected factors for each enterprise to illustrate ranges and variations between enterprises.

Table 25.
FISCAL YEAR 1978

NEW YORK FARM COST ACCOUNTS
SUMMARY AND ANALYSIS OF CROP ENTERPRISE 4060 TABLE BEETS

(22)
FOR ALL FARMS
New York State

DEBITS

	QTY	UNIT	TOTAL $	COST/ ACRE $
GROWING COSTS -- OPER 1:				
1. LABOR	21,897	HR	102,666	41
2. TRACTOR	11,197	HR	54,661	22
3. TRUCK			2,583	1
4. EQUIPMENT			39,432	16
5. CUSTOM WORK, EQUIP RENT			6,126	2
6. LAND USE			136,749	55
7. MANURE, COVER CROPS			19,463	8
8. LIME			1,856	1
9. FERTILIZER-N*	406,939	LB		
10. P*	329,400	LB		
11. K*	384,202	LB	160,019	64
12. SEED, PLANTS	57,634	LB	130,714	52
13. SPRAY, DUST MATERIALS			57,118	23
14. INTEREST			8,592	3
15. ALL OTHER			42,424	17
HARVESTING COSTS -- OPER 2:				
16. LABOR	14,548	HR	79,227	32
17. TRACTOR	1,601	HR	7,078	3
18. TRUCK			20,430	8
19. EQUIPMENT			122,531	49
20. CUSTOM WORK, EQUIP RENT			8,228	3
21. ALL OTHER			20,641	8
STORING & SELLING COSTS -- OPER 3:				
22. LABOR	6,870	HR	35,136	14
23. TRACTOR, TRUCK			61,990	25
24. EQUIPMENT			2,421	1
25. BUILDING USE			1,600	1
26. INTEREST			24,858	10
27. ALL OTHER			20,171	8
28. TOTAL COSTS			$1,166,714	
29. GAIN			363,039	
30. TOTAL DEBITS			$1,529,753	

* DETERMINED BY COST ACCOUNT STAFF

** VALUE OF BY-PRODUCT DEDUCTED

CREDITS

	QTY	UNIT	TOTAL $
31. CROP	37,201	TN	1,529,753
32. BY-PRODUCT			0
33. OTHER RETURNS			0
34. TOTAL RETURNS			$1,529,753
35. LOSS			0
36. TOTAL CREDITS			$1,529,753

FACTORS

A. ACRES *		2,449.0	AC HARV
		2,490.0	AC PLTD
B. TOT GROW COST	(SUM 1 THRU 15)	$ 762,403	
C. TOT HARV COST	(SUM 16 THRU 21)	$ 258,135	
D. PRODUCTION COST	(B+C)	$1,020,538	
E. TOT S & S COST	(SUM 22 THRU 27)	$ 146,176	
F. NET** CROP COST	(28-32)	$1,166,714	
G. TOT LABOR HOURS	(1+16+22)	43,315	HR
H. TOT LABOR COST	(1+16+22)	$ 217,029	
I. LABOR RETURNS	(H+29-35)	$ 580,068	

AVERAGE PER ACRE

J. YIELD	(31/A)	14.9	TN
K. FERTILIZER - N	(9/A)	163	LB
L. P	(10/A)	132	LB
M. K	(11/A)	154	LB
N. SEED, PLANTS	(12/A)	23	LB
O. GROWING COST	(B/A)	$ 306	
P. HARVESTING COST	(C/A)	$ 104	
Q. PRODUCTION COST	(O+P)	$ 410	
R. TOTAL COSTS	(28/A)	$ 469	
S. TOTAL RETURNS	(34/A)	$ 614	
T. PROFIT	(S-R)	$ 145	
U. LABOR TO: GROW	(1/A)	9	HR
V. HARVEST	(16/A)	6	HR
W. PRODUCE	(U+V)	15	HR
X. LABOR RETURNS	(I/A)	$ 233	
Y. TRACTOR: GROW	(2/A)	4	HR
Z. HARVEST	(17/A)	1	HR

AVERAGE PER UNIT

AA. GROWING COST	(B/31)	$ 20
BB. HARVESTING COST	(C/31)	$ 7
CC. NET** PRODUCTION COST	(O-32)/31	$ 27
DD. STORE & SELL COST	(E/31)	$ 4
EE. TOTAL COSTS	(28/31)	$ 31
FF. NET COST **	(F/31)	$ 31
GG. TOTAL RETURNS	(34/31)	$ 41
HH. NET RETURNS **	(34-32)/31	$ 41
II. PROFIT	(HH-FF)	$ 10

RETURNS

JJ. PROD / HR OF LABOR	(31/(1+16))	1.0 TN
KK. RETURN PER HR OF LABOR	(I/G)	$ 13.39
LL. RETURN PER $ OF COST	(34/28)	$ 1.31

Table 26. TABLE BEETS
COSTS AND RETURNS PER ACRE
2,490 ACRES ON 22 COST ACCOUNT FARMS, 1978

ITEM		AVERAGE PER ACRE	
COSTS: GROWING:			
LABOR	9 HR	$ 41	
TRACTOR	4 HR	22	
TRUCK, EQUIPMENT		17	
CUSTOM WORK, EQUIP RENT		2	
LAND USE		55	
MANURE, LIME, COVER CROP		9	
FERT - LBS N- 163, P- 132, K- 154		64	
SEED, PLANTS	23 LB	52	
SPRAY, DUST MATERIALS		23	
INTEREST, ALL OTHER		21	
TOTAL GROWING COSTS			$ 306
HARVESTING:			
LABOR	6 HR	32	
TRACTOR	1 HR	3	
TRUCK, EQUIPMENT		57	
CUSTOM WORK, EQUIP RENT		3	
ALL OTHER		9	
TOTAL HARVESTING COSTS			104
TOTAL PRODUCTION COSTS			$ 410
STORING AND SELLING:			
LABOR	3 HR	14	
TRACTOR, TRUCK, EQUIP		26	
BUILDING USE		1	
INTEREST, ALL OTHER		18	
TOTAL STORING AND SELLING COSTS			59
TOTAL COSTS			$ 469
RETURNS:			
CROP - YIELD:	14.9 TN	$ 614	
BY-PRODUCT, OTHER RETURNS **		0	
TOTAL RETURNS			$ 614
PROFIT:			$ 145

		AVERAGE	
OTHER FACTORS: COST PER TN TO:	GROW	$ 20	
	HARVEST	7	
	STORE AND SELL	4	
TOTAL (OR NET*) COST PER TN		31	
TOTAL (OR NET*) RETURN ** PER TN		41	
PROFIT PER TN		10	
LABOR RETURN PER ACRE		$ 233	
PRODUCTION PER HOUR OF LABOR		1.0	TN
RETURN PER HOUR OF LABOR		$ 13.39	
RETURN PER DOLLAR OF COST		1.31	

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

Table 27.

PROCESSING BEETS
Selected Factors
New York, 1978
2,490 acres on 22 Farms

Farm No.	Yield per Acre	Average per acre Planted			Average per ton*		Return Per $ of cost
		Grow cost	Harvest cost	Profit	Costs	Returns	
	TN	$	$	$	$	$	$
316	15.8	324	99	150	31	40	1.31
309	17.0	323	83	206	27	39	1.45
207	25.3	288	126	516	21	42	1.97
219	13.0	269	104	90	34	41	1.20
314	17.1	332	75	207	27	39	1.45
301	12.5	341	85	78	36	42	1.17
315	14.3	335	103	73	34	39	1.15
105	4.7	265	106	-247	85	32	0.38
323	14.1	341	114	150	35	46	1.30
220	16.5	268	75	336	25	46	1.81
313	11.1	296	129	- 25	40	38	0.95
222	14.5	311	119	7	35	36	1.01
318	14.4	264	107	179	30	43	1.41
311	13.7	287	85	150	29	40	1.38
317	16.9	344	141	133	33	41	1.24
203	20.2	315	124	486	25	49	1.95
208	7.0	252	201	-227	77	45	0.58
310	8.1	264	100	-136	48	31	0.65
221	17.6	280	84	682	25	64	2.52
312	17.9	326	115	111	26	33	1.24
204	12.8	310	110	48	36	40	1.10
202	12.8	311	104	61	37	42	1.13
Range	4.7 to 25.3	252 to 344	75 to 201	-247 to 682	21 to 85	31 to 64	0.38 to 2.52
Weighted average	14.9	306	104	145	31	41	1.31

*Paid weight