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COSTS AND RETURNS IN PRODUCING SWEET CORN FOR PROCESSING

88 Farms, Western New York

1955

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INTRODUCTION

Sweet corn is one of the four most important vegetable crops for processing grown in New York. Together with peas, tomatoes, and snap beans it provides the primary basis for the vegetable processing industry in the state. Most of this crop is grown in Western New York. The Genesee valley is the center of production; most of the farms producing sweet corn for processing are located in Livingston, Genesee, Wyoming, Monroe and Ontario Counties. On these farms sweet corn is usually not the most important source of farm income, but still one of the big cash crops.

Areas of Sweet Corn Production

Nearly two-thirds of the national pack of sweet corn is produced in the northern Corn Belt states of Minnesota, Wisconsin, Illinois, Iowa, Indiana, and Ohio. (see table 1.) New York producers supply about 5 percent of the total. During the last fifteen years New York's share of the national total has declined somewhat.

TABLE 1. ACREAGE PRODUCTION AND YIELD IN THE MAJOR SWEET CORN PRODUCING STATES (5 Year Averages 1951 - 55)

State	Production* (thous. tons)	Acreage (000's)	Yield (tons per acre)
Minnesota	197.0	88.2	2.2
Wisconsin	194.7	101.5	1.9
Illinois	135.2	62.5	2.2
Washington	50.2	15.0	3.3
Maryland	49.0	32.9	1.5
Iowa	47.7	24.6	1.9
New York	43.8	22.2	2.0
Oregon	43.7	14.4	3.1
Indiana	36.0	27.2	1.4
Ohio	20.3	11.6	1.8
All other states	120.2	54.0	2.2
United States	937.8	454.1	2.1

Source: Agricultural Statistics

*Net tonnage and yields (sweet corn without husks) obtained from gross tons reported by multiplying by 0.68, the average percentage of husked corn in one ton.

New important producing areas have developed in the irrigated valleys of Washington, Oregon and Idaho. On the east coast there is some concentration of production in Maryland. While nearly all of the other states pack some sweet corn, as a group they represent only 10 - 12 percent of the annual pack.

Yields

Sweet corn yields have been increasing in New York at about the same rate as the national average yield. (see figure 1) However in two of the three leading states, Minnesota and Illinois, average yields are from 10 to 15 percent above those in New York. The irrigated producing areas in the West have yields 50 percent or more above the New York and national averages. Considered as a whole New York yields do not compare very favorably with those in the major production areas.

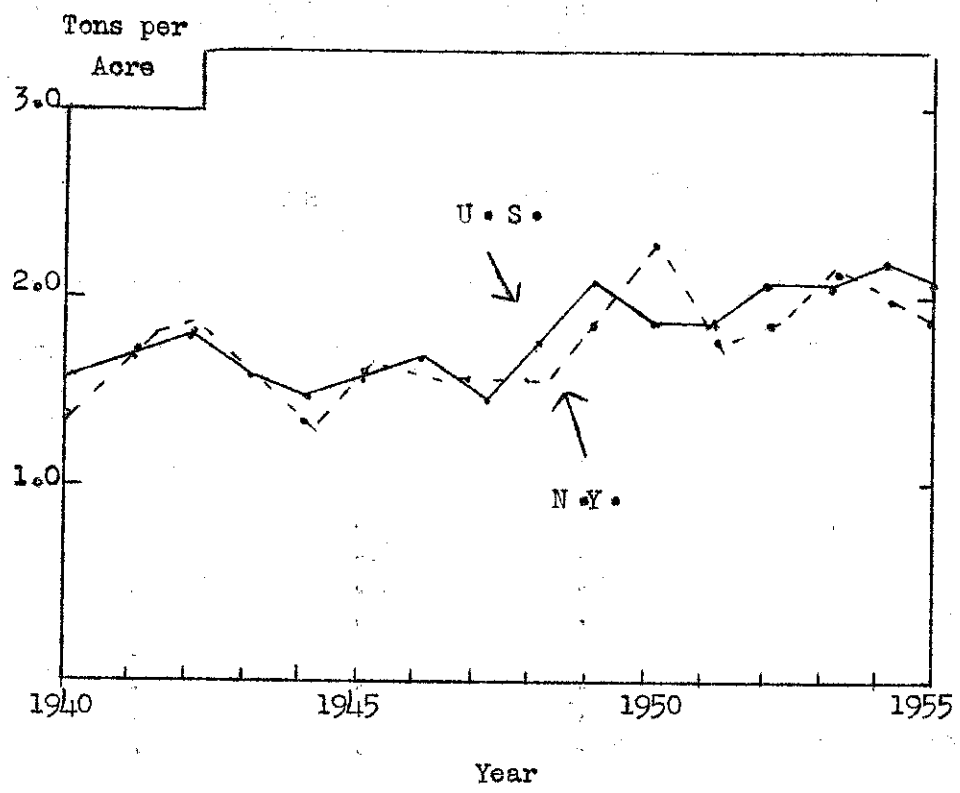


FIGURE 1. NET AVERAGE YIELD PER ACRE OF SWEET CORN FOR PROCESSING (New York and United States)

Organization of Study

This report summarizes a study of costs and returns in producing sweet corn for processing during 1955 in the major producing area of New York. A similar study was completed in the same area for the 1954 crop year including results from 37 randomly selected enterprises. The production area considered then included farms in Genesee, Livingston, Monroe, and Wyoming Counties. In 1955 this area was broadened to include farms in Ontario County as well.

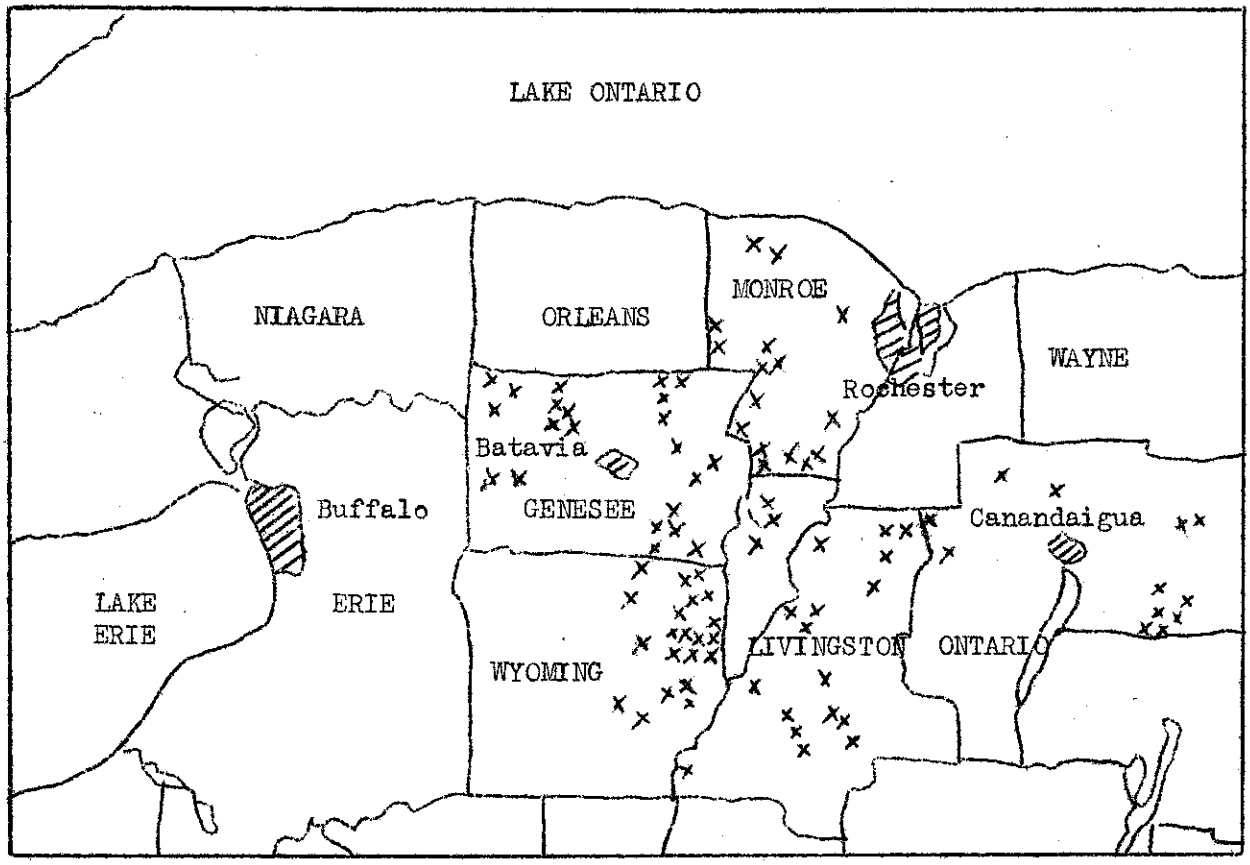


FIGURE 2. LOCATION OF SWEET CORN PRODUCERS STUDIED (88 Western New York Farms, 1955)

Lists of producers were obtained from processors packing sweet corn in Western New York for the purpose of selecting a sample of enterprises for study in 1955. Contracted acreage per farm ranged quite widely. However about 70 percent of the total sweet corn acreage and half of the growers were in a group producing between 15 and 75 acres per farm. This was the population selected for study. Within this population it was expected that there would be no particular economies of scale in the range between 15 and 75 acres of the crop. Thus the very small and possibly non-commercial producers of sweet corn were eliminated along with the few very large operations which did their own harvesting.

The final sample drawn for study in 1955 included 88 sweet corn enterprises. All of the 37 growers enumerated in 1954 were originally included. Of the 37 only 23 producers qualified as "repeaters" in 1955. Eleven did not grow the crop while three produced less than 15 acres this year. In addition to the previously studied group, 65 new enterprises were randomly selected from the compiled lists stratified by counties. This final sample included about one-third of the enterprises listed with from 15 - 75 acres of sweet corn contracted. The 2,547 acres of corn they grew amounted to 20 percent of the total acreage harvested in the state. The general location and distribution of these enterprises in the five counties is shown in figure 2.

Any sample of farms drawn from a population may not be exactly representative of the whole group. However the information and averages presented for this sample of enterprises should indicate reasonably well what happened on sweet corn enterprises of this size in Western New York during 1955. Variability in yields from farm to farm was relatively great. Insofar as possible the nature of difference between enterprises within the sample will be indicated along with the general averages. The results should be applicable for comparison with most enterprises of less than 100 acres.

Description of Farms Studied

Most of the sweet corn enterprises were located on units that can perhaps best be classified as dairy-crop farms. Of the 88 enterprises, 50 were part of a farm business on which most of the cash income came from the sale of milk and such crops as corn for grain, wheat, dry beans, canning peas or sweet corn. Another 13 were on strictly crop farms with a minimum of intensive vegetable crops. There were also 10 of the sweet corn enterprises on general or livestock farms.

On none of the 73 full time farms was sweet corn the major source of farm income. The remaining 15 commercial sweet corn enterprises were operated by men who could not be classified as active full-time farmers. There were eleven part-time operations where more than half of the operator's income came from work other than farming. Four other enterprises were run by semi-retired farmers who had no other

TABLE 2. SOME CHARACTERISTICS OF THE FARMS ON WHICH THE SWEET CORN ENTERPRISE WAS STUDIED (88 Western New York Farms, 1955)

Description	Your farm	Average for all farms
Number of farms		88
Acres of sweet corn		29
Acres operated:		
Owned		212
Rented		87
Total operated		299
Use of cropland: (acres)		
Vegetable crops		50
Corn and small grain		94
Hay and pasture		83
Fruit and other		7
Total cropland		234
Work units:		
Crops		284
Livestock		274
Total work units		558
Number of dairy cows (average of 50 dairy farms)		34

source of income, but who operated less than full-time farm businesses. Yields of sweet corn on the part-time farms were not significantly different from those on the full time farms. Some of the most profitable enterprises were managed by men who worked elsewhere most of the time. Since sweet corn is a relatively extensive vegetable crop requiring relatively small amounts of labor before harvest, the part-time operator can be and often is very successful with this enterprise.

AVERAGE COSTS AND RETURNS IN 1955

It is the purpose of this report to describe the organization and operation of commercial sweet corn enterprises of from 15 to 75 acres in Western New York during 1955. These results can be used by individual producers to make comparisons with their respective enterprises. They indicate how a major group of producers used their resources in producing this crop for processing. Each farm was counted equally in determining the averages presented in the tables. The amount and nature of variation from these averages will be discussed in the text.

Practices and Inputs Used in Growing Sweet Corn

Labor - Producing an acre of sweet corn requires relatively little man labor compared with other vegetable crops for processing. Only two producers did a part of the harvesting themselves with mechanical pickers. Most hired the processor to do the picking and hauling of their crops. Once the crop is planted very little needs to be done until harvest except for cultivation and weed control. The most common number of cultivations was two. Because of short crops and a dry year or good chemical weed control, 30 farmers cultivated only once or not al all. There were also 23 who cultivated three or more times. Chemical weed control was used by 35 percent of the growers.

Variation from farm to farm in the number of hours required to grow sweet corn was not great. Over half of the producers spent from four to six man hours per acre growing the crop. No one spent more than 12 or less than 2.5 hours on each acre and 93 percent were within a range of between three and eight hours. Tractor use was even less variable. Again over half the growers used a tractor from four to six hours per acre in growing the crop. All tractor use fell within a range of from two to nine hours per acre.

Seed - The most common seeding rates were 7 and 8 lbs. per acre. With 75 percent germination this would provide from 17,000 - 20,000 plants per acre. However germination in general was poor and stands were often irregular and spotty. There was a range in seeding rates from 5 to 13 lbs. per acre. At least some of this variation was due to differences in the size of seed for different varieties. The most common variety planted was Victory Golden. Next most important were Seneca Crown and Tendermost. Golden Cross and Golden Crown were also used by five or more growers.

TABLE 3. AVERAGE AMOUNTS OF INPUTS USED TO GROW ONE ACRE OF SWEET CORN FOR PROCESSING (88 Sweet Corn Enterprises, Western New York, 1955)

Input	Your farm	Average of 88 farms	22 farms with yields over 2.3 tons
Acres of sweet corn	_____	29	27
Yield per acre, tons	_____	1.7	3.0
Man hours	_____	5.2	5.1
Tractor hours	_____	4.9	4.9
Seed, lbs.	_____	8	8
Commercial fertilizer, lbs.			
N	_____	34	43
P_2O_5	_____	41	49
K_2O	_____	39	52

Fertilizer - Commercial fertilizer was used by all the producers studied. The amount applied varied quite widely and was partly dependent on the farmer's estimate of the existing level of fertility at the time of planting. The averages in table 3 suggest that most commonly producers applied the equivalent of about 400 lbs. of a 5-10-10 fertilizer and side dressed with about 50 lbs. of ammonium nitrate per acre. Many used a 10-10-10 or 12-12-12 fertilizer and did not side dress with additional nitrogen. Producers with the highest yields used more commercial fertilizer than the average. However there was considerable variability in the amounts of nitrogen, phosphate, and potash applied by different producers. Some of the men with the highest yields applied no more than average amounts of fertilizer. Over half of the farmers plowed down livestock manure at some time during the previous three years on the land on which sweet corn was grown. A cover crop was plowed down on all or part of the acreage by 25 percent of the producers.

The Cost of Producing One Acre of Sweet Corn [1/]

The average cost of producing 1.7 tons of husked sweet corn in Western New York during 1955 was a little more than $60 per acre. For this yield about three-fourths of the costs were for growing or bringing the sweet corn up to the point of harvest, and one-fourth to pick it and haul it to a processor. Since harvest costs are almost directly proportional to yields, the share which harvest costs make up of the total increased on farms with higher yields.

1/ The procedures used and rates established in obtaining the various items of costs are shown in the Appendix, pp. 20

Growing Costs - Most farmers spent between $30 and $60 per acre in growing their sweet corn. A large part of this variability from farm to farm came from differences in the amount of fertilizer and plant nutrients added and in the rent charged for the use of the land. Other items of cost were relatively uniform. The value of all plant nutrients added in the form of commercial fertilizer, manure, cover crops and lime ranged from $5 to over $40 per acre. About half of these producers were in the group spending between $10 and $20 per acre.

TABLE 4. DISTRIBUTION OF THE VALUE OF ALL PLANT NUTRIENTS ADDED PER ACRE (88 Sweet Corn Enterprises, Western New York, 1955)

Value of nutrients added	Number of enterprises
$ 5 - 9	16
$ 10 - 14	23
$ 15 - 19	18
$ 20 - 24	18
$ 25 - 29	8
$ 30 and over	5

A reasonably good estimate of a sweet corn producer's growing costs per acre may be obtained by first determining the cost of commercial fertilizer applied and the value of manure, cover crops, and lime added on each acre. To this total should be added $30 per acre to cover the use of all other resources in growing the crop - land, labor, machinery, power, seed, etc. In 75 percent of the cases this estimate approached within $5 the more carefully determined cost figures for each farm included in this study.

Harvest Costs - Most of the sweet corn contracts specified that the processor would pick and haul the crop. Hence only two of the producers picked their own crop with a mechanical picker which they owned jointly. Another grower hired and personally supervised a field crew to salvage what he could from his smut-infested acreage. Less than 25 percent did their own trucking. Charges were based on a flat rate per ton hauled. This trucking rate per ton increased somewhat as distance from the plant increased. Charges for picking were not made on an acre basis except by one processor. In this case a minimum charge per acre was established if yields including the husks were below two tons. Because picking and hauling charges are made primarily on a weight basis, harvest costs are nearly proportional to yields. The net cost of harvesting one ton of husked sweet corn averaged from $8.50 to $9.00.

TABLE 5. THE AVERAGE COST OF PRODUCING ONE ACRE OF SWEET CORN FOR PROCESSING (88 Western New York Farms, 1955)

Items of cost	Your farm	88 farms	22 farms with yields over 2.3 tons
Acres of sweet corn		29	27
Yield per acre		1.7	3.0
Growing Costs:			
Labor:			
Man		$ 5.08	$ 5.25
Tractor		4.78	4.95
Other		.62	.96
Fertilizers:			
Commercial		11.62	14.47
Manure		4.63	3.26
Cover crop, etc.		1.06	1.43
Spray and dust		.18	.24
Seed		2.95	3.24
Land charge		9.81	11.56
Use of equipment		5.12	5.22
Interest		.69	.76
Irrigation		.01	----
Total Growing Cost		$ 46.55	$ 51.34
Harvesting Costs:			
Picking and hauling		$ 14.19	$ 23.56
Other		.97	2.13
Total Harvesting Cost		$ 15.16	$ 25.69
TOTAL COST PER ACRE		$ 61.71	$ 77.03

Total Returns and Profit per Acre

The total income received per acre from sweet corn depends on the size of the yield and quality of the crop harvested. Total returns ranged from nothing on seven farms where no crop was harvested to over $160 per acre. In only nine cases was the gross income over $100. Among the vegetable crops this is one of the more extensive in the use of resources. Nevertheless sizeable profits or losses per acre are possible.

Yield per Acre - The average yield of husked sweet corn on these 88 farms was 3,310 pounds or 1.7 tons per acre. This average was obtained by including all of the sweet corn acreage planted on the farms studied regardless of whether they were harvested. It is the net yield for the acreage committed to sweet corn during the crop year. Yields are reported in tons of husked sweet corn harvested which is the basis on which nearly all growers were paid.

TABLE 6. DISTRIBUTION OF SWEET CORN YIELDS
(88 Western New York Farms, 1955)

Range in yield (tons)	Number
0.0	7
0.1 - 0.9	19
1.0 - 1.9	29
2.0 - 2.9	24
3.0 - 3.9	8
4.0 - 4.9	1

There was a wide range in yields in 1955 within an area with relatively similar weather and soil conditions. Most producers described the growing season as unusually dry until shortly before harvest. However neighboring farms had widely different yields on the same type of soil. Seven men harvested no crop. Nine produced yields well over 3.0 tons to the acre. Most had poor or average yields. A further indication of the distribution of yields is shown in figure 3.

Price per Ton - Prices paid for sweet corn differ between farms and processors depending on the style of corn packed, the quality of corn delivered, and differences in methods of grading. The average price received per ton, considering the whole crop, was $31.

Eight of the producers received from $35 to $37 per ton. All had well above average yields and received a bonus for the large tonnage per acre under two contract pricing systems. The most common price was $30 per ton received by 32 growers. No one averaged less than $27 per ton for their crop.

TABLE 7. RETURNS PER ACRE FROM PRODUCING SWEET CORN FOR PROCESSING (88 Western New York Farms, 1955)

	Your farm	Average of 88 farms	22 farms with yields over 2.3 tons
Yield per acre		1.7	3.0
Average price per ton		$ 31.	$ 33.
Total returns per acre		$ 53.87	$ 99.25
Total cost per acre		61.71	77.03
Net return per acre		$ -7.84	$ 22.22

Net Returns - Only 28 of the 88 producers studied made a profit in growing sweet corn for processing in 1955. Over 68 percent of the group lost money on the crop. The average grower with a yield of 1.7 tons lost nearly $8 per acre. However the men with above average yields showed profits which averaged $22 per acre (see table 7). The variation in profits and losses was substantial. Over 25 percent of the producers sustained losses of $25 or more per acre while another 25 percent showed profits of $10 or more per acre.

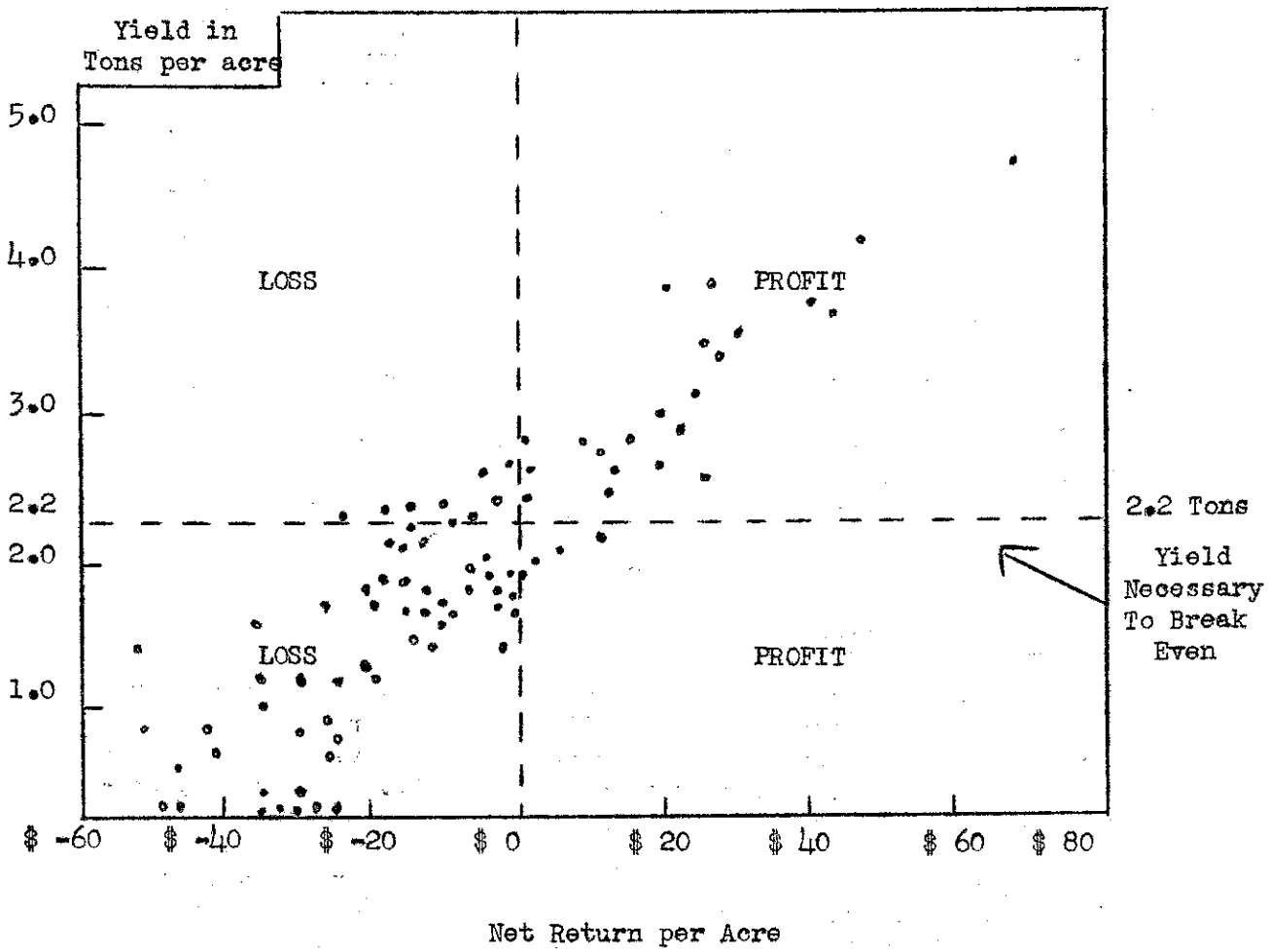
Yield Necessary to Break Even

A yield of 2.2 tons of husked sweet corn per acre was necessary to break even in Western New York in 1955 on most farms. Only two farmers with yields over 2.2 tons per acre lost money. Four men with yields of less than 2.2 tons showed a small profit. In general, however profits were closely tied to yields.

The relationship between yield per acre and net returns is shown in figure 3. Each dot represents the relationship between yield and net returns on one of the farms studied. If the yield per acre were the only variable determining the amount of profit or loss, all of the dots would form a line across the diagram. The actual scatter from such a line indicates that other factors beside yield were also of some importance. For example, excellent control of costs allowed

the four men with yields below the general break-even point to show a small profit. Aiming for yields of at least 2.0 - 2.5 tons per acre makes good economic sense for a sweet corn producer. Without such yields, profits will either be small or non-existent.

FIGURE 3. THE RELATIONSHIP BETWEEN YIELD AND NET RETURN PER ACRE OF SWEET CORN FOR PROCESSING (88 Western New York Farms, 1955)



THE EFFECT OF DIFFERENT PRACTICES ON YIELDS AND NET RETURNS

It is clear that profits in sweet corn production are closely associated with yields. Without one it is difficult to achieve the other. Moreover, equalling the state average yield is not enough. Something higher must be achieved to be successful year after year.

How can above average yields be achieved regularly at a reasonable cost? This is really the key question to be answered by sweet corn producers. How did the men who had yields above the break-even point obtain them? This study or report can not answer these questions completely. It is possible however to consider some of the more important practices over which a producer has some control, which determine the size of yields and eventually his profits.

Every producer knows that it is a combination of many practices and conditions which determines how large his crop will be. No single practice is most important. Anyone may be limiting on a given farm. For example, without adequate amounts of moisture over the growing season large applications of commercial fertilizer will not be used by the crop for which they were intended. Because there are so many factors which jointly determine the size of yield on individual farms, it is difficult to appraise the effect of each practice on final results. The following analysis of practices normally thought to have an important bearing on yields must therefore be considered as an indication, not proof of, how each affected yields in 1955.

Commercial Fertilizers

The important plant nutrients added to a soil by using commercial fertilizers are nitrogen (N), phosphate (P_2O_5) and potash (K_2O). They should be present in the soil in a readily available form in such amounts that plant growth will not be limited by the lack of any one of them. Yields commonly increase as farmers add more plant nutrients to a soil. However, there is usually a point above which yields do not increase rapidly enough to pay for adding more fertilizer. It is at this point, if it can be determined, that additional amounts of fertilizer should not be applied since they will not be used economically.

Nitrogen - Nitrogen was applied both as part of a mixed fertilizer and as a side dressing. There was a wide range in its rate of use. Farmers who plowed down livestock or green manure tended to use less nitrogen from a bag. Three farmers used more than 100 lbs. per acre while on the other hand 25 percent of the group used from 10 to 15 pounds. While the data in table 8 suggest a very definite yield

response resulting from increased applications of nitrogen, part of this increase must be attributed to the other nutrients, potash and phosphate. On the average those who used larger amounts of nitrogen also used larger amounts of P_2O_5 and K_2O. The general recommendation of applying 40 - 50 lbs. of N per acre for sweet corn is supported by this evidence.

TABLE 8. AMOUNT OF NITROGEN APPLIED AS RELATED TO YIELD AND OTHER FACTORS
(88 Sweet Corn Enterprises, Western New York, 1955)

Rate of application	N	P_2O_5	K_2O	Yield per acre
(per acre)	(pounds per acre)			
10 - 15 lbs.	13	29	26	1.0
16 - 25 lbs.	22	40	38	1.7
26 - 40 lbs.	33	43	44	1.8
over 40 lbs.	70	50	49	2.2

Phosphate - Most producers applied between 25 and 50 lbs. of phosphate per acre. The most common application rate was 30 lbs. As was true in the case of nitrogen, heavy applications of phosphate were closely associated with the heavier applications of the other two ingredients. Hence the yield response shown in table 9 is only partly the result of differences in the amounts of phosphate used.

TABLE 9. AMOUNT OF PHOSPHATE APPLIED AS RELATED TO YIELD AND OTHER FACTORS
(88 Sweet Corn Enterprises, Western New York, 1955)

Rate of application	P_2O_5	N	K_2O	Yield per acre
(per acre)	(pounds per acre)			(tons)
20 - 29 lbs.	26	26	25	1.2
30 - 39 lbs.	32	24	29	1.6
40 - 49 lbs.	43	38	39	1.7
over 50 lbs.	60	46	61	2.1

Potash - Potash was applied by most producers in about the same amounts as phosphate. The effective range in application rates was a bit greater than for phosphate, 15 to 95 pounds per acre. The same joint relationship with nitrogen and phosphate is apparent when appraising the relationship of potash applications to yields. The evidence in table 10 supports the general recommendation of using from 40 to 50 pounds of potash per acre when planting sweet corn.

TABLE 10. AMOUNT OF POTASH APPLIED AS RELATED TO YIELD AND OTHER FACTORS
(88 Sweet Corn Enterprises, Western New York, 1955)

Rate of application (per acre)	K_2O	N	P_2O_5	Yield
	(pounds per acre)			(tons)
15 - 29 lbs.	21	24	29	1.0
30 - 39 lbs.	32	27	32	1.7
40 - 49 lbs.	43	39	43	1.9
over 50 lbs.	62	46	60	2.1

Value of all Plant Nutrients Added

Commercial fertilizers are not the only source of plant nutrients which farmers add to their soils. Manure, cover crops, legume sod, and lime all may be used to increase the amount of readily available plant food. Values were placed on all these additional sources of nutrients and a composite total value of the plant nutrients added on each acre for the sweet corn crop was derived. As was indicated in table 4 there was considerable variation in the amount and value of nutrients added from farm to farm.

TABLE 11. VALUE OF ALL PLANT NUTRIENTS ADDED AS RELATED TO YIELD AND NET RETURN
(88 Sweet Corn Enterprises, Western New York, 1955)

Value of nutrients added (per acre)	Number of farms	Net return per acre	Yield per acre (tons)
$ 5 - 9	16	$ -12.92	1.0
$ 10 - 14	23	- 8.84	1.5
$ 15 - 19	18	- 2.27	1.8
$ 20 - 24	18	5.16	2.4
$ 25 and over	13	$ -24.95	1.5

Yields and net returns tended to increase in 1955 as more nutrients were applied up to an expenditure level of from $20 to $25 per acre. The producers who spent more than $25 per acre for plant nutrients for sweet corn in 1955 all lost money on the crop except for one man who achieved well above average yields. To justify such a large expenditure for fertilizers a producer must obtain above average yields much more than half of the time since below average yields result in sizeable losses as is shown in table 11. While there was considerable variability in yields in each of the cost groups studied, the principle of diminishing returns is fairly well demonstrated here.

In general when more plant nutrients were added yields and net returns increased until a point where the increase in yields no longer paid for the additional cost of plant nutrients. Finally yields decreased as well. In 1955 with the unusually dry growing season and poor germination of seed large applications of fertilizer occasionally were a deterent to yields. The data in table 11 should remind growers that adding more and more fertilizer does not always pay even though adequate fertilization is necessary for good yields and profits.

Size of Enterprise

Size of enterprise is often associated with efficiency in operation and hence in net returns. The group of enterprises studied together as one population ranged from 15 to 75 acres in size. It was expected that there would be little difference within this group as to practices, yields, or methods used because of differences in size of the sweet corn acreage. To check this expectation and also determine if yields differed significantly within different size groupings the effect of acreage on yields and resource was examined.

TABLE 12. ACRES OF SWEET CORN PLANTED AS RELATED TO YIELDS AND OTHER FACTORS
(88 Sweet Corn Enterprises, Western New York, 1955)

Acres of sweet corn	Number of farms	Man hours to grow (per acre)	Growing cost (per acre)	Yield per acre (tons)
15 - 19	24	5.5	$ 44	1.8
20 - 24	26	4.9	$ 43	1.4
25 - 34	16	5.2	$ 52	1.7
35 - 75	22	5.1	$ 49	1.7

There is no evidence in these records to support the idea that operators handling 50 - 75 acres of sweet corn for processing were any more or any less efficient than those with 15 to 25 acres of the crop.

More money was spent on the average in growing an acre of sweet corn by those with the larger acreages although this difference is not clear cut. About the same amount of time was spent to bring the crop up to the point of harvest regardless of size. There was no trend in yields related to acreage planted. In fact this lack of relationship between size and other factors including rates of fertilization and seeding helps to support the original conclusion that these enterprises may be correctly treated as one population.

Rate of Seeding

A good stand of vigorous plants is necessary if large yields are to be realized. Seed is one of the minor cost items in growing sweet corn. Variations in the amount of seed planted will not affect costs greatly. Differences in seeding rates reflect differences in seed size as well as the number of corn plants desired per acre. The relationship of seeding rates to yields is shown in table 13. Two-thirds of the producers who used the most seed per acre had above average yields. A high rate of seeding will not guarantee high yields or a good stand of plants. However in 1955 most of the men who used nine or more pounds of seed per acre had enough plants per acre to produce better than average crops.

TABLE 13. RATE OF SEEDING AS RELATED TO YIELD AND OTHER FACTORS
(88 Sweet Corn Enterprises, Western New York, 1955)

Rate of seeding	Value of plant nutrients added	Yield per acre
(lbs. per acre)		(tons)
5 - 6	$ 16	1.5
7	$ 19	1.5
8	$ 16	1.6
9 and over	$ 19	2.1

A COMPARISON OF COSTS AND RETURNS IN WESTERN NEW YORK FOR 1954 and 1955

Neither 1954 nor 1955 was a particularly good year for sweet corn producers in New York. While there were a number of crop failures both years and particularly in 1955, there were also a substantial number of growers who had good crops and did well in one or both years. Hardly

anyone would describe growing conditions as being excellent or even good either year. Yet considering everything, weather conditions were not the worst on record either.

TABLE 14. AVERAGE COSTS AND RETURNS FROM PRODUCING ONE ACRE OF SWEET CORN FOR PROCESSING (Western New York, 1954 and 1955)

Description	37 farms in 1954	88 farms in 1955
Acres of sweet corn	27	29
Yield per acre (net tons)	2.2	1.7
Average price per ton	$ 33.	$ 31.
GROWING COSTS		
Man labor	$ 5.87	$ 5.08
Tractor and truck	5.93	5.40
Use of other equipment	5.25	5.12
All fertilizers	15.45	17.31
Seed	2.44	2.95
Land charge	8.81	9.81
All other	.93	.88
Total Growing Costs	$ 44.68	$ 46.55
TOTAL HARVESTING COST	19.03	15.16
TOTAL COST OF PRODUCTION	$ 63.71	$ 61.71
NET RETURN PER ACRE		
Gross returns per acre	$ 72.17	$ 53.87
Cost of production	63.71	61.71
Net return per acre	$ 8.46	$ -7.84

Costs and Returns

A number of fairly striking things emerge from a comparison of the results for the two successive years. (see table 14). The average cost of growing an acre of sweet corn was about $45. Differences between the two years in this item were small. On the average more fertilizer was applied per acre on the farms studied in 1955 than in 1954.

The most variable item of cost was fertilizer. These results indicate that a good estimate of the cost of growing sweet corn for a specific farm can be obtained by adding to the cost of all fertilizer materials applied, a sum of $30 per acre to cover expenses for the use of labor, power, seed, land, spray and equipmext.

Harvest costs per acre averaged less in 1955 than 1954 because of a smaller average yield. However, since harvest costs are directly proportional to yields the similarity between harvest costs per ton of husked sweet corn for the two years is clear. The average harvest cost per ton in both cases was between $8.50 and $9.00.

Net returns are primarily determined by yields. In 1954 with an average price received of $33 per ton of husked sweet corn the yield necessary to break-even was 2.0 tons per acre. In 1955 the break-even point was at 2.2 tons increasing primarily because the average price received decline to $31 per ton while costs remained relatively constant. Considered as a group, producers made a small profit in growing sweet corn in 1954 and did not receive enough to fully pay for the use of all the resources devoted to the crop in 1955. Unless a producer can average a minimum of from 2.0 to 2.5 tons per acre he should consider growing some other more profitable crop.

APPENDIX

Prices and Rates Used in Determining Costs of Production

Wherever possible, direct costs were estimated or provided by the producer. Costs of commercial fertilizers, spray materials, seed, rented land and custom work hired were easily obtained. Charges for the use of equipment, the operator's labor, and power were more difficult. The following procedures and rates were used:

Land: When the acreage planted to sweet corn was rented the actual cash paid per acre was charged. Producers using their own land were asked to estimate it's value per acre if it were offered for rent. This estimate was then used in the summary of costs per acre. Since 56 of the 88 producers rented all or part of the land they operated, rental rates were not difficult to establish.

Labor: Rates per hour for all classes of labor were estimated by each producer. Farmers either indicated their estimate of the price per hour they would have had to pay to replace themselves or their family on the job or the price per hour actually paid. These estimates were often obtained by estimating average monthly wages and hours worked per month. Four general classes of labor were established with a rate for each: - operators, family, regular hired, and day or special labor. The average of the rates per hour estimated for use in this study by these producers were:

Class of labor	Rate per hour
Operator	$ 1.05
Family	.90
Regular hired	.90
Day or special	.95

Tractors and Trucks: Producers indicated the size of tractors and trucks they owned and estimated how heavily each of these sources of power was used. A schedule of rates for each classification of size and rate of use was developed from New York cost account data and applied accordingly on all farms. A more complete discussion of how these rates were derived can be found in A.E. 998, "Operating Costs for Farm Tractors and Trucks".

One Plow Tractor

Hours used	Rate per hour
Under 300	$ 1.10
300 - 500	.80
Over 500	.60

Two Plow Tractor

Hours used	Rate per hour
Under 400	$ 1.20
400 - 600	.95
Over 600	.75

Three Plow Tractor

Hours used	Rate per hour
Under 450	$ 1.45
450 - 700	1.15
Over 700	.95

Small Truck (1 ton or less)

Miles driven	Rate per mile
Under 4,000	$ .12
4,000 - 7,000	.095
Over 7,000	.07

Large Truck (over 1 ton)

Miles driven	Rate per mile
Under 2,500	$ .23
2,500 - 4,500	.19
Over 4,500	.15

Lime and Manure: The cost of lime and manure applied to the fields upon which sweet corn was grown in 1955 was pro-rated over a 3 year period. Fifty percent of the value of manure or lime applied in 1955 was charged to the 1955 crop; thirty percent of that applied in 1954 and twenty percent of that applied in 1953 were also charged to the 1955 crop of sweet corn. The average charge for manure spread on the field was approximately $3.00 per ton.

Equipment: A flat charge of $5.00 per acre was made for the use of plows, fitting equipment, planters and cultivators on all farms. This was derived from average annual costs for such equipment on New York cost account farms. It covers depreciation, interest on investment,

repairs, and costs of servicing. An additional charge was made for any special equipment used, such as sprayers. These costs were individually determined from the farmer's estimate of annual costs of operating the machine and the number of acres on which it was used.

Other: Cover crops such as rye, small grains, or grasses, were charged at the farmer's estimate of their cost per acre. Where such estimates could not be made by the farmer a flat charge of $3.00 per acre was made for the cover crop plowed down. Horse labor was charged at $.50 per hour. The charge made for the use of automobiles was $.08 per mile.