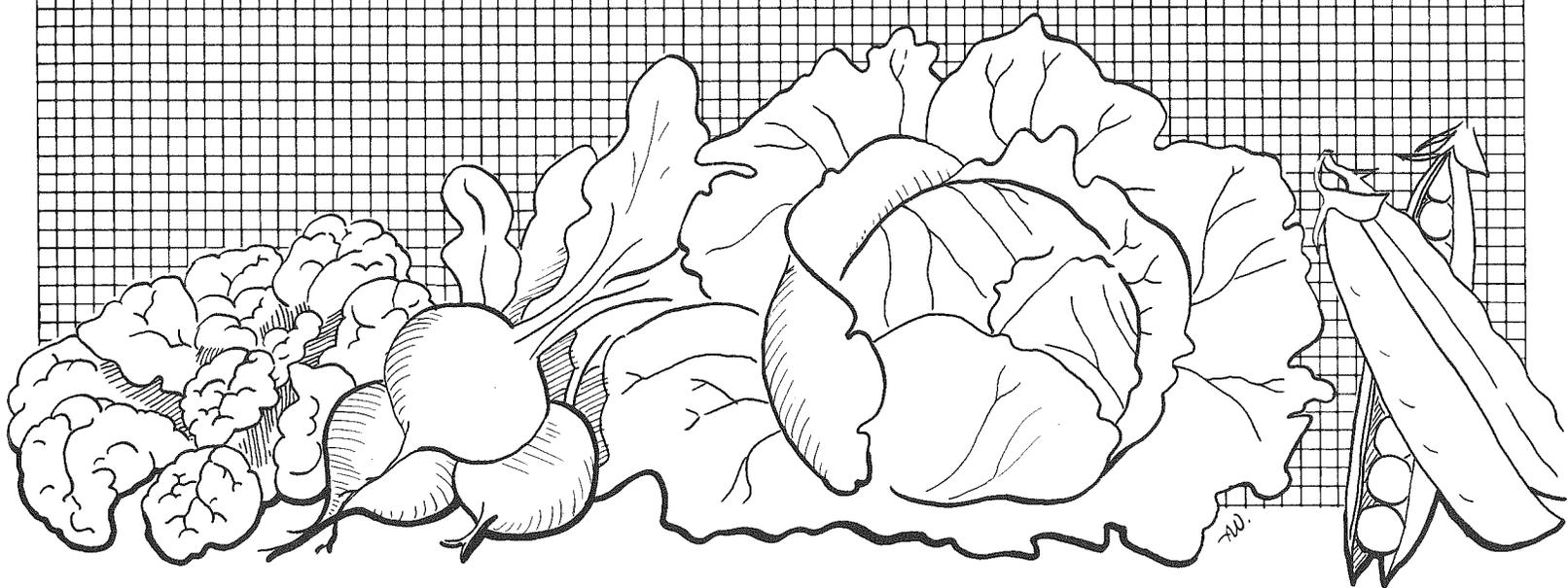


ENTERPRISE COSTS AND RETURNS ON

A MARKET GARDEN FARM



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Since 1914 farm cost accounts have been kept on a market garden farm in Western New York. Over the years these have provided valuable information on physical inputs and costs and returns. The farm is located in the western part of New York State and is under the management of a father and three sons. The father serves as the general manager. One of the sons is the farm operations manager, another is the marketing specialist, and the third is the insect and disease specialist and is in charge of seeding of all vegetables. All work to fit their speciality into the general well-being of the farm business; all participate in the planning; and all work at whatever is necessary to see that the farm plans are accomplished.

Vegetables Grown

Over the years a wide variety of vegetables and fruit has been grown on the farm. Most of the losing enterprises have been eliminated. A small acreage of some enterprises not consistently profitable was grown in order to provide their buyers with a fairly complete line of vegetables.

In recent years the production enterprises on the farm have consisted of about 257 acres of vegetables and 36 acres of other crops (Table 1). Some feeder cattle have been kept to utilize feed crops, provide winter work and supply manure for vegetable crops.

Of the 257 acres of vegetables about 73 have been in sweet corn. Other crops with substantial acreages have been snap beans, cabbage, cauliflower, cucumbers, lettuce, peppers, squash, spinach and tomatoes. Although the acreage in greens and parsley has been small, these crops are labor intensive and are a larger part of the business than the acreage would indicate.

Table 1.

ACRES OF CROPS GROWN
Market Garden Farm, 1958-61

Crop	Average acreage	Per cent of total
<u>Vegetables</u>		
Beans, snap	13.8	4.7
Broccoli	2.9	1.0
Brussels sprouts	0.1	*
Cabbage	25.2	8.6
Carrots	0.8	0.3
Cauliflower, fall	21.6	7.4
Cauliflower, summer	8.2	2.8
Celery	1.5	0.5
Celery cabbage	2.4	0.8
Cucumbers	11.8	4.0
Egg plant	1.8	0.6
Greens	4.9	1.7
Lettuce, iceberg	13.8	4.7
Lettuce, other	2.2	0.7
Melons	14.3	4.9
Parsley	0.4	0.1
Peas	2.5	0.8
Peppers	10.7	3.6
Squash	11.6	4.0
Spinach	12.4	4.2
Sweet corn	73.3	25.0
Tomatoes	<u>21.1</u>	<u>7.2</u>
Total	257.3	87.6
<u>Hay and Grain</u>		
Hay	17.6	6.0
Corn for grain	0.8	0.3
Wheat and rye	<u>17.9</u>	<u>6.1</u>
Total	<u>36.3</u>	<u>12.4</u>
Total of all crops	293.6	100.0

* Less than .05 per cent

Snap Beans

An average of 13.8 acres of snap beans was grown per year on the farm during the period 1958-61 (Table 2). About 3 tons of manure and 0.5 ton of fertilizer were applied per acre annually. The yield averaged 210 bushels per acre. Little man labor was required for growing the crop, but the beans were picked by hand and took a large amount of time.

Land, fertilizer and manure, irrigation and labor were the largest growing costs. These ranged from \$25 to \$35 per acre. The 60 pounds of seed used per acre cost about \$15. The total cost to the time of the harvest averaged \$183 per acre.

The harvesting cost totaled \$284 per acre. Most of this was labor cost. Another \$89 was spent on selling the crop. Containers cost \$42; commissions, \$22, and the share of the farm marketing overhead was \$25.

The total cost of growing, harvesting and selling was \$556 per acre. The 210 bushels of beans brought a return of \$607. The gain per acre, after counting all costs including such things as the value of unpaid labor, was \$51.

It cost \$2.65 per bushel to grow, harvest and sell the snap beans. The crop returned an average of \$2.89 per bushel leaving a profit of \$0.24.

The return per dollar of cost was \$1.09 and per hour of labor was \$1.32.

Table 2. COSTS AND RETURNS FOR SNAP BEANS
Market Garden Farm, 1958-61

Item	Amount
Average acres grown	13.8
Bushels per acre	210
Pounds of seed per acre	60
Plant food per acre - tons of manure	3.4
pounds of fertilizer	1,062
Man hours per acre - to grow	15
to harvest	252
-per acre-	
Growing:	
Land	\$ 25.38
Manure	16.58
Lime	1.52
Fertilizer	33.70
Cover crop	5.23
Seed	14.82
Spray and dust materials	7.15
Irrigation	34.59
Labor	25.35
Tractor	6.59
Other equipment	6.86
All other	4.98
Total growing	\$182.75
Harvesting:	
Labor	\$274.53
Equipment (includes tractor)	5.35
All other	3.86
Total harvesting	\$283.74
Selling:	
Packages	\$ 42.19
Commission	21.96
Marketing	25.29
Total selling	\$ 89.44
Total cost per acre	\$555.93
Returns: Snap beans	\$607.37
Gain per acre	\$ 51.44
-per bushel-	
Cost	\$ 2.65
Value	2.89
Gain	0.24
Return per hour of labor	\$ 1.32
Return per dollar of cost	1.09

Broccoli

An annual average of only 2.9 acres was devoted to this minor crop during 1958-61 (Table 3). Most of the broccoli was started in the greenhouse and transplanted in the field. An average of 9,500 plants from the greenhouse plus 0.3 pounds of seed sown outdoors was used per acre.

The yield was measured in eight-quart baskets, the unit of sale, and averaged 1,121 baskets. To obtain this yield 1.6 tons of manure and 1,819 pounds of fertilizer were used per acre.

Because the crop was all harvested by hand, and the plants were transplanted, broccoli was a labor-intensive crop utilizing 69 hours for growing and 379 hours for harvesting an acre.

Broccoli was an expensive crop to produce. The growing cost alone was \$424 per acre. Labor, plants and fertilizer made up 62 per cent of the growing cost. Irrigation, spray and dust materials and power and equipment were other important items. The land cost, although \$26 per acre, was only 6 per cent of the growing cost and 2 per cent of the total cost of production.

The harvesting cost was mostly labor. Of the \$645 total, \$629 was the cost of labor. Selling costs totaled \$166 per acre.

The total per-acre cost of production on broccoli was \$1,236, and the returns from the 1,121 eight-quart baskets was \$1,160 leaving a deficit of \$76.

The cost per eight-quart basket was \$1.10; the average returns were \$1.03; the net loss \$0.07. Although the return per hour of labor was \$1.49, this was not enough to cover the labor cost. Since the enterprise returned only \$0.94 for every dollar spent on the crop, the gardeners were not encouraged to grow many acres.

Table 3.

COSTS AND RETURNS FOR BROCCOLI
Market Garden Farm, 1958-61

Item	Amount
Average acres grown	2.9
Eight-quart baskets per acre	1,121
Plants per acre	9,500 (plus 0.3# seed)
Plant food per acre - tons of manure	1.6
pounds of fertilizer	1,819
Man hours per acre - to grow	69
to harvest	379
-per acre-	
Growing:	
Land	\$ 25.62
Manure	8.44
Lime	2.36
Fertilizer	53.42
Cover crop	1.68
Plants and seed	94.20
Spray and dust materials	33.98
Irrigation	44.06
Labor	113.32
Tractor	20.65
Other equipment	15.08
All other	11.48
Total growing	\$ 424.29
Harvesting:	
Labor	\$629.26
Tractor and truck	1.86
Other equipment	6.58
All other	7.57
Total harvesting	\$ 645.27
Selling:	
Ice	\$ 24.48
Packages	81.91
Commission	14.49
Marketing	45.56
Total selling	\$ 166.44
Total cost per acre	\$1,236.00
Returns: Broccoli	\$1,160.42
Loss per acre	\$ 75.58
-per eight-quart basket-	
Cost	\$ 1.10
Value	1.03
Loss	0.07
Return per hour of labor	1.49
Return per dollar of cost	0.94

Cabbage

Cabbage was a good crop for these market gardeners, and they grew an average of 25.2 acres per year during 1958-61 (Table 4). To get a yield of 593 bushels of cabbage they applied 2.6 tons of manure and 1,300 pounds of fertilizer.

The plants were started in the greenhouses, and 9,800 plants, plus 0.2 pounds of seed, were used per acre. Since the growing involved transplanting, the crop required 44 hours per acre. Harvesting required 95 hours per acre which is high relative to hay and grain but low relative to many vegetable crops.

The growing cost per acre averaged \$349. Labor and plants were the largest items of cost. Land, fertilizer and irrigation costs were the next items of importance.

Labor was the big cost of harvesting. Of the average harvesting cost per acre of \$177, the labor cost was \$157 or 89 per cent.

Packages and overhead marketing costs were the big items making up the \$179 selling cost.

The total cost per acre was \$704. The 593 bushels of cabbage returned \$742, making a gain of \$38. There was a return of \$1.05 for each dollar invested in the crop.

The cabbage cost per bushel averaged \$1.19. The return averaged \$1.25.

Fall Cauliflower

Both summer and fall cauliflower were grown regularly on the market garden farm. The fall cauliflower was grown on about 21.6 acres of land (Table 5). The plants were grown in the field and transplanted. About 1.8 tons of manure and 1,300 pounds of commercial fertilizer were used per acre.

The labor for growing an acre of the crop, including the growing and pulling and sorting of plants, was 58 hours. The harvesting of 411 twelve-head crates per acre took 116 man hours.

Labor was the largest item of growing cost, averaging \$96 or almost one-third of the total. Irrigation, fertilizer and spray and dust materials were the next items of importance. The total growing cost averaged \$301 per acre.

About 90 per cent of the \$214 per acre harvesting cost was for labor. Packages, commissions and farm overhead marketing costs were the major selling costs.

Altogether the growing, harvesting and selling costs came to \$675 per acre. The returns from the 411 crates of cauliflower amounted to \$709; a few plants were sold from the enterprise. The total receipts per acre were \$710 which gave the farmer a \$35 per acre gain.

The net cost per crate of fall cauliflower was \$1.64 or about \$0.14 per head. The returns averaged \$1.73 or a fraction over \$0.14 per head. The farmer made just about three-fourths of a cent profit per head of cauliflower.

The return per hour of labor averaged \$1.86, and the enterprise returned the farmer a net gain of \$0.05 for each dollar invested.

Table 5. COSTS AND RETURNS FOR FALL CAULIFLOWER
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		21.6
Twelve-head crates sold		411
Pounds seed per acre		0.3 (plus 280 plants)
Plant food per acre - tons of manure		1.8
pounds of fertilizer		1,326
Man hours per acre - to grow		58
to harvest		116
-per acre-		
Growing:	Land	\$ 20.78
	Manure	8.67
	Lime	2.05
	Fertilizer	40.99
	Cover crop	2.84
	Plants and seed	10.33
	Spray and dust materials	32.34
	Custom dusting	1.35
	Irrigation	52.09
	Labor	96.18
	Tractor	17.15
	Other equipment	8.99
	All other	7.34
	Total growing	\$301.10
Harvesting:	Labor	\$192.61
	Tractor	2.13
	Supplies	8.70
	Other equipment	5.75
	All other	5.29
	Total harvesting	\$214.48
Selling:	Packages	\$ 87.29
	Commission	20.74
	Marketing	50.08
	All other	1.32
	Total selling	\$159.43
Total cost per acre		\$675.01
Returns:	Fall cauliflower	\$709.26
	Plants	0.85
Total returns per acre		\$710.11
Gain per acre		\$ 35.10
-per twelve-head crate-		
Net cost*		\$ 1.64
Value of product		1.73
Gain		0.09
Return per hour of labor		\$ 1.86
Return per dollar of cost		1.05

* Cost less value of by-product

Summer Cauliflower

About 8.2 acres of summer cauliflower were grown (Table 6). The plants were started in the greenhouses, and 10,700 plants, plus 0.1 pounds of seed, were used per acre. About 1.6 tons of manure and 1,500 pounds of fertilizer were used per acre.

The growing labor for preparing the land, transplanting the plants, tilling, weeding and spraying averaged 44 hours per acre. The harvesting of the 608 twelve-head crates produced per acre averaged 174 man hours.

The cost of growing an acre of summer cauliflower was somewhat greater than for fall cauliflower. The major difference was the cost of plants instead of seed and somewhat more fertilizer expense. The labor, irrigation and spray materials were considerably less but not enough to offset the added costs. The average growing cost per acre was \$345.

The harvesting cost was also up with \$316 as against \$214. Most of this difference was the added cost for the 174 hours of labor required to harvest the 608 crates of cauliflower. Selling costs also were higher, about in proportion to the difference in yield.

The total cost of growing, harvesting and selling was \$887 per acre. The returns were \$1,122, making a gain of \$235.

The cost per crate was \$1.46, and the cauliflower brought in \$1.85, making a gain of \$0.39.

The return per hour of labor was \$2.73, and the farmer gained \$0.26 on each dollar invested in producing the crop.

Celery

Celery was not a profitable crop from 1958-61. In one year there was a complete crop failure, and over the other three years the crop showed a loss. Consequently, the acreage grown was small, averaging only 1.5 acres (Table 7).

Celery is a labor-intensive crop. About 13,100 plants were started and transplanted per acre, 1,500 pounds of fertilizer were used; 154 man hours were spent in growing and 361 hours in harvesting an acre of the crop.

It cost \$658 per acre to grow celery. Labor, plants, equipment, fertilizer, irrigation and spray and dust materials costs were all high. Growing labor cost \$257 per acre. Plants cost \$141. The land cost was less than two per cent of the growing cost.

Harvesting cost also was high totaling \$647. This is mostly the labor cost which totaled \$601. Selling cost \$144 per acre.

Altogether \$1,450 per acre were needed to grow, harvest and sell celery, and the returns were not commensurate. The 1,719 dozen stalks produced per acre only brought \$1,285 leaving the farmer with a loss of \$165.

It cost \$0.85 to produce a dozen stalks of celery which brought only \$0.75.

The enterprise returned the farmer only \$1.35 per hour of labor spent and \$0.89 per dollar invested in the production of the crop.

Table 7.

COSTS AND RETURNS FOR CELERY*
Market Garden Farm, 1958-61

Item	Amount
Average acres grown	1.5
Dozen stalks sold per acre	1,719
Plants per acre	13,100 (plus 0.2# seed)
Plant food per acre - tons of manure	0.3
pounds of fertilizer	1,542
Man hours per acre - to grow	154
to harvest	361
-per acre-	
Growing:	
Land	\$ 24.17
Manure	2.00
Lime	1.17
Fertilizer	47.22
Cover crop	3.75
Plants and seed	140.61
Spray and dust materials	41.67
Irrigation	50.08
Labor	256.61
Tractor	21.39
Other equipment	47.00
All other	22.50
Total growing	\$ 658.17
Harvesting:	
Labor	\$600.78
Tractor	4.00
Equipment	30.50
All other	12.11
Total harvesting	\$ 647.39
Selling:	
Packages	\$ 81.77
Commission	24.06
Marketing	38.17
Total selling	\$ 144.00
Total cost per acre	\$1,449.56
Returns: Celery	\$1,285.06
Loss per acre	\$ 164.50
-per dozen stalks-	
Cost	\$ 0.85
Value	0.75
Loss	0.10
Return per hour of labor	\$ 1.35
Return per dollar of cost	0.89

* 3-year average - crop failure 1960

Celery Cabbage

This crop, often called Chinese cabbage, was a poor one for these market garden farmers. It was recognized as such and an average of only 2.4 acres were devoted to it (Table 8). About 0.6 ton of manure and 1,400 pounds of fertilizer were used per acre. Growing took 57 man hours and harvesting 63. The latter is relatively low for a vegetable crop.

About 41 per cent of the \$227 growing cost was labor. Fertilizer, irrigation, spray and dust materials, equipment and land were other major cost items.

The harvesting cost was almost all labor, \$105 out of a \$118 total. Selling cost \$37 per acre.

The total cost of production was \$382 per acre. The returns averaged only \$252 leaving the farmer with a loss of \$130 per acre.

The celery cabbage yielded 184 dozen heads per acre. The cost per dozen was \$2.08, and the farmer received only \$1.37. His return per dollar of cost was only \$0.66. He got only \$0.54 for each hour spent on the enterprise.

Table 8. COSTS AND RETURNS FOR CELERY CABBAGE
Market Garden Farm, 1958-61

Item	Amount
Average acres grown	2.4
Dozen heads sold per acre	184
Pounds of seed per acre	1.2
Plant food per acre - tons of manure	0.6
pounds of fertilizer	1,387
Man hours per acre - to grow	57
to harvest	63
-per acre-	
Growing:	
Land	\$ 17.96
Manure	3.49
Lime	1.13
Fertilizer	41.48
Cover crop	1.05
Seed	2.78
Spray and dust materials	15.80
Irrigation	19.38
Labor	93.73
Tractor	12.01
Other equipment	13.97
All other	4.11
Total growing	\$226.89
Harvesting:	
Labor	\$104.82
Equipment (includes tractor and truck)	10.92
All other	2.48
Total harvesting	\$118.22
Selling:	
Packages	\$ 16.28
Commission	6.46
Marketing	14.17
Total selling	\$ 36.91
Total cost per acre	\$382.02
Returns: Celery cabbage	\$251.77
Loss per acre	\$130.25
-per dozen heads-	
Cost	\$ 2.08
Value	1.37
Loss	0.71
Return per hour of labor	\$ 0.57
Return per dollar of cost	0.66

Cucumbers

During the 1958-61 period these market garden farmers planted 11.8 acres per year to cucumbers (Table 9). The yield was 376 bushels per acre. To get this yield 2.4 tons of manure and 1,400 pounds of fertilizer were used. Part of the plants were greenhouse grown; others were not. About 700 plants plus 1.6 pounds of seed were used per acre.

The growing cost averaged \$347 per acre. Labor, irrigation, plants and seed, fertilizer, spray and dust materials and land were the larger items of growing cost.

Harvesting totaled \$379 per acre and was mostly labor. Equipment and wax were important items.

The selling cost was relatively high. Packages cost \$112, and commissions and farm marketing overhead came to \$95 per acre.

The total growing, harvesting and selling cost was \$934 per acre. This was more than offset by the income of \$959 and gave the farmers a gain of \$25 per acre.

It cost \$2.48 to produce a bushel of cucumbers. These were sold for an average of \$2.55. The gain was \$0.07 per bushel. The enterprise returned \$1.03 for each dollar that was invested in production.

The return per hour of labor was \$1.76.

Table 9.

COSTS AND RETURNS FOR CUCUMBERS
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		11.8
Bushels sold per acre		376
Plants per acre		700 (plus 1.6# seed)
Plant food per acre - tons of manure		2.4
pounds of fertilizer		1,370
Man hours per acre - to grow		38
to harvest		210
-per acre-		
Growing:	Land	\$ 32.68
	Manure	10.13
	Lime	1.42
	Fertilizer	43.40
	Cover crop	7.37
	Plants and seed	43.76
	Hot caps and vitabands	18.91
	Spray and dust materials	36.49
	Custom spraying and dusting	1.64
	Irrigation	59.94
	Labor	63.16
	Tractor	9.22
	Other equipment	9.93
	All other	9.16
	Total growing	<u> </u>
		\$347.21
Harvesting:	Labor	\$347.26
	Tractor	2.87
	Other equipment	15.04
	Wax and waxing	7.53
	All other	6.74
	Total harvesting	<u> </u>
		\$379.44
Selling:	Packages	\$112.24
	Commission	31.74
	Marketing	63.13
	Total selling	<u> </u>
		\$207.11
Total cost per acre		\$933.76
Returns:	Cucumbers	\$958.62
Gain per acre		\$ 24.86
-per bushel-		
Cost		\$ 2.48
Value		2.55
Gain		0.07
Return per hour of labor		\$ 1.76
Return per dollar of cost		1.03

Egg Plant

Egg plant was profitable for these market gardeners, but despite this they averaged only 1.8 acres per year during the 1958-61 period (Table 10). They used 0.9 ton of manure and 1,700 pounds of fertilizer per acre. Eleven thousand plants were transplanted.

The growing labor averaged 46 hours per acre which is not exceptionally high for vegetable crops. The harvest labor averaged 241 hours per acre which is high.

It cost \$391 to grow an acre of egg plant. Plants, labor and fertilizer were the biggest items. These three totaled \$258 or about two-thirds of the growing cost. Irrigation, land and equipment costs were also important.

Labor was the big cost making up the \$423 per acre harvesting cost.

Selling costs were high, averaging \$245 per acre. Containers came to \$133 per acre.

The total cost of producing an acre of egg plant was \$1,058. The returns from the 747 bushel yield was \$1,407. The profit remaining was \$349.

One bushel of egg plant cost the growers \$1.41 to produce. It returned \$1.88, making a profit of \$0.47. The return per dollar of cost was \$1.33.

For the time spent on the crop there was a return of \$2.87 per hour.

Greens

The greens grown on this market garden farm included a variety of this type of leafy vegetable such as mustard greens, beet greens, chard, and turnip greens. Generally, the greens were an early crop, and generally they were not profitable.

About 4.9 acres of the crop were grown per year during the 1958-61 period (Table 11). About 2.4 tons of manure and 1,300 pounds of commercial fertilizer were applied per acre. The crop required, for vegetables, a relatively small amount of growing labor, but the harvest labor requirements were high. Only 21 hours of labor were spent in growing an acre of greens as against 392 hours to harvest.

It cost \$200 per acre to grow greens. Fertilizer, labor, irrigation, seed and land were the most important items of cost.

The harvesting cost came to \$673 per acre of which \$652 was for labor. Selling cost of \$151 per acre brought the total cost of production to \$1,024.

The 929 bushels of greens sold per acre brought \$1.05 per bushel or \$980 per acre. The income from the crop lacked \$44 of covering costs.

The cost per bushel was \$1.10, five cents more than the returns.

The crop returned the farmers \$1.56 for each hour spent and \$0.96 for each dollar invested in its production.

Table 11.

COSTS AND RETURNS FOR GREENS
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		4.9
Bushels sold per acre		929
Plants per acre		1,100 (plus 12.9# seed)
Plant food per acre - tons of manure		2.4
pounds of fertilizer		1,262
Man hours per acre - to grow		21
to harvest		392
-per acre-		
Growing:	Land	\$ 20.06
	Manure	12.00
	Lime	1.96
	Fertilizer	39.39
	Cover crop	7.31
	Plants and seed	25.56
	Spray and dust materials	1.57
	Irrigation	25.43
	Labor	35.07
	Tractor	12.88
	Other equipment	8.28
	All other	<u>10.72</u>
	Total growing	\$ 200.23
Harvesting:	Labor	\$651.72
	Tractor and truck	0.69
	Other equipment	10.40
	All other	<u>9.83</u>
	Total harvesting	\$ 672.64
Selling:	Packages	\$ 86.76
	Commission	20.97
	Marketing	<u>43.26</u>
	Total selling	\$ 150.99
Total cost per acre		\$1,023.86
Returns:	Greens	\$ 980.01
Loss per acre		\$ 43.85
-per bushel-		
Cost		\$ 1.10
Value		1.05
Loss		0.05
Return per hour of labor		\$ 1.56
Return per dollar of cost		0.96

Iceberg Lettuce

Over the 1958-61 period there were an average of 13.8 acres of iceberg lettuce grown on the farm per year (Table 12). Most of this was transplanted in order to get it on the market early. About 12,600 plants, plus 1.0 pounds of seed, were used per acre. The fertilizer included 2.5 tons of manure and 1,500 pounds of commercial fertilizer.

About 120 man hours per acre were spent in plowing, fitting, transplanting and weeding. This was the largest item of growing cost and averaged \$199 per acre. The plant cost was also high amounting to \$126. Fertilizer, irrigation and land were the next items of importance. The total growing cost was \$491 per acre.

Most of the harvesting cost was for labor. Two hundred and five hours worth \$340 were spent. The total harvest cost was \$357 per acre.

Selling costs included \$177 worth of containers and \$166 in commissions and other marketing overhead. The total of the growing, harvesting and selling cost came to \$1,191 per acre.

There were 1,825 dozen heads of lettuce sold at an average of almost \$1.00 per dozen. The return per acre was \$1,821. The gain amounted to \$630 per acre.

The cost per dozen heads averaged \$0.65 and at \$1.00 per dozen the gain was \$0.35. The farmer got \$3.60 for each hour of labor spent on the enterprise and \$1.53 for each dollar of cost.

Other Lettuce

Only a relatively small acreage of lettuce other than iceberg was grown. This included leaf lettuce, endive and escarole. An average of 2.2 acres were grown per year from 1958-61; the yield was 2,930 dozen heads of lettuce per acre (Table 13).

The lettuce was mostly transplanted with 22,900 plants being used per acre; however, there was an additional 3.6 pounds of seed used per acre. The fertilizer used consisted of 2.4 tons of manure and 2,200 pounds of commercial fertilizer per acre. This lettuce, more labor intensive than iceberg, took 196 hours of labor for growing and 442 hours for harvesting. This larger number of hours was in keeping with the larger number of plants started and harvested per acre.

As would be expected under these circumstances labor, \$325, and plants, \$231, were the large items of cost. Fertilizer, irrigation and land were next in order of importance. The total growing cost came to \$760 per acre.

Of the total of \$758 spent for harvesting, \$735 was for labor. Selling cost was \$323 per acre bringing the total cost of production to \$1,841.

The returns from the 2,930 dozen heads of lettuce amounted to \$2,391 with the result that there was a gain of \$550 per acre.

The cost per dozen heads averaged \$0.63 which was \$0.19 less than they brought. The return per hour spent on the crop was \$2.52, and the crop brought in \$1.30 for each dollar spent in its production.

Table 13.

COSTS AND RETURNS FOR OTHER LETTUCE
Market Garden Farm, 1958-61

Item	Amount
Average acres grown	2.2
Dozen heads sold per acre	2,930
Plants per acre	22,900 (plus 3.6# seed)
Plant food per acre - tons of manure	2.4
pounds of fertilizer	2,178
Man hours per acre - to grow	196
to harvest	442
-per acre-	
Growing: Land	\$ 24.24
Manure	13.48
Lime	2.14
Fertilizer	67.64
Cover crop	2.39
Plants and seed	230.90
Spray and dust materials	7.50
Irrigation	33.70
Labor	325.11
Tractor	14.17
Other equipment	17.50
All other	<u>21.31</u>
Total growing	\$ 760.08
Harvesting: Labor	\$734.91
Equipment	7.94
All other	<u>14.79</u>
Total harvesting	\$ 757.64
Selling: Packages	\$194.18
Commission	41.12
Marketing	<u>87.75</u>
Total selling	\$ 323.05
Total cost per acre	\$1,840.77
Returns: Other lettuce	\$2,390.99
Gain per acre	\$ 550.22
-per dozen heads-	
Cost	\$ 0.63
Value	0.82
Gain	0.19
Return per hour of labor	\$ 2.52
Return per dollar of cost	1.30

Melons

The melon crop on this farm consisted of both muskmelons and watermelons. An average of 14.3 acres were planted to the crop. There were 2,100 plants used per acre. The land was well manured with 3.8 tons per acre. In addition there was 1,600 pounds of other fertilizer applied (Table 14).

Growing an acre of melons took 57 hours of man labor, and 100 hours were required for harvesting the 296 bushels produced.

Plants were the biggest single item of cost of growing, \$117 per acre. Labor, fertilizer and irrigation were next in importance. About \$42 was spent for hot caps and tents. The total growing cost was \$475.

The total harvesting cost amounted to \$184 of which \$165 was for labor. The selling cost for melons was less than for many other vegetable crops and amounted to only \$79 per acre. The sum of the growing, harvesting and selling costs was \$739 per acre.

The melons sold from an acre of land brought \$787. The gain was \$48.

Melons cost an average of \$2.50 per bushel to produce. The returns averaged \$2.66. The time spent on the melons returned \$1.95 per hour, and the crop brought in \$1.07 for each dollar that was invested.

Table 14.

COSTS AND RETURNS FOR MELONS
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		14.3
Bushels sold per acre		296
Plants per acre		2,100 (plus .02# seed)
Plant food per acre - tons of manure		3.8
pounds of fertilizer		1,566
Man hours per acre - to grow		57
to harvest		100
-per acre-		
Growing:	Land	\$ 29.64
	Manure	17.79
	Lime	3.30
	Fertilizer	51.07
	Cover crop	7.47
	Plants	116.80
	Hot caps, etc.	42.47
	Spray and dust materials	20.29
	Custom spraying	18.91
	Irrigation	47.59
	Labor	94.15
	Tractor	7.79
	Other equipment	8.25
	All other	9.40
	Total growing	\$474.92
Harvesting:	Labor	\$164.72
	Tractor	8.18
	Other equipment	5.80
	All other	5.64
	Total harvesting	\$184.34
Selling:	Packages	\$ 48.55
	Commission	5.02
	Marketing	25.73
	Total selling	\$ 79.30
Total cost per acre		\$738.56
Returns:	Melons	\$786.61
Gain per acre		\$ 48.05
-per bushel-		
Cost		\$ 2.50
Value		2.66
Gain		0.16
Return per hour of labor		\$ 1.95
Return per dollar of cost		1.07

Parsley

A little parsley goes a long way, and the market gardeners average acreage per year of 0.45 was a lot of parsley. When the costs were computed on a per-acre basis, it was found that over the 1958-61 period the farmers planted 49,200 plants per acre; they used 5 tons of manure and 1,100 pounds of fertilizer. Parsley was an extremely labor-intensive crop. About 393 hour per acre were required for growing and 1,471 hours for harvesting.

Under these circumstances labor was by far the largest cost of growing and amounted to \$658 per acre. The cost for plants came to \$492. Other costs, although high per acre when compared to costs for other vegetables, were minuscule for parsley when compared with the total. The land cost for instance amounted to only 0.6 per cent of the total cost of production.

The harvesting cost was almost all labor and amounted to \$2,477 per acre. Selling costs came to \$386. The total cost of producing an acre of parsley was \$4,279. Although about 5,369 dozen bunches of parsley were harvested per acre, these returned only \$3,945 and thus lacked \$334 of meeting the per-acre cost of production. Because the market gardeners produced only about half an acre each year their total loss was not great.

It cost about \$0.80 to produce a dozen bunches of parsley. These sold for an average of \$0.74 per dozen bunches.

The return per dollar of cost was only \$0.92. The return per hour of labor spent on the crop was \$1.48.

Peas

These market gardeners planted an average of 2.5 acres per year of peas to sell in the pod during the 1958-61 period. They used about 3 bushels of seed per acre, and put on 2.5 tons of manure and 1,300 pounds of commercial fertilizer. It took only 7 hours of growing labor per acre of peas, but the picking of the crop took considerable time. About 266 hours of labor were required to pick the 268 bushels of peas that were harvested per acre.

Peas cost \$191 per acre to grow. Seed and fertilizer were the big items of cost. Land cost in this case was fairly important although no higher per acre than for other more labor-intensive vegetables.

Most of the harvesting cost of the peas was labor. This amounted to \$300 out of the total of \$314. The selling cost was \$99 per acre. The total cost of production was \$603. The peas brought returns amounting to \$803, thus making a gain of \$200 per acre.

The cost of producing a bushel of peas in the pod was \$2.25. The peas returned \$3.00. The return per hour of labor was \$1.88, and the crop brought in \$1.33 for each dollar spent in producing it.

Table 16.

COSTS AND RETURNS FOR PEAS
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		2.5
Bushels sold per acre		268
Bushels seed per acre		3
Plant food per acre - tons of manure		2.5
	pounds of fertilizer	1,336
Man hours per acre - to grow		7
	to harvest	266
-per acre-		
Growing:	Land	\$ 23.44
	Manure	10.08
	Lime	1.00
	Fertilizer	42.13
	Cover crop	3.10
	Seed	49.45
	Spray and dust materials	9.12
	Irrigation	16.05
	Labor	12.47
	Tractor	5.27
	Other equipment	10.61
	All other	7.84
	Total growing	\$190.56
Harvesting:	Labor	\$299.82
	Equipment	7.51
	All other	6.20
	Total harvesting	\$313.53
Selling:	Packages	\$ 50.54
	Commission	7.22
	Marketing	41.14
	Total selling	\$ 98.90
Total cost per acre		\$602.99
Returns: Peas		\$803.31
Gain per acre		\$200.32
-per bushel-		
Cost		\$ 2.25
Value		3.00
Gain		0.75
Return per hour of labor		\$ 1.88
Return per dollar of cost		1.33

Peppers

During the 1958-61 period the market garden farmers grew an average of 10.7 acres of peppers per year. There were about 12,900 plants set per acre, and 1.6 tons of manure and 1,700 pounds of commercial fertilizer were used. It took 69 hours of labor to grow the crop and 185 to harvest it.

The total growing cost was \$482 per acre. Plants and labor accounted for more than half of the total. These cost \$147 and \$114 per acre, respectively. Irrigation and fertilizer were the next most important items.

Harvesting as noted above had a high labor requirement. This item accounted for most of the cost, \$306 out of the \$327 total. The selling cost totaled \$188 per acre. The sum of the growing, harvesting and selling costs was \$998.

The enterprise yielded 595 bushels of peppers per acre and returned the farmers \$1,155 per acre. The gain was \$157.

The peppers cost the farmer \$1.72 per bushel to produce and brought \$1.99 per bushel. The return per hour of labor was \$2.27, and the enterprise returned \$0.16 over the cost for each dollar invested.

Spinach

A fairly sizeable acreage of spinach was grown on this market garden farm in recent years. The average was 12.4 acres per year. About 24 pounds of seed were used per acre and 1.5 tons of manure and 1,400 pounds of fertilizer.

Fertilizer, labor and irrigation were the largest items of expense in growing. The 20 hours of labor were charged to the enterprise at \$33. Irrigation cost \$34 per acre. Fertilizer came to \$44. The total growing cost per acre averaged \$195.

The total harvesting cost was \$176 per acre. For a vegetable crop the amount of harvest labor was not great, averaging 95 hours per acre. The cost of this was \$157. The selling cost amounted to \$62 per acre.

The total cost of production averaged \$433 per acre. The 307 bushels of spinach sold brought \$431. The crop lost about \$2 per acre.

The cost per bushel of spinach averaged \$1.41, and the average returns were \$1.40. The return per hour of labor averaged \$1.64, and the return per dollar of cost was just a fraction under a dollar.

Table 19.

COSTS AND RETURNS FOR SPINACH
Market Garden Farm, 1958-61

Item		Amount
Average acres grown		12.4
Bushels sold per acre		307
Pounds of seed per acre		23.9
Plant food per acre - tons of manure		1.5
	pounds of fertilizer	1,442
Man hours per acre - to grow		20
	to harvest	95
-per acre-		
Growing:	Land	\$ 18.59
	Manure	7.96
	Lime	3.09
	Fertilizer	44.19
	Cover crop	2.05
	Seed	11.65
	Spray and dust materials	15.83
	Irrigation	33.82
	Labor	33.04
	Tractor	11.39
	Other equipment (includes truck)	8.57
	All other	4.66
	Total growing	\$194.84
Harvesting:	Labor	\$157.32
	Truck	10.56
	Other equipment (includes tractors)	5.34
	All other	3.03
	Total harvesting	\$176.25
Selling:	Packages	\$ 29.61
	Commission	17.40
	Handling	2.26
	Marketing	12.51
	Total selling	\$ 61.78
Total cost per acre		\$432.87
Returns:	Spinach	\$431.10
Loss per acre		\$ 1.77
-per bushel-		
Cost		\$ 1.41
Value		1.40
Loss		0.01
Return per hour of labor		\$ 1.64
Return per dollar of cost		1.00

Summer and Winter Squash

About 11.6 acres of land were devoted per year to the production of squash. The growing cost per acre averaged \$369. Of this \$110 was for the 2,000 plants and the small amount of seed that was used. The 44 hours of labor spent in growing cost \$74. The 1,200 pounds of fertilizer came to \$38. Hot caps and vitabands required an expenditure of \$40 per acre.

The harvesting cost amounted to \$251 of which \$232 was for the 140 hours of labor that were required. Selling came to \$113 per acre, and of this \$70 was for containers.

The total cost of production averaged \$734 per acre. The returns consisted of 413 bushels of squash which brought \$652 and a few plants worth \$5. This income lacked \$77 of meeting the cost.

The net cost of producing a bushel of squash was \$1.77. The squash returned only an average of \$1.58 per bushel.

The return per hour of labor spent on the enterprise was \$1.25. The crop only returned the farmers \$0.90 for each dollar that was spent in production.

Sweet Corn

Sweet corn generally was a profitable crop for these market gardeners. It tends to be a labor-extensive crop, and an average of 73.3 acres was grown per year recently. The growing cost per acre averaged \$147 of which land, irrigation and fertilizer were the most important items. The land cost at \$28 per acre was the biggest single item. Irrigation cost \$26 and fertilizer \$24 per acre.

The harvesting cost was low for a vegetable crop. It averaged only \$80 per acre of which \$69 was for the 42 hours of labor that were used. The selling cost came to \$58 per acre. Of this \$11 was for ice and \$23 for packages.

The total cost of production amounted to \$286 per acre. The returns from the 805 dozen ears of corn came to \$289 and from by-products to \$6 making a total of \$295 per acre. The crop left the farmer with a gain of \$9 per acre.

The average price realized was \$0.36. It cost the farmers \$0.35 to produce a dozen ears of corn, leaving about a penny a dozen profit. The return per hour of labor was \$1.85 and per dollar of cost \$1.03.

Tomatoes

During the 1958-61 period these market gardeners planted an average of 21.1 acres of tomatoes. Most of these went on the market as fresh fruit, but a small amount was sold for processing. The farmers planted an average of 5,200 plants per acre worth \$60. The fertilizer cost was moderate at \$32 per acre because the application was not high, amounting to only 1,000 pounds. Hot caps and tents amounted to \$36 per acre. The labor of growing took 35 hours worth \$58. The total cost of growing averaged \$312 per acre.

Harvesting cost \$438 per acre. Of this \$399 was for the 261 hours spent. The selling cost was \$148 per acre. The total production cost came to \$898.

There were an average of 572 bushels of tomatoes produced per acre during the period studied. This yield returned the farmer \$933 and resulted in a net profit of \$35 per acre.

The cost of production per bushel averaged \$1.57; the returns were \$1.63 and the profit \$0.06. The return per hour of labor was \$1.66. The enterprise returned the farmers \$1.04 for each dollar invested in the crop.

Relative Profitableness of Enterprises

This market garden farm did not show a profit on all vegetables each year. Some were consistently profitable; others were profitable enough in some years to offset the losses of others; still others, although occasionally profitable, showed generally unfavorable returns; a fourth and small group of vegetables showed consistent losses. During the 1958-61 period 9 out of the 22 vegetable enterprises did not show an over-all profit (Table 23). The farmers grew some of these in order to provide buyers with a fairly complete line of vegetables. The acreage of the less profitable vegetables was small. Most of the land was in the profitable enterprises.

The most profitable enterprises were lettuce, peas, egg plant and peppers. The least profitable were Brussels sprouts and celery cabbage. About four-fifths of the land has been in profitable vegetables.

Table 23. RETURN PER DOLLAR COST AND PER HOUR OF LABOR
Market Garden Farm, 1958-61

Crop	Acres grown	Return per dollar of cost	Return per hour of labor
<u>Vegetables</u>			
Beans, snap	23.7	\$1.09	\$1.32
Broccoli	2.9	0.94	1.49
Brussels sprouts*	0.1	0.62	0.85
Cabbage	25.2	1.05	1.93
Carrots*	0.8	0.88	1.11
Cauliflower, fall	21.6	1.05	1.86
Cauliflower, summer	8.2	1.26	2.73
Celery**	1.5	0.93	1.35
Celery cabbage	2.4	0.66	0.57
Cucumbers	11.8	1.03	1.76
Egg plant	1.8	1.33	2.87
Greens	4.9	0.96	1.56
Lettuce, iceberg	13.8	1.53	3.60
Lettuce, other	2.2	1.30	2.52
Melons	14.3	1.07	1.95
Parsley	0.4	0.92	1.48
Peas	2.5	1.33	1.88
Peppers	10.7	1.16	2.27
Spinach	12.4	1.00	1.64
Squash	11.6	0.90	1.25
Sweet corn	73.3	1.03	1.85
Tomatoes	21.1	1.04	1.66

* One year only

** 3-year average