ERS-79

Truck Crop Production Practices

BROWARD and PALM BEACH Counties, Florida

Labor, Power, and Materials
by Operation

Farm Economics Division
Economic Research Service
U. S. Department of Agriculture

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Growth Through Agricultural Progress

HOW TO USE THE DATA

Different kinds of data are needed for different purposes. Some persons have need for data on average labor, power, and material inputs, while others, particularly county agents and farm budgeters, prefer data for usual or typical labor, power, and material inputs. The data in this report are presented in such a way as to satisfy both these needs.

Tables 1 and 2 contain information on the characteristics of farms in the sample. The remaining tables are for specific crops. There are four tables and a chart for each crop. These four sets of tables are not numbered in the usual way but are designated by the letters A, B, C, and D.

The tables lettered A present quantities and costs of materials used and of contract work hired per acre. Cost items included are direct costs only; they do not include charges for such items as land, overhead labor, and capital. Data that present only direct costs are somewhat limited in use. They are applicable in computing costs incurred in connection with crop insurance programs and are useful in partial farm budgeting to compare costs of producing alternative crops when charges for overhead labor, machinery, land, and so on, are the same for either crop and, hence, need not be taken into account.

These data are not appropriate and would be misleading for use as the sole criteria in judging whether or not a farmer made a profit on a crop or whether he should stay in business, or in making cost comparisons with crops grown in other areas. For these purposes, total costs are required.

Tables designated B present the various operations performed on the crops, the most common size of equipment used, the average number of times the operation was performed, the acreage covered, the man and power inputs per acre, and the total labor and power used per acre. These data do not reflect an accurate picture of operations or inputs on any one farm; they are averages of all operations and inputs.

Tables designated C present usual or typical labor and power inputs by operation. The accompanying charts show the seasonality of the operation by periods.

Tables designated D present for each operation the composition of the work force by major sources of workers.

Data in these tables were obtained from a sample of growers and are subject to sampling error. For some crops, particularly those having limited numbers of observations, large sampling errors are possible. Therefore, these data should be considered as approximations.

Tables A, B, and D are offered for those persons interested in average requirements. However, extension economists, county agents, farm budgeters, and others may have more use for the data on usual or typical situations shown in table C for each crop.

Farm labor placement officials and others concerned with the problem of obtaining and placing workers may find tables B and D and the charts of value in determining the number of workers necessary for each operation, and the period of time during which local seasonal workers and those from other areas will be needed to supplement the regular farm labor force.

CONTENTS

Previous publications in this series of reports on 1959 truck-crop production practices covered the following areas:

Publication No.	Area Covered
ARS 43-132	Columbia County, Wis.
ERS-45	Accomack and Northampton Counties, Va.

Washington, D. C. October 1962

TRUCK CROP PRODUCTION PRACTICES

BROWARD and PALM BEACH COUNTIES, FLORIDA

Labor, Power, and Materials by Operation

By

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INTRODUCTION

In 1961, U.S. production of truck crops for fresh market and processing occupied 3.5 million acres of cropland. These crops used slightly more than 1 percent of the total cropland. The farm value of truck crops harvested for sale approached $1.2 billion, or an average of $333 per acre harvested.[1]

Although the total acreage of truck crops is small, it is highly concentrated in areas with conditions favorable for production of these crops. The major areas are in California, Florida, Texas, the Eastern Seaboard from Georgia to Long Island, N. Y., the States bordering the Great Lakes, and the Pacific Northwest.

Truck crops in general require intensive labor. Requirements are highly seasonal—with several labor peaks, the highest occurring at harvesttime.

Most truck-crop operations other than land preparation are difficult to mechanize. Thinning and weeding are two preharvest operations still performed largely by hand labor. Harvesting of a majority of truck crops is still predominantly a hand operation. Most of these crops require repetitive pickings, which must be timely, as quality deteriorates very rapidly if the crops are not harvested at the optimum time.

These high labor demands have been difficult to meet, particularly during peak periods of weeding, thinning, and harvesting. Most truck-crop areas do not have sufficient local labor available to handle the crops during these periods. This has led many thousands of workers to migrate from one area to another during the peak seasons. In addition, many thousands of foreign workers are imported annually to help satisfy these heavy seasonal labor demands.

Purchased inputs comprise a high proportion of the total inputs in the production of these crops. Most labor is hired. Fertilizer, seed, pesticides, and containers are significant items that are usually purchased. From 1953 to 1961, prices of these inputs increased relative to prices received for truck crops.

To gain further knowledge of some of the inputs involved in production of vegetables, information regarding the 1958-59 crop was obtained by personal interview with 2,496 growers in 12 selected major producing areas of the United States. The areas sampled

[1] U.S. Department of Agriculture Crop Reporting Board. Vegetables - Fresh Market 1961 Annual Summary - Acreage, Production, and Value of Principal Commercial Crops. Vg. 2-2-(61).

U.S. Department of Agriculture Crop Reporting Board. Vegetables - Processing 1961 Annual Summary - Acreage, Production, and Value of Principal Commercial Crops. Vg. 3-2-(61).

were the counties of (1) Erie, N. Y., (2) Accomack and Northampton, Va., (3) Colquitt, Ga., (4) Broward and Palm Beach, Fla., (5) Cameron and Hidalgo, Tex., (6) Berrien and Van Buren, Mich., (7) Columbia, Wis., (8) Yakima, Wash., (9) Marion, Oreg., (10) Imperial, Calif., (11) Monterey, Calif., and (12) San Joaquin, Calif. [2]

The areas included in the survey were selected on the basis of importance of seasonal and overall production, diversity of crops grown—both for fresh market and for processing—and number and proportion of farmers harvesting truck crops for sale.[3]

The survey population was defined as all farmers producing truck crops for sale whose farm headquarters were located within the survey area, except those residing outside the county and more than 20 road miles from their headquarters in the survey area. Within the survey area, a randomized area sampling plan was used to obtain the desired number of respondents.

This is the third in a series of 12 publications containing information on labor requirements, production practices, and costs involved in the production of truck crops for fresh market and for processing. The information in this series was obtained from 146 producers in Broward and Palm Beach Counties, Florida. The area studied is shown in figure 1.

A separate report covering all 12 areas will present information on the extent to which production of truck crops has become vertically integrated by either ownership or contractual agreements.

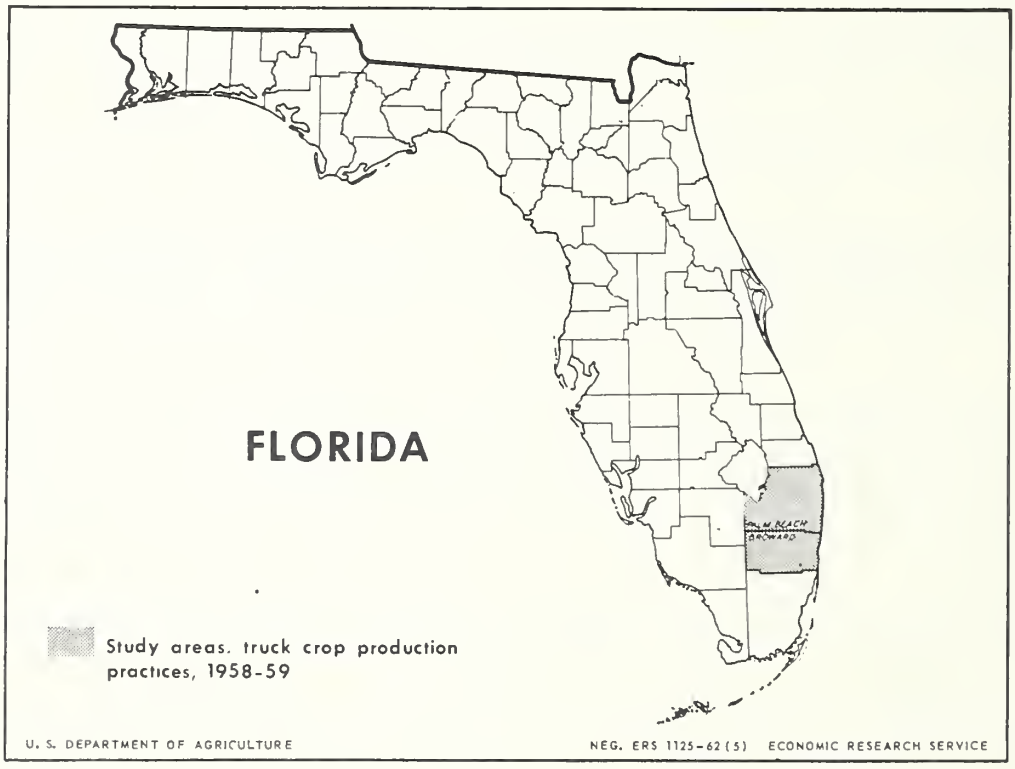

Figure 1

[2] The Crossley S-D Surveys, Inc., under U.S. Department of Agriculture, Agricultural Research Service contract #12-14-100-3826 (43), conducted the field survey and made preliminary tabulations. The author is responsible for the analysis of the data.

[3] Based on data cited in footnote 1 as well as the 1958 annual summaries of the same series; also the U.S. Department of Commerce Census of Agriculture, 1954, v. I and II.

CHARACTERISTICS OF BROWARD AND PALM BEACH COUNTIES, FLA.

Florida is one of the most important States producing vegetables for the fresh market. In 1961, it ranked second only to California in acreage, amount of production, and value of production. The 14 principal fresh market vegetables produced in Florida were grown on 254,200 acres and yielded 3,128,500,000 pounds valued at $137,349,000.[4] Florida is the leading winter vegetable-producing State. The bulk of its produce is marketed from December to May, when most other producing areas are idle.

Vegetables are grown throughout the State, but the area composed of Broward, Dade, and Palm Beach Counties is the most important from the standpoint of acreage and value of sales. At the time the study was initiated, the 1954 Census of Agriculture contained the latest county data available. These three counties in 1954 accounted for 7 percent of farms harvesting vegetables for sale, 36 percent of the acreage harvested, and 49 percent of the value of sales. Broward and Palm Beach Counties were selected as sample counties for this study, chiefly because of the diversity of truck crops produced. Dade County, which had more than two-thirds of its 1954 truck crop acreage in tomatoes, was excluded.

The 1954 census reported that the two sample counties had a total of 420 farms harvesting 91,852 acres of truck crops with a production valued at $26,186,000.

By 1959, Census reported the vegetable industry to be located on 215 farms. These farms harvested 97,430 acres of truck crops with production valued at $29,731,200.[5]

Broward and Palm Beach Counties have a wide range of soil conditions. In western areas of the counties, peat and muck soils, extremely high in organic matter, predominate. Soils along the Atlantic coast approach pure sand. The land is extremely low and flat, necessitating very close control over irrigation and drainage. Sandy soils that are low in content of humus require nearly constant irrigation if plants are to grow unchecked. On the muck soils, drainage is more critical than irrigation.

Several different irrigation districts are in the area. While all districts charged a flat rate fee per acre, the fees varied among districts. Flat rate fees are used, rather than fees per unit of water, because of the extremely variable use made of the irrigation systems. It is not uncommon for a grower to be irrigating a field when a shower hits, and he must immediately reverse his pumps to drain excess water from his field. On the next day, he may be irrigating again. Labor requirements for irrigation and drainage were difficult to obtain. Growers estimated the total amount of time required per acre, but declined to hazard an estimate as to the number of times their fields were irrigated or drained or the length of time their pumps were in operation.

Vegetable producers, in general, raise only vegetables. Land is much too valuable to devote to livestock or the production of livestock feed. This high degree of concentration of vegetables presents some serious production problems, such as infestation by insects and birds, and infection by diseases. The spray and dust programs of growers of some truck crops indicate nearly daily activity. Protecting crops, particularly sweet corn, from the ravages of birds is a serious problem. Many migratory birds winter in Florida and congregate in such numbers that growers must maintain bird watches to drive the birds away. State law prohibits killing the birds, so the growers resort to firing shotguns and other noisemakers, hoping to scare the birds from the fields.

Most of the vegetables grown in the area have short harvest seasons. To provide consumers with fresh vegetables throughout the winter, growers make a series of plantings of a crop so that some acreage will be harvested each week throughout the winter. Some of the more tender crops, such as snap beans and peppers, when planted to be harvested in December, January, and February, must be protected from cold North winds.

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[4] See footnote 1.

[5] U.S. Department of Commerce, Bureau of the Census, 1959 Census of Agriculture, v. I, pt. 29.

Growers plant every 5th to 9th row into sunflowers which serve as a windbreak. Snap beans and sweet peppers had sunflower windbreaks planted on 28 percent and 18 percent of their respective acreages.

Late in 1959, information regarding the 1958-59 production of truck crops was obtained by personal interview with operators of 146 farms. The survey farms represented a 68-percent sample of all farms, in the two counties that harvested truck crops for sale. On the average, these farms had 383 acres of cropland. Because of double- and triple-cropping of land, vegetables were grown on 512 acres. In general, farms in the area produce two or more different truck crops; the larger farms are the more diversified (table 1). This report presents information on six vegetables grown for the fresh market (table 2).

Table 1.--Sample farms: Number, average acreage of cropland, and distribution by number of truck crops produced by farms in each size group, Broward and Palm Beach Counties, Fla., 1958-59

Cropland operated (acres)	Farms in size groups	Average acreage of cropland per farm	Distribution by number of crops produced						
			1	2	3	4	5	6	7
	Number	Acres	Farms	Farms	Farms	Farms	Farms	Farms	Farms
Under 30.0-------	27	12.3	15	5	6	0	0	0	1
30.0 to 99.9-----	32	59.1	6	15	7	2	2	0	0
100.0 to 299.9---	33	168.7	5	12	8	4	3	1	0
300.0 to 639.9---	24	383.1	6	6	9	3	0	0	0
640.0 to 1,399.9-	19	1,021.1	9	2	3	2	1	2	0
1,400.0 and over-	7	2,570.9	1	2	1	0	1	2	0
Total or average------	[1] 142	383.0	42	42	34	11	7	5	1

[1] Four respondents did not report total acres.

Table 2.--The importance of truck crops for fresh market, 146 farms, Broward and Palm Beach Counties, Fla., 1958-59

Crop	Farms producing[1]	Acreage harvested	
		Total	Average per farm
	Number	Acres	Acres
Snap beans----------	73	16,326	223.6
Cabbage----------	25	1,978	79.1
Sweet corn----------	34	21,162	622.4
Eggplant----------	36	672	18.7
Sweet peppers----------	65	2,540	39.1
Squash----------	30	552	18.4
Other[2]----------	---	31,562	---
Total----------	146	74,792	512.3

[1] Number of farms producing does not add to the total because many farms produced more than one crop.

[2] Includes green lima beans, cantaloups, carrots, cucumbers, lettuce and romaine, onions, peas, tomatoes, strawberries, watermelons, celery, collards, endive and escarole, turnips, okra, black-eyed peas, radishes, parsley, dandelion greens, butter beans, and Chinese cabbage. Not included in the table are 2,220 acres of snap beans and carrots grown for processing.

VEGETABLES FOR FRESH MARKET

Snap Beans

Data presented in figure 2 and tables A, B, C, and D are based on information obtained covering production of snap beans for fresh market on 6,872.5 acres, on 37 farms, in the 1958-59 crop year. The average yield was 88 bushels per acre.

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. The size of tractor was not obtained, but, considering the size of equipment used, it appears that the average was about a 3-plow tractor with a drawbar horsepower rating of 20 to 30.

Growers reported 58 percent of the acreage planted in beds. Of the bedded acreage, about one-third was bedded and planted in one operation.

Labor contractors' crews harvested the snap beans. Domestic migrants made up nearly four-fifths of the harvesting force. Piece rates paid for picking ranged from $0.55 to $1.00 per bushel and averaged $0.62.

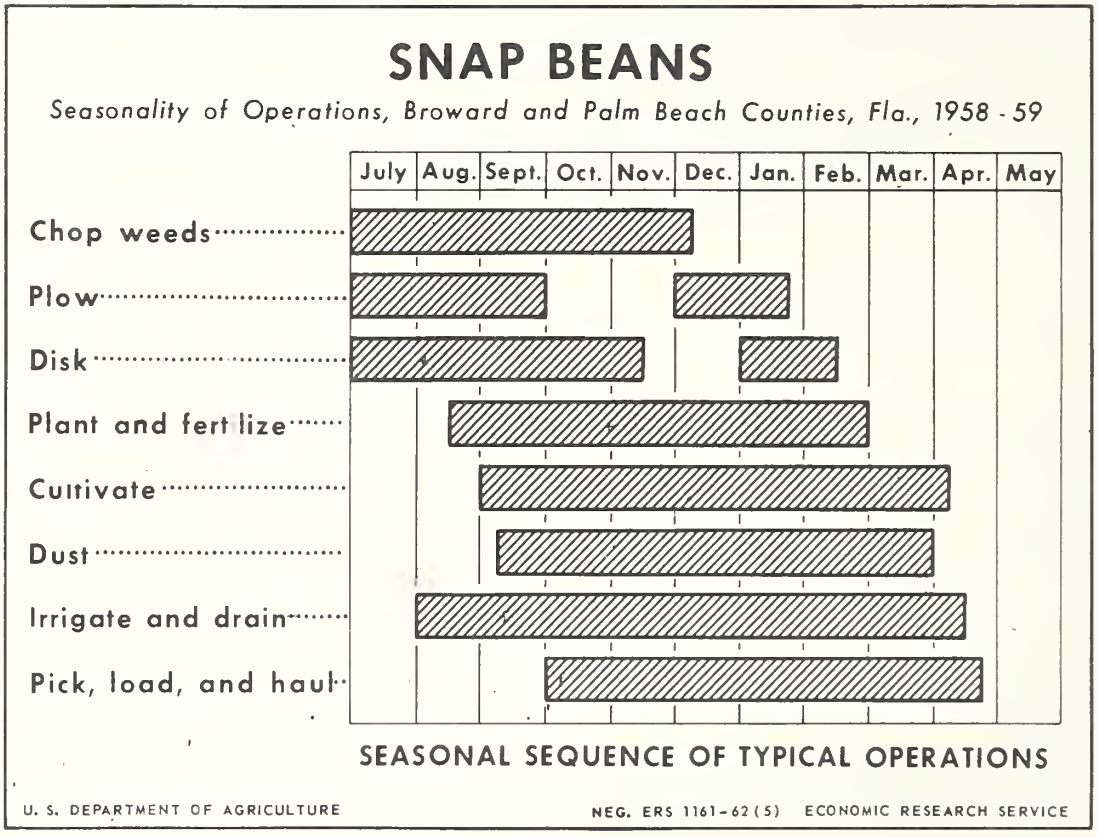

Figure 2

Table A.--Snap beans: Materials used and contract work hired, averages for 6,872.5 acres on 37 farms, Broward and Palm Beach Counties, Fla., 1959

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	55	0.26	14.30	100	14.30
Seed, sunflower (windbreaks)	Pound	1.8	.25	.45	28	.13
Fertilizer, 4-7-5	Cwt.	9.0	2.44	21.96	40	8.78
Fertilizer, 8-0-8	Cwt.	4.9	3.24	15.88	11	1.75
Fertilizer, 0-14-5	Cwt.	4.9	2.26	11.07	36	3.99
Fertilizer, 6-4-8	Cwt.	12.0	2.60	31.20	23	7.18
Spray, mixture[1]	Gallon	205	.056	11.48	39	4.48
Dust, 90-10 sulfur-manganese[1]	Pound	81	.066	5.35	60	3.21
Containers, bushel	Each	88	.36	31.68	100	31.68
Irrigation/district fee	Acre	1	3.00	3.00	85	2.55
Total	---	---	---	---	---	78.05
Contract work hired:						
Clean ditches by dragline	Hour	0.62	9.34	5.79	19	1.10
Lime by truck	Ton	.8	9.84	7.87	9	.71
Spray by plane, application only	Acre	4.0	1.50	6.00	23	1.38
Dust by plane, application only	Pound	75	.025	1.88	30	.56
Total	---	---	---	---	---	3.75
Total material and contract work	---	---	---	---	---	[2] 81.80

[1] Includes materials applied by plane.
[2] Average yield per acre--88 bushels. Average material and contract work per bushel--$0.93.

Table B.--Snap beans: Labor, power, and machinery used in producing and harvesting, averages for 6,872.5 acres on 37 farms, Broward and Palm Beach Counties, Fla., 1959

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Chop weeds	9-foot devil catcher	0.5	0.5	1.3	73	0.5	0.5
Clean ditches	1/2-yard dragline	.3	.3	1.0	25	.1	.1
Clean ditches (custom)	1/2-yard dragline	.6	.6	1.0	19	.1	.1
Clean ditches by hand		3.7	3.7	1.0	37	1.4	1.4
Lime (custom)	truck spreader	.4	.4	1.0	9	([1])	([1])
Plow	2-bot. disk plow	1.0	1.0	1.0	57	.6	.6
Disk	10-foot tandem	.4	.4	4.4	99	1.7	1.7
Moledrain	2-hole mole	.5	.5	1.0	11	.1	.1
Level	1-bed leveler	.5	.5	1.2	10	.1	.1
Drag	12-foot drag	.3	.3	1.2	15	.1	.1
Bed	1-bed bedder	.8	.8	1.0	38	.3	.3
Fertilize	1-bed spreader	1.6	.9	1.5	33	.8	.4
Plant windbreak	1-row planter	.4	.2	1.0	22	.1	([1])
Plant windbreak and beans	5-row planter	1.8	.9	1.0	6	.1	.1
Plant and fertilize	2-row planter	1.4	.9	1.0	61	.9	.5
Bed and Plant	2-row planter	1.8	1.1	1.0	20	.4	.2
Plant	4-row planter	1.3	.7	1.0	13	.2	.1
Cultivate and fertilize	2-row cult./fert. attachment.	.9	.5	1.1	32	.3	.2
Cultivate	4-row cultivator	.6	.6	2.6	94	1.5	1.5
Make cross ditches by hand		3.7	---	1.0	32	1.2	---
Spray (custom)	plane	([1])	([1])	4.0	23	([1])	([1])
Dust (custom)	plane	([1])	([1])	2.0	[2] 30	([1])	([1])
Spray	8-row boom sprayer	.4	.3	2.3	16	.1	.1
Dust	8-row duster	.1	.1	3.3	60	.2	.2
Hoe and thin by hand		12.8	---	1.5	2	.4	---
Irrigate and drain	pumps	([3])	([3])	([3])	85	1.3	([3])
Total		----	---	---	--	12.5	8.3
Harvest:							
Pick and load by hand, and haul by truck	2-1/2-ton stake truck	35.3	0.7	2.4	100	84.7	1.7
Total preharvest and harvest		----	---	---	---	[4] 97.2	[4] 10.0

[1] Less than 0.05 hour.
[2] Applied on same acreage as that dusted by 8-row machines.
[3] Data not available; maintenance on a continuous basis.
[4] Average yield per acre--88 bushels. Average labor and power used per bushel--1.1 hours and 0.11 hour, respectively.

Table C.--Snap beans: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	1	0.5	0.5	0.5	0.5
Plow	1	1.0	1.0	1.0	1.0
Disk	4	.4	.4	1.6	1.6
Plant and fertilize	1	1.4	.9	1.4	.9
Cultivate	3	.6	.6	1.8	1.8
Dust	3	.1	.1	.3	.3
Irrigate and drain	([1])	1.3	([1])	1.3	([1])
Pick and load by hand and haul by truck	2.4	35.3	.7	84.7	1.7
Total	---	---	---	92.6	7.8

[1] Data not available, maintenance on a continuous basis.

Table D.--Snap beans: Distribution of workers performing specified operations, by type of worker, 37 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of worker					
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Puerto Rican	Custom operators
	Percent	Percent	Percent	Percent	Percent	Percent
Chop weeds	19	44	37	0	0	0
Clean ditches	0	11	21	0	0	68
Clean ditches by hand	0	18	27	0	55	0
Lime (custom)	0	0	0	0	0	100
Plow	20	38	42	0	0	0
Disk	25	40	35	0	0	0
Moledrain	34	33	33	0	0	0
Level	20	20	60	0	0	0
Bed	19	62	19	0	0	0
Drag	33	50	17	0	0	0
Fertilize	10	48	39	0	3	0
Plant windbreak	38	25	37	0	0	0
Plant windbreak and beans	0	33	67	0	0	0
Plant and fertilize	10	41	49	0	0	0
Bed and plant	10	46	40	0	4	0
Plant	10	46	40	0	4	0
Cultivate and fertilize	0	94	6	0	0	0
Irrigate and drain	20	66	14	0	0	0
Cultivate	18	42	40	0	0	0
Make cross ditches by hand	4	0	4	67	25	0
Spray (custom)	0	0	0	0	0	100
Spray	8	23	69	0	0	0
Dust	8	42	50	0	0	0
Dust (custom)	0	0	0	0	0	100
Hoe and thin	8	0	54	0	38	0
Pick, load, and haul	0	2	20	78	0	0

Cabbage

Data presented in figure 3 and tables A, B, C, and D are based on information obtained covering production of cabbage for fresh-market use on 971 acres on 13 farms in 1958-59. The average yield per acre was 392 crates (50-pound) per acre.

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. The size of tractor was not obtained, but, considering the size of equipment used, it appears that the average tractor was about a 3-plow tractor with a drawbar horsepower rating of 20 to 30.

On 80 percent of the acreage, cabbage was direct-seeded and later thinned to the desired stand of plants. The remaining acreage was set with transplants which had been thinned from direct seeded fields.

Piece rates for harvesting cabbage ranged from $0.13 to $0.30 per 50-pound crate. When the operator hired and supervised the crew, he paid from $0.13 to $0.18 to cut, pack, load, and haul a 50-pound crate. When the operator hired a labor contractor to provide the crew and supervise the harvesting, the average rate paid the contractor was $0.26 per crate and ranged from $0.22 to $0.30. Approximately half of the acreage was harvested by labor contractors' crews.

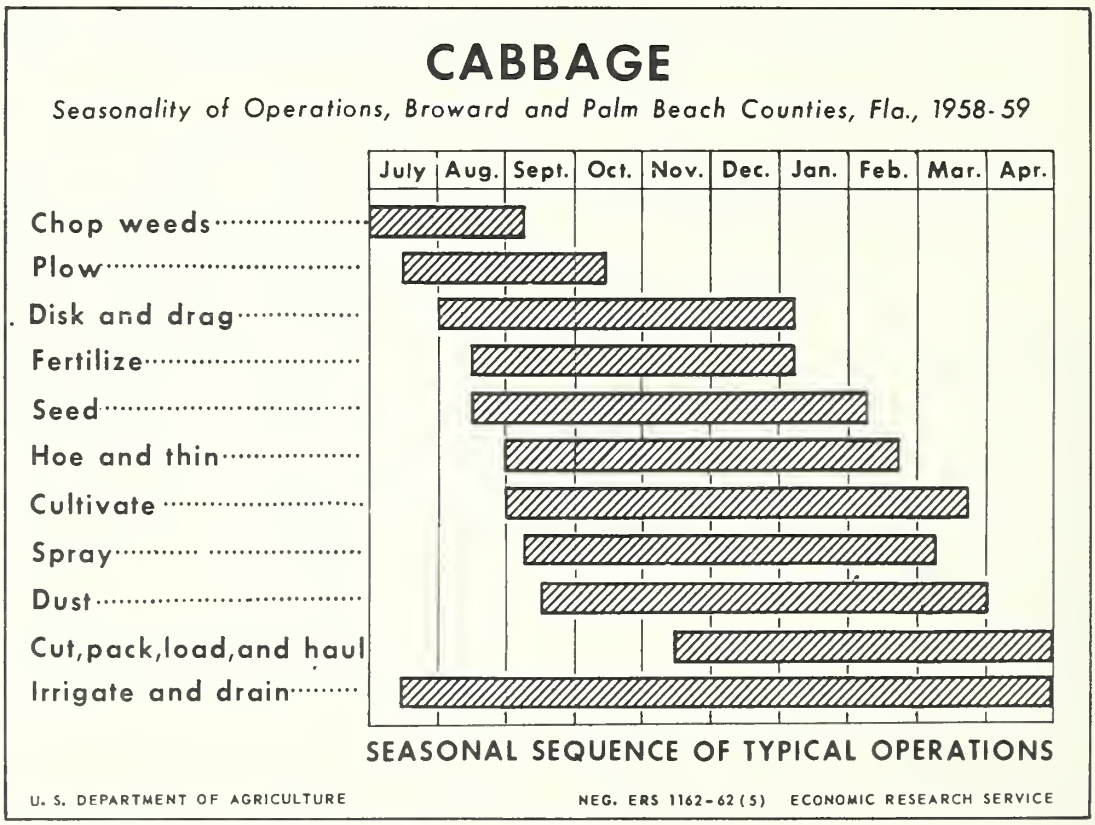

Figure 3

Table A.--Cabbage: Materials used and contract work hired, averages for 971 acres on 37 farms, Broward and Palm Beach Counties, Fla., 1958-59

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	1.4	3.90	5.46	100	5.46
Fertilizer, 0-8-24	Cwt.	5.75	3.08	17.71	100	17.71
Spray, mixture	Gallon	664.1	.039	25.90	76	19.68
Dust, toxaphene and parathion[1]	Pound	247.6	.102	25.26	50	12.63
Crates, 50-pound	Each	392	.405	158.76	100	158.76
Irrigation/district fee	Acre	1	2.00	2.00	70	1.40
Total	---	---	---	---	---	215.64
Contract work hired:						
Clean ditches, 1/2 yard dragline	Hour	1.6	10.00	16.00	30	4.80
Dust by plane, application only	Pound	20	.025	.50	8	.04
Total	---	---	---	---	---	[2] 220.48

[1] Includes materials applied by plane.
[2] Average yield per acre--392 crates (50-pound). Average cost of materials and contract work per crate--$0.56.

Table B.--Cabbage: Labor, power, and machinery used in producing and harvesting, averages for 971 acres on 13 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Chop weeds	9-foot weed chopper	0.3	0.3	1.4	83	0.3	0.3
Clean ditches	1/2-yard dragline	.4	.4	1.0	21	.1	.1
Clean ditches (custom)	1/2-yard dragline and truck	1.6	1.6	1.0	30	.5	.5
Plow	2-bot. disk plow	.9	.9	1.0	89	.8	.8
Moledrain	2-hole mole	.6	.6	1.0	19	.1	.1
Disk and drag	10-foot tandem and drag	.3	.3	4.9	100	1.5	1.5
Level	12-foot Sarasota leveler	.4	.4	1.0	36	.1	.1
Fertilize	4-row distributor	.5	.3	1.2	69	.4	.2
Seed	4-row seeder	1.1	.7	1.0	69	.8	.5
Seed and fertilize	4-row seeder/fert. attachment.	1.2	.6	1.0	11	.1	.1
Hoe and thin		23.8	---	1.3	73	22.6	---
Thin plants by hand, set and fertilize by machine	4-row planter/fert. attachment.	40.3	2.3	1.0	20	8.1	.5
Pack and roll by hand		4.0	---	2.0	10	.8	---
Cultivate	4-row sweep	.6	.6	4.7	100	2.8	2.8
Spray	8-row boom sprayer	.4	.3	9.8	76	3.0	2.2
Dust	8-row duster	.1	.1	9.1	50	.5	.5
Dust (custom)	plane	(1)	(1)	1.0	[2] 8	(1)	(1)
Weed by hand		6.0	---	1.0	10	.6	---
Irrigate and drain	pumps	(3)	(3)	(3)	70	0.7	(3)
Total		---	---	---	---	43.8	10.2
Harvest:							
Cut, pack, and load by hand, and haul by truck	Truck	21.9	1.6	2.8	100	61.3	4.5
Total		---	---	---	---	61.3	4.5
Total preharvest and harvest		---	---	---	---	[4] 105.1	[4] 14.7

[1] Less than 0.05.
[2] Applied on same acreage as that dusted by 8-row machines.
[3] Data not available, maintenance on a continuous basis.
[4] Average yield per acre--392 crates (50-pound). Average labor and power hours per crate--0.27 hour and 0.04 hour, respectively.

Table C.--Cabbage: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	1	0.3	0.3	0.3	0.3
Plow	1	.9	.9	.9	.9
Disk and drag	5	.3	.3	1.5	1.5
Fertilize	1	.5	.3	.5	.3
Seed	1	1.1	.7	1.1	.7
Hoe and thin	1	23.8	---	23.8	---
Cultivate	5	.6	.6	3.0	3.0
Spray	10	.4	.3	4.0	3.0
Dust	9	.1	.1	.9	.9
Irrigate and drain	([1])	([1])	([1])	1.0	([1])
Cut, pack, load, and haul	2.8	21.9	1.6	61.3	4.5
Total	---	---	---	98.3	15.1

[1] Data not available, maintenance on a continuous basis.

Table D.--Cabbage: Distribution of worker performing specified operations, by type of worker, 13 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of Worker				
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Custom operators
	Percent	Percent	Percent	Percent	Percent
Chop weeds	10	60	30	0	0
Clean ditches	34	33	33	0	0
Clean ditches (custom)	0	0	0	0	100
Plow	18	55	27	0	0
Moledrain	0	67	33	0	0
Disk and drag	29	50	21	0	0
Level	20	60	20	0	0
Fertilize	14	72	14	0	0
Seed	7	57	36	0	0
Seed and fertilize	5	60	35	0	0
Hoe and thin	0	0	66	34	0
Thin and set plants	0	31	54	15	0
Pack and roll	0	100	0	0	0
Cultivate	8	59	33	0	0
Spray	6	67	27	0	0
Dust	12	50	38	0	0
Dust (custom)	0	0	0	0	100
Weed	0	0	50	50	0
Irrigate and drain	9	81	10	0	0
Cut, pack, load, and haul	0	1	52	47	0

Sweet Corn

Data presented in figure 4 and tables A, B, C, and D are based on information obtained covering production of sweet corn grown for the fresh market on 11,405 acres, on 22 farms, in 1958-59. The average yield per acre was 156 crates (5-dozen ears).

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. Drawbar horsepower ratings were not obtained, but size of equipment used indicates that these tractors were 2- and 3-plow tractors with drawbar horsepower ratings of 15 to 30.

Sweet corn is planted from the first of August to the last of March, and is harvested from the last of October to early in June. For two weeks after planting and for the week prior to harvesting, a bird-watching crew is maintained. Usually one man covers 40 acres and fires shotgun shells to scare the birds away before they damage the new planting or the maturing crop. Some farmers also contracted with airplane operators to have them scare birds by buzzing the fields the last few days just prior to harvest.

Piece rates paid for hand harvesting ranged from $0.20 to $0.40 per 5-dozen-ear crate and averaged $0.36. Workers engaged in harvesting with the "muletrain"--a mobile multi-row gathering, grading, and packing station--were usually paid on an hourly basis. The operation of this machine, which was used to harvest nearly one-third of the acreage, is as follows: Workers--walking one to a row--pull corn by hand and place it on the machine's cross conveyors which carry the ears to a central return-flow belt. At numerous packing stations along this belt corn is hand-graded and packed into shipping crates. Full crates are placed on another conveyor which carries them back from the machine to following trucks. Empty crates are assembled on the roof of the muletrain and then conveyed down to the packing stations, either by mechanical conveyor or by gravity.

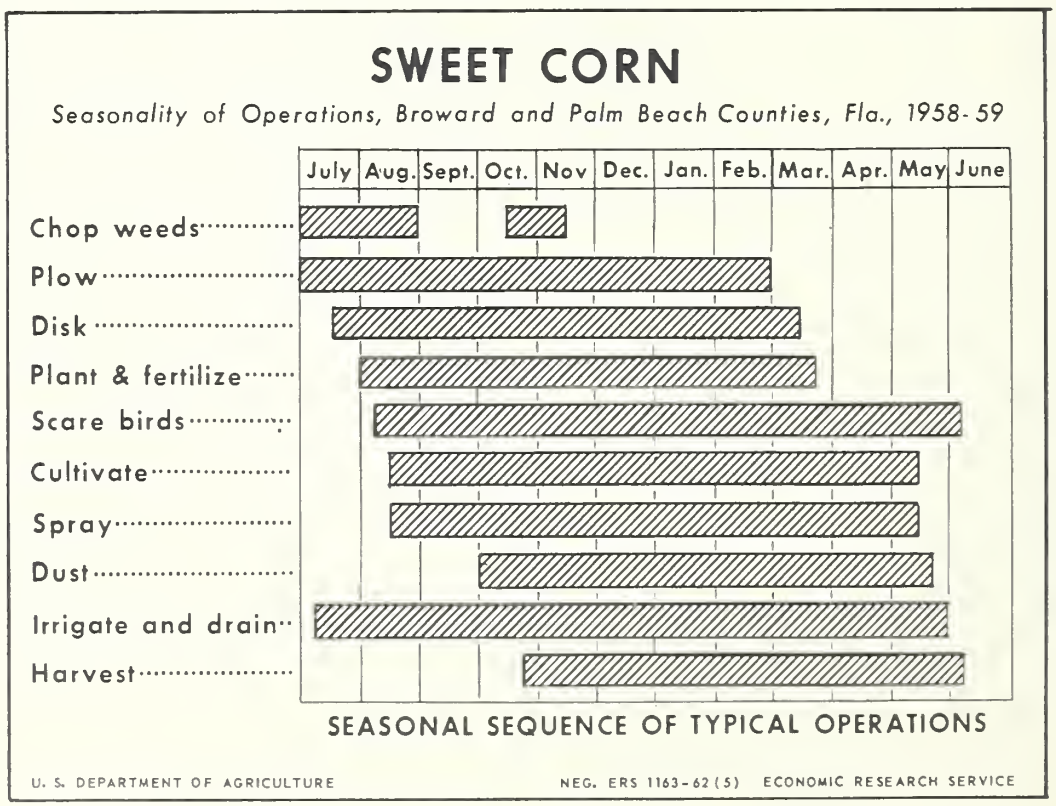

Figure 4

Table A.--Sweet corn: Materials used and contract work hired, averages for 11,405 acres on 22 farms, Broward and Palm Beach Counties, Fla., 1958-59

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	12.7	0.50	6.35	100	6.35
Fertilizer, 0-12-16	Cwt.	9.69	3.07	29.75	100	29.75
Spray, materials[1]	Applic.	15.8	2.08	32.86	98	32.20
Dust, parathion-DDT	Pound	236.4	.064	15.13	59	8.93
Dust, for plane applic.	Pound	118.3	.067	7.93	49	3.89
Shotgun shells, box (25 rounds)	Each	3.2	2.54	8.13	51	4.15
Crates (5-dozen ears)	Each	156	.34	53.04	100	53.04
Irrigation/district fee	Acre	1	2.80	2.80	100	2.80
Total		---	---	---	---	141.11
Contract work hired:						
Apply dust by plane	Pound	118.3	0.026	3.08	49	1.51
Clean ditches with dragline	Hour	.5	9.59	4.80	17	.82
Scare birds by plane	Hour	.1	6.70	.67	40	.27
Total		---	---	---	---	2.60
Total materials and contract work		---	---	---	---	[2] 143.71

[1] Spray materials were used in such variety and at such varied rates of application that a single quantity figure of mixed ingredients is meaningless.

[2] Average yield per acre--156 crates (5-dozen ears). Average cost of materials and contract work per crate--$0.92.

Table B.--Sweet corn: Labor, power, and machinery used in producing and harvesting, averages for 11,405 acres on 22 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Chop weeds	9-foot chopper	0.2	0.2	1.1	60	0.1	0.1
Clean ditches (custom)	1/2-yard dragline and dump trucks.	.5	.5	1.0	17	.1	.1
Plow	2-disk	.7	.7	1.0	92	.6	.6
Disk	12-foot tandem	.2	.2	3.9	100	.8	.8
Moledrain	2-hole mole	.4	.4	1.0	18	.1	.1
Level	10-foot leveler	.6	.6	2.4	10	.1	.1
Plant and fertilize	4-row planter/attach.	1.4	.6	1.0	93	1.3	.6
Fertilize	4-row distributor	.9	.7	1.0	7	.1	([1])
Plant	4-row planter	.8	.6	1.0	7	.1	([1])
Scare birds by hand		.3	---	20.4	51	3.1	---
Scare birds (custom)	Plane	([1])	([1])	23.6	40	.1	.1
Cultivate	4-row	.3	.3	2.7	100	.8	.8
Cultivate and fertilize	2-row cult./attach.	.6	.5	2.9	1	([1])	([1])
Spray	12-row boom	.2	.1	15.8	98	3.1	1.5
Dust	8-row	.2	.1	7.1	59	.8	.4
Dust (custom)	Plane	([1])	([1])	3.4	49	.1	.1
Hoe and thin by hand		4.2	---	1.0	38	1.6	---
Cross ditch by hand		7.6	---	1.0	2	.2	---
Clean machine rows	10-foot disk	.1	.1	3.0	10	([1])	([1])
Irrigate and drain	Pumps	([2])	([2])	([2])	100	1.9	([2])
Total		---	---	---	---	15.0	5.3
Harvest:							
Pick, pack and load by hand, haul by tractor and truck	Wagons and truck	30.5	4.0	1.1	69	23.1	3.0
Pick by hand onto conveyor, field pack by hand, and haul by truck	Muletrain and trucks	26.0	2.3	1.0	31	8.1	.7
Total		---	---	---	---	31.2	3.7
Total preharvest and harvest		---	---	---	---	[3] 46.2	[3] 9.0

[1] Less than 0.05 hour.
[2] Data not available, maintenance on a continuous basis.
[3] Average yield per acre--156 crates (5-dozen ears). Average labor and power hours per crate--0.30 hour and 0.06 hour, respectively.

Table C.--Sweet corn: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	1	0.2	0.2	0.2	0.2
Plow	1	.7	.7	.7	.7
Disk	4	.2	.2	.8	.8
Plant and fertilize	1	1.4	.6	1.4	.6
Scare birds by hand	20	.3	---	6.0	---
Cultivate	3	.3	.3	.9	.9
Spray	16	.2	.1	3.2	1.6
Dust	7	.2	.1	1.4	.7
Irrigate and drain	([1])	([1])	([1])	1.9	([1])
Pick, pack, and load by hand, and haul by truck	1	30.5	4.0	30.5	4.0
Total	---	---	---	47.0	9.5

[1] Data not available, maintenance on a continuous basis.

Table D.--Sweet corn: Distribution of workers performing specified operations, by type of worker, 22 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of worker					
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Foreign	Custom
	Percent	Percent	Percent	Percent	Percent	Percent
Chop weeds	30	70	0	0	0	0
Clean ditches (custom)	0	0	0	0	0	100
Plow	6	78	16	0	0	0
Disk	9	77	14	0	0	0
Moledrain	14	72	14	0	0	0
Level	20	60	20	0	0	0
Plant and fertilize	3	77	20	0	0	0
Fertilize	6	69	25	0	0	0
Plant	40	52	8	0	0	0
Scare birds by hand	0	43	57	0	0	0
Cultivate	13	75	12	0	0	0
Cultivate and fertilize	0	60	40	0	0	0
Spray	7	73	20	0	0	0
Dust	3	72	25	0	0	0
Dust (custom)	0	0	0	0	0	100
Hoe and thin by hand	0	20	80	0	0	0
Cross ditch by hand	0	0	100	0	0	0
Clean machine rows	0	100	0	0	0	0
Irrigate and drain	10	70	20	0	0	0
Pick, pack, and load by hand, haul by truck	0	5	39	34	22	0
Pick by hand onto conveyor, field pack by hand, and haul by truck	0	26	58	16	0	0

Eggplant

Data presented in figure 5 and tables A, B, C, and D are based on information obtained covering production of eggplant on 460.5 acres on 24 farms, in 1958-59, for the fresh market. The average yield was 554 bushels per acre.

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. The size of tractor was not obtained, but considering size of equipment used, it appears that the average tractor was about a 2-plow tractor with a drawbar horsepower rating of 15 to 20.

With successive plantings, the production of eggplant is a year-round operation that starts in June with land preparation and terminates in July, a year hence, with harvesting. This crop is a high user of labor. It requires frequent fertilizing, cultivating, and spraying. On some farms all cultivation is done by hand. In fact, on 36 percent of the acreage, hand hoeing and weeding was the only form of cultivation used.

Harvesting tends to be a slow process, as the tender eggs must be cut from the plant, washed, wrapped in individual papers, and carefully packed into bushel shipping baskets. In addition, eggplants require many pickings. On the average, the acreage studied was harvested 19.2 times. Domestic migrants and Puerto Ricans made up the bulk of the harvesting force. Workers were paid either hourly or daily wages, rather than piece rates — the most common method of payment for harvesting most vegetables. Payment was made on a time basis because this method minimizes damage in picking and packing.

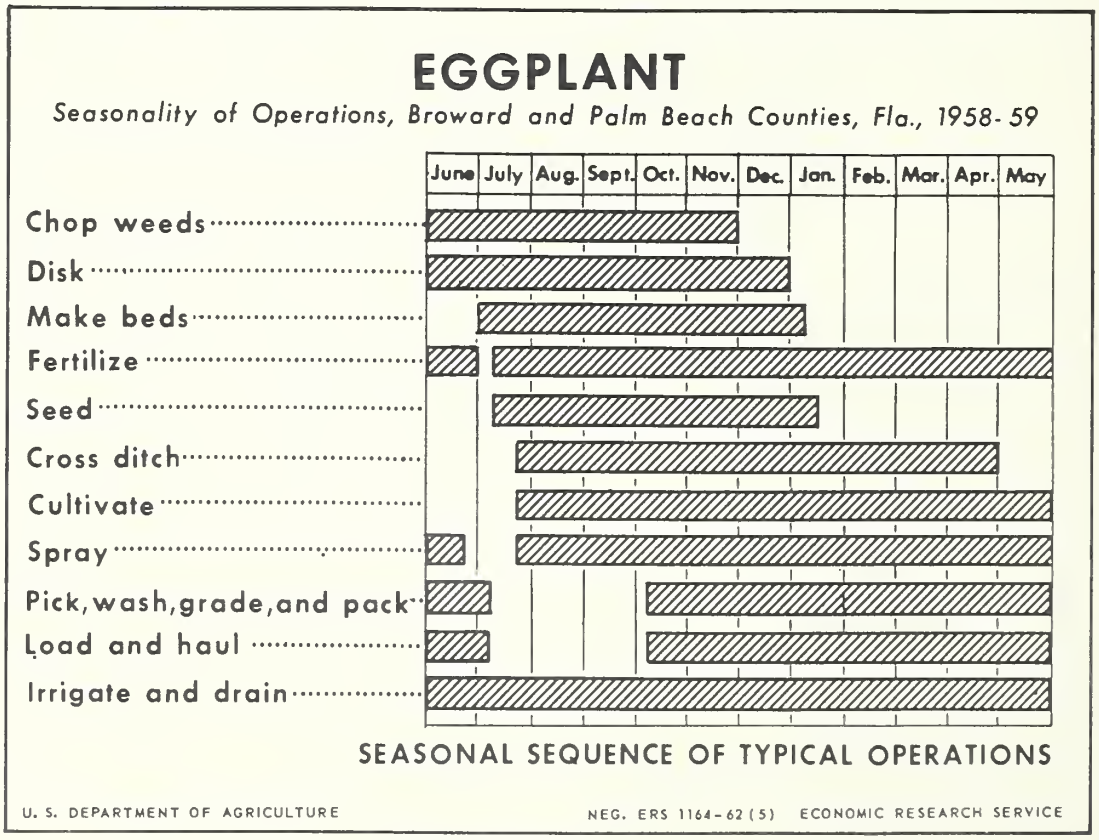

Figure 5

Table A.--Eggplant: Materials used and contract work hired, averages for 460.5 acres on 24 farms, Broward and Palm Beach Counties, Fla., 1958-59

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	1.53	7.48	11.44	100	11.44
Fertilizer, 4-7-5	Cwt.	46.5	2.61	121.36	100	121.36
Dust, Cu-Su-DDT	Pound	278.0	.112	31.14	38	11.83
Spray materials[1]	Applic.	16.0	3.32	53.12	84	44.62
Fumigant, vapan	Gallon	13.8	2.94	40.57	18	7.30
Fertilizer, castor pomace	Cwt.	8.8	3.36	29.57	17	5.03
Crates (bushel) with papers	Each	554	.44	243.76	100	243.76
Irrigation/district fee	Acre	1	2.09	2.09	89	1.86
Poison bait, chlorodane[2]	Cwt.	.5	6.35	3.18	16	.51
Total		---	---	---	---	447.71
Contract work hired:						
Lime, spread by truck	Ton	0.53	10.75	5.70	42	2.39
Clean ditches, 1/2-yard dragline	Hour	1.8	10.00	18.00	45	8.10
Apply dust by plane	Pound	509.2	.035	17.82	32	5.70
Apply spray by plane	Acre	13.3	1.73	23.01	28	6.44
Total		---	---	---	---	22.63
Total materials and contract work		---	---	---	---	[3] 470.34

[1] Spray materials were used in such variety and at such varied rates of application that a single quantity figure of mixed ingredients is meaningless.

[2] Applied at planting time for control of grubs and wireworms.

[3] Average yield per acre--554 bushels. Average cost of materials and contract work per bushel--$0.85.

Table B.--Eggplant: Labor, power, and machinery used in producing and harvesting, averages for 460.5 acres, on 24 farms Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Chop weeds		0.8	0.8	1.4	67	0.8	0.8
Clean ditches (custom)	1/2-yard dragline and dump truck.	3.0	1.8	1.0	45	1.4	.8
Plow	3-bot. disk plow	.9	.9	1.0	8	.1	.1
Disk	6-foot bush and bog harrow	1.0	1.0	4.4	100	4.4	4.4
Lime (custom)	Truck/spreader	1.6	1.2	1.0	42	.7	.5
Drag	12-foot drag	.9	.9	1.0	12	.1	.1
Make beds	6-foot bedder	.9	.6	1.0	77	.7	.5
Level beds	1-bed press	.8	.7	1.0	32	.3	.2
Fumigate	1-bed fumigator	1.0	1.0	1.0	18	.2	.2
Fertilize	1-bed spreader	1.7	1.4	5.9	79	7.9	6.5
Bed, fertilize, and seed	6-foot bedder, 2-row seeder/attachment.	3.5	2.8	1.0	12	.4	.3
Seed[1]	1-bed seeder	1.8	1.3	1.0	74	1.3	1.0
Seed by hand		6.0	---	1.0	14	.8	---
Cultivate	1-bed cultivator	1.0	.9	15.2	64	9.7	8.8
Cultivate and fertilize	1-bed cult./attach.	2.4	1.0	7.0	11	1.8	.8
Fertilize by hand		12.8	---	12.2	10	15.6	---
Hoe by hand		12.2	---	10.2	51	63.5	---
Rake by hand		17.4	---	9.1	31	49.1	---
Thin and reset plants by hand		29.5	---	1.2	33	11.7	---
Weed by hand		6.8	---	34.0	7	16.2	---
Dust	3-bed duster	.4	.4	3.6	38	.5	.5
Dust (custom)	Plane	.1	.1	12.6	32	.4	.4
Spray	3-bed sprayer	1.0	.6	12.2	84	10.2	6.1
Spray (custom)	Plane	.1	.1	13.3	28	.4	.4
Cross ditch by hand		4.0	---	5.1	53	10.8	---
Irrigate and drain	Pumps	7.0	([2])	([2])	89	6.2	([2])
Total		---	---	---	---	215.2	32.4
Harvest:							
Pick, wash, grade, and pack by hand		12.3	---	19.2	100	236.2	---
Load by hand and haul	Truck	1.2	.8	19.2	100	23.0	15.4
Total		---	---	---	---	259.2	15.4
Total preharvest and harvest		---	---	---	---	[3] 474.4	[3] 47.8

[1] On 16 percent of the acreage, chlorodane was drilled into the ground at time of seeding.
[2] Data not available, maintenance on a continuous basis.
[3] Average yield per acre--554 bushels. Average labor and power hours per bushel--0.86 hour and 0.09 hour, respectively.

Table C.--Eggplant: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	1	0.8	0.8	0.8	0.8
Disk	4	1.0	1.0	4.0	4.0
Make beds	1	.9	.6	.9	.6
Fertilize	6	1.7	1.4	10.2	8.4
Seed	1	1.8	1.3	1.8	1.3
Cultivate	15	1.0	.9	15.0	13.5
Spray	12	1.0	.6	12.0	7.2
Cross ditch	5	7.3	---	36.5	---
Irrigate and drain	([1])	([1])	---	7.0	---
Pick, wash, grade, and pack	19	12.3	---	233.7	---
Load by hand and haul	19	1.2	.8	22.8	15.2
Total	---	---	---	[2] 344.7	51.0

[1] Continuous operation, data not available.

[2] The 85.6-hour discrepancy between average and typical labor inputs is largely explained by the exclusion of the hoeing operation in the typical situation. Usually a grower will either machine cultivate or hand hoe. Only 15 percent of the acreage was both cultivated and hoed.

Table D.--Eggplant: Distribution of workers performing specified operations, by type of worker, 24 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of worker						
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Foreign	Puerto Rican	Custom operator
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Chop weeds	13	53	20	7	0	7	0
Clean ditches (custom)	0	0	0	0	0	0	100
Plow	0	100	0	0	0	0	0
Disk	28	38	28	3	0	3	0
Lime (custom)	0	0	0	0	0	0	100
Drag	0	0	67	33	0	0	0
Make beds	17	38	38	4	0	3	0
Level beds	10	60	20	10	0	0	0
Fumigate	75	12	13	0	0	0	0
Fertilize	23	26	45	0	0	6	0
Bed, fertilize, and seed	31	25	44	0	0	0	0
Seed by machine	31	25	44	0	0	0	0
Seed by hand	0	50	50	0	0	0	0
Cultivate	20	15	60	0	0	5	0
Cultivate and fertilize	0	0	0	100	0	0	0
Fertilize by hand	2	24	6	24	0	44	0
Hoe by hand	0	9	8	51	0	32	0
Rake by hand	0	21	10	33	0	36	0
Thin and reset plants by hand	0	0	0	100	0	0	0
Weed by hand	0	0	0	68	32	0	0
Dust	12	50	0	25	0	13	0
Dust by hand	100	0	0	0	0	0	0
Dust (custom)	0	0	0	0	0	0	100
Spray	19	48	14	10	0	9	0
Spray (custom)	0	0	0	0	0	0	100
Cross ditch by hand	0	0	19	7	26	48	0
Irrigate and drain	80	15	5	0	0	0	0
Pick, wash, grade, and pack	0	7	13	50	0	30	0
Load by hand and haul	10	78	12	0	0	0	0

Sweet Peppers

Data presented in figure 6 and tables A, B, C, and D are based on information obtained covering production of sweet peppers grown for the fresh market on 1,030 acres, on 33 farms, in 1958-59. The average yield per acre was 274 bushels (30 pounds).

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. Drawbar horsepower ratings were not obtained, but size of equipment indicates that these tractors were 2- and 3-plow tractors with drawbar horsepower ratings of 15 to 30.

With the exception of the last week in June, some work was done on peppers during every week of the year. On nearly three-fourths of the acreage, peppers were seeded in 2-row beds. The remaining acreage was level seeded.

On the average, peppers were harvested once every 10 days. Pickers were generally paid hourly rates, while workers engaged in field washing, grading, and packing were paid piece rates. Piece rates for field grading and packing a bushel of peppers ranged from $0.17 to $0.36 and averaged $0.24.

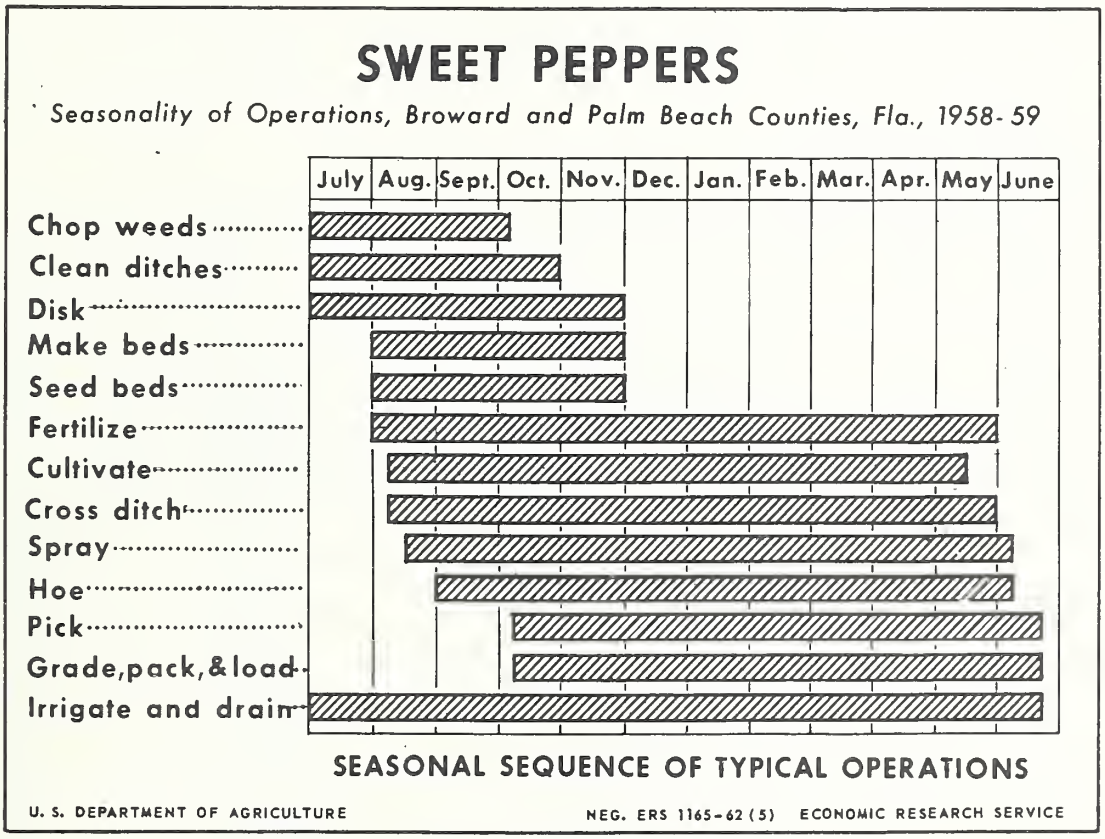

Figure 6

Table A.--Sweet peppers: Materials used and contract work hired, averages for 1,030 acres on 33 farms, Broward and Palm Beach Counties, Fla., 1958-59

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	2.6	7.32	19.03	100	19.03
Seed, sunflower	Pound	1.8	.22	.40	18	.07
Fertilizer, 4-7-5	Ton	2.5	53.54	133.85	100	133.85
Fumigant, vapan	Pound	22.0	2.85	62.70	18	11.29
Poison bait, chlorodane	Pound	125.0	.14	17.50	2	.35
Weedkiller, butane gas	Gallon	3.5	.22	.77	20	.15
Dust, Cu-Su-DDT	Pound	296	.113	33.45	33	11.04
Spray, mixture[1]	Applic.	20.0	4.17	83.40	92	76.73
Bushel baskets	Each	274	.37	101.38	100	101.38
Basket liners	Each	274	.02	5.48	93	5.10
Basket tops	Each	274	.05	13.70	100	13.70
Irrigation/district fee	Acre	1	3.50	3.50	100	3.50
Total		---	---	---	---	376.19
Contract work hired:						
Lime, spread by truck	Ton	1.1	11.34	12.47	38	4.74
Clean ditches with dragline	Hour	1.9	9.80	18.62	59	10.99
Apply spray by plane, application only	Acre	7.2	1.62	11.66	28	3.26
Apply dust by plane, application only	Pound	111.8	.028	3.13	25	.78
Total		---	---	---	---	19.77
Total materials and contract work		---	---	---	---	[2] 395.96

[1] Includes fungicides, insecticides, and liquid fertilizers.
[2] Average yield per acre--274 bushels. Average cost of material and contract work per bushel--$1.45.

Table B.--Sweet peppers: Labor, power, and machinery used in producing and harvesting, averages for 1,030 acres on 33 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Chop weeds	6-foot chopper	1.7	1.7	1.5	60	1.5	1.5
Clean ditches (custom)	1/2-yard dragline and truck	3.8	3.8	1.0	59	2.2	2.2
Clean ditches	1/2-yard dragline	1.9	1.9	1.0	30	.6	.6
Clean ditches by hand		2.5	---	26.2	10	6.6	6.6
Lime (custom)	Truck spreader	.7	.6	1.0	38	.3	.2
Disk	6-foot bush and bog harrow	.8	.8	5.3	100	4.2	4.2
Level	10-foot leveler	1.2	.7	3.0	36	1.3	.8
Moledrain	2-hole mole	.6	.6	1.0	22	.1	.1
Make beds	6-foot bed shaper	1.8	1.7	1.0	53	1.0	.9
Make beds and fumigate	6-foot shaper/attach.	1.9	1.8	1.0	18	.3	.3
Seed beds	1-bed 2-row seeder	1.6	1.1	1.0	59	.9	.6
Seed beds and fertilize	1-bed seeder/fertilizer attachment.	1.9	1.1	1.0	12	.2	.1
Seed and fertilize level field	4-row seeder/fertilizer attachment.	1.2	.8	1.0	29	.3	.2
Seed windbreak	1-row seeder	.4	.4	1.0	18	.1	.1
Fertilize	1-bed 2-row spreader	2.0	.8	7.6	88	13.4	5.4
Fertilize by hand		12.3	---	9.2	10	11.3	---
Burn weeds	4-row burner	.8	.8	1.0	20	.2	.2
Cultivate	1-bed cultivator	1.0	.8	14.0	59	8.3	6.6
Cultivate	4-row cultivator	.5	.5	5.0	29	.7	.7
Cultivate by mule	1-row	1.2	1.2	13.8	10	1.7	1.7
Cultivate and fertilize	4-row cult./attach.	.7	.6	2.2	17	.3	.2
Hoe and fertilize by hand		5.0	---	1.0	2	.1	---
Hoe[1]		15.6	---	12.8	66	131.8	---
Hoe, thin, and reset		34.0	---	1.0	60	20.4	---
Weed		6.9	---	5.4	13	4.8	---
Spray	3-bed boom sprayer	.5	.4	18.6	84	7.8	6.2
Spray (custom)	Plane	.1	.1	2.9	25	.1	.1
Dust	8-row duster	.3	.2	11.2	23	.8	.5
Dust (custom)	Plane	.1	.1	2.9	25	.1	.1
Apply poison bait by hand		7.2	---	1.0	2	.1	---
Irrigate and drain	Pumps	([2])	([2])	([2])	100	8.0	([2])
Cross ditch by hand		4.2	---	8.7	59	21.6	---
Total		---	---	---	---	251.1	40.1
Harvest:							
Pick by hand		10.3	---	9.8	100	100.9	---
Grade, pack, and load by hand		8.0	---	9.9	78	61.8	---
Haul	Truck	1.3	1.3	10.0	[3] 78	10.1	10.1
Total		---	---	---	---	172.8	10.1
Total preharvest and harvest		---	---	---	---	[4] 423.9	[4] 50.2

[1] Includes some thinning and resetting of plants.
[2] Constant maintenance, data for single time not available.
[3] Buyers' crews hauled peppers from the field on 22 percent of the total acreage.
[4] Average yield per acre--274 bushels. Average labor and power used per bushel--1.55 hours and 0.18 hour, respectively.

Table C.--Sweet peppers: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	2	1.7	1.7	3.4	3.4
Clean ditches	1	3.8	3.8	3.8	3.8
Disk	5	.8	.8	4.0	4.0
Make beds	1	1.8	1.7	1.8	1.7
Seed beds	1	1.6	1.1	1.6	1.1
Fertilize	8	2.0	.8	16.0	6.4
Cultivate	14	1.0	.8	14.0	11.2
Hoe[1]	13	15.6	---	202.8	---
Cross ditch	9	4.2	---	37.8	---
Spray	19	.5	.4	9.5	7.6
Irrigate and drain	([2])	([2])	([2])	8.0	([2])
Pick	10	10.3	---	103.0	---
Grade, pack, and load	10	8.0	---	80.0	---
Haul	10	1.3	1.3	13.0	13.0
Total	---	---	---	498.7	52.2

[1] Includes some thinning and resetting of plants. Hoe, thin, and reset was excluded as a typical operation because on acreages where hoeing was reported the hoe, thin, and reset operation was not extensively performed.

[2] Data not available, maintenance on a continuous basis.

Table D.--Sweet peppers: Distribution of workers performing specified operations, by type of worker, 33 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of worker						
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Foreign	Puerto Rican	Custom operator
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Chop weeds	16	38	38	8	0	0	0
Clean ditches (custom)	0	0	0	0	0	0	100
Clean ditches (hand)	0	4	16	51	29	0	0
Lime (custom)	0	0	0	0	0	0	100
Disk	25	40	28	5	0	2	0
Level	7	71	11	4	0	7	0
Moledrain	43	43	14	0	0	0	0
Make beds	21	49	21	2	0	7	0
Bed and fumigate	0	0	100	0	0	0	0
Seed beds	34	10	56	0	0	0	0
Seed beds and fertilize	22	67	11	0	0	0	0
Seed and fertilize level fields	18	26	24	1	0	31	0
Seed windbreak	29	14	57	0	0	0	0
Fertilize	19	24	24	1	0	32	0
Fertilize by hand	5	32	6	11	39	7	0
Burn weeds	67	33	0	0	0	0	0
Cultivate beds	31	14	46	3	0	6	0
Cultivate level field	25	25	50	0	0	0	0
Cultivate by mule	0	100	0	0	0	0	0
Cultivate and fertilize	28	43	29	0	0	0	0
Hoe and fertilize	0	0	100	0	0	0	0
Cross ditch	0	11	21	46	22	0	0
Hoe	1	20	39	32	0	8	0
Hoe, thin, and reset	0	0	0	100	0	0	0
Weed	6	38	0	31	21	4	0
Spray	28	27	36	3	0	6	0
Spray (custom)	0	0	0	0	0	0	100
Dust	10	30	30	20	0	10	0
Dust (custom)	0	0	0	0	0	0	100
Apply poison bait	0	0	0	0	0	100	0
Irrigate and drain	10	40	50	0	0	0	0
Pick	2	9	21	55	3	10	0
Wash, grade, pack, and load	1	12	32	36	4	15	0
Haul	0	100	0	0	0	0	0

Squash

Data presented in figure 7 and tables A, B, C, and D are based on information obtained covering production of yellow squash for the fresh market on 104 acres on 6 farms in 1958-59. The average yield per acre was 111 bushels.

Tractors were the chief source of power on these farms. Unless otherwise indicated, they were used for operations listed. The size of tractor was not obtained, but, considering size of equipment used, it appears that the average tractor was about a 2-plow tractor with a drawbar horsepower rating of 15 to 20.

Growers reported that excessive spring rains caused an increase in the number of sprayings to combat mosaic but that spraying was largely unsuccessful and the disease sharply reduced yields.

Piece rates for picking and field packing averaged $0.50 per bushel.

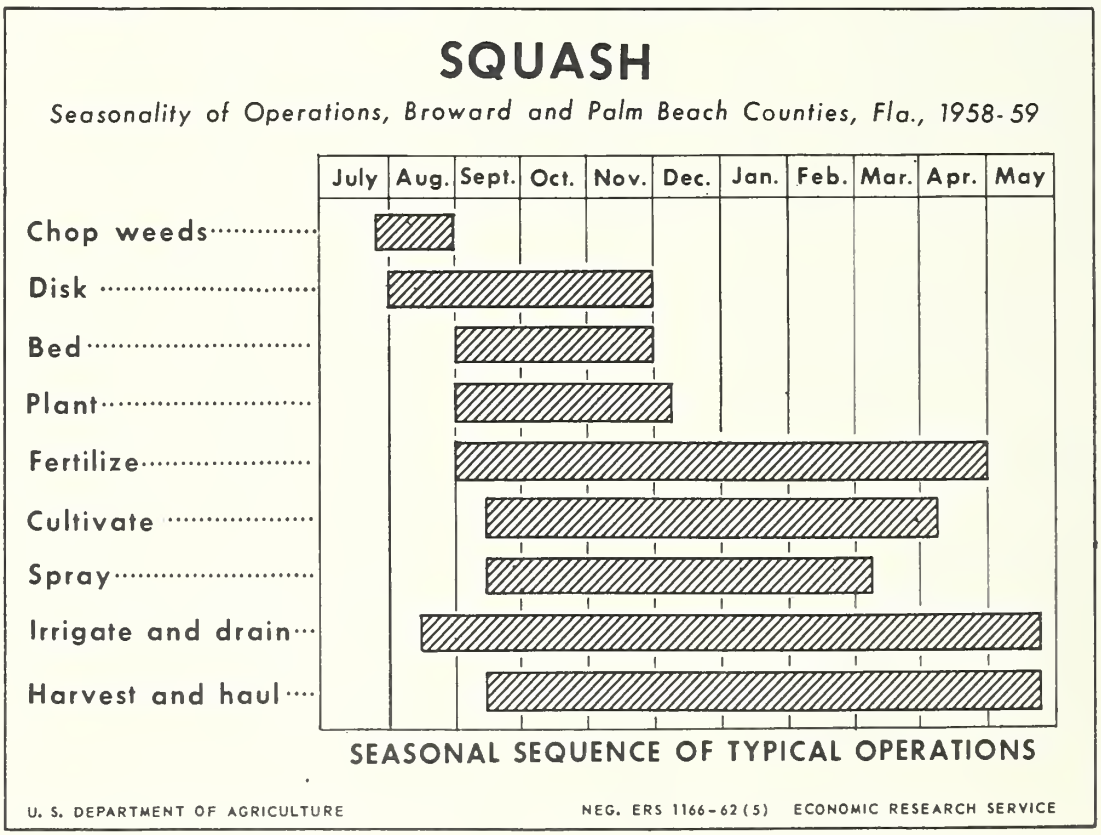

Figure 7

Table A.--Squash: Materials used and contract work hired, averages for 104 acres on 6 farms, Broward and Palm Beach Counties, Fla., 1958-59

Item	Unit	Units per acre covered	Price per unit	Cost per acre covered	Percentage of total acreage covered	Cost per acre, total acreage
		Number	Dollars	Dollars	Percent	Dollars
Materials used:						
Seed	Pound	2	1.13	2.26	100	2.26
Fertilizer, 4-7-5	Cwt.	18.8	2.95	55.46	94	52.13
Fertilizer, 10-10-10	Cwt.	20.0	4.00	80.00	10	8.00
Spray, mixtures	100 gallons	3.22	5.48	17.65	90	15.88
Dust, parathion	Pound	225	.20	45.00	3	1.35
Fumigant, diathane	Gallon	5	5.00	25.00	19	4.75
Picking crates, bushel	Each	7	.35	2.45	6	.15
Packing crates, bushel	Each	111	.43	47.73	100	47.73
Irrigation/district fee	Acre	1	3.00	3.00	100	3.00
Total	---	---	---	---	---	135.25
Contract work hired:						
Clean ditches, dragline	Acre	1	13.25	13.25	32	4.24
Lime by truck	Ton	.8	8.66	6.93	32	2.22
Spray by plane	Acre	18	2.00	36.00	12	4.32
Total	---	---	---	---	---	10.78
Total materials and contract work	---	---	---	---	---	[1] 146.03

[1] Average yield per acre--111 bushels. Average cost of materials and contract work per bushel--$1.32.

Table B.--Squash: Labor, power, and machinery used in producing and harvesting, averages for 104 acres on 6 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type and size of equipment	Time per acre, once over		Times over, acreage covered	Percentage of total acreage covered	Time per acre, total acreage	
		Man	Power			Man	Power
		Hours	Hours	Number	Percent	Hours	Hours
Preharvest:							
Clean ditches (custom)	1/2-yard dragline	1.5	1.5	1.0	32	0.5	0.5
Chop weeds	6-foot chopper	1.0	1.0	1.0	82	.8	.8
Plow	2-bot. disk plow	1.2	1.2	1.0	6	.1	.1
Lime (custom)	Truck spreaders	2.1	2.1	1.0	32	.7	.7
Disk	8-foot tandem	1.1	1.1	3.5	100	3.8	3.8
Drag	12-foot drag	.6	.6	1.0	24	.1	.1
Bed	1-bed bedshaper	2.3	2.1	1.0	94	2.2	2.0
Fumigate	2-row drill	1.8	.9	1.0	19	.3	.2
Plant	1-row planter	2.3	1.2	1.0	100	2.3	1.2
Fertilize	1-bed spreader	1.4	.9	3.8	94	5.0	3.2
Cross ditch		3.6	---	1.0	19	.7	---
Irrigate and drain	Pumps	10.0	([1])	([1])	100	10.0	([1])
Hoe and weed		29.0	---	1.0	28	8.1	---
Cultivate	2-row cultivator	.8	.8	5.7	97	4.4	4.4
Cultivate and fertilize	2-row cult./attach.	2.7	.9	3.0	10	.8	.3
Dust	6-row duster	.7	.7	5.0	3	.1	.1
Spray	8-row boom sprayer	.3	.3	9.3	90	2.5	2.5
Spray (custom)	Plane	([2])	([2])	18.4	12	.2	.2
Total		---	---	---	---	42.6	20.1
Harvest:							
Pick and pack by hand		8.8	---	7.0	100	61.6	---
Load by hand and haul	Truck	2.1	2.1	7.0	100	14.7	14.7
Total		---	---	---	---	76.3	14.7
Total preharvest and harvest		---	---	---	---	[3] 118.9	[3] 34.8

[1] Data not available, maintenance on a continuous basis.
[2] Less than 0.05 hour.
[3] Average yield per acre--111 bushels. Average labor and power hours per bushel--1.1 hours and 0.3 hour, respectively.

Table C.--Squash: Usual labor and power inputs, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Times over	Time per acre, once over		Time per acre, total	
		Man	Power	Man	Power
	Number	Hours	Hours	Hours	Hours
Chop weeds	1	1.5	1.5	1.5	1.5
Disk	4	1.1	1.1	4.4	4.4
Bed	1	2.3	2.1	2.3	2.1
Plant	1	2.3	1.2	2.3	1.2
Fertilize	4	1.4	.9	5.6	3.6
Irrigate and drain	(1)	10.0	(1)	10.0	(1)
Cultivate	6	.8	.8	4.8	4.8
Spray	9	.3	.3	2.7	2.7
Pick and pack	7	8.8	---	61.6	---
Load by hand and haul	7	2.1	2.1	14.7	14.7
Total	---	---	---	109.9	35.0

[1] Data not available, maintenance on a continuous basis.

Table D.--Squash: Distribution of workers performing specified operations, by type of worker, 6 farms, Broward and Palm Beach Counties, Fla., 1958-59

Operation	Type of worker					
	Operator and unpaid family	Year-round hired	Local seasonal	Domestic migratory	Puerto Rican	Custom operators
	Percent	Percent	Percent	Percent	Percent	Percent
Clean ditches	0	0	0	0	0	100
Chop weeds	0	0	75	25	0	0
Plow	100	0	0	0	0	0
Disk	29	0	57	14	0	0
Lime	0	0	0	0	0	100
Drag	0	0	0	100	0	0
Bed	0	0	86	14	0	0
Fumigate	0	0	100	0	0	0
Plant	15	8	62	15	0	0
Fertilize	14	0	86	0	0	0
Cross ditch	0	0	0	100	0	0
Irrigate and drain	10	86	4	0	0	0
Hoe and weed	2	0	15	83	0	0
Cultivate	16	0	67	17	0	0
Cultivate and fertilize	0	0	100	0	0	0
Dust	100	0	0	0	0	0
Spray	40	0	20	40	0	0
Spray by plane	0	0	0	0	0	100
Pick and pack	2	0	9	80	9	0
Load and haul	0	0	100	0	0	0