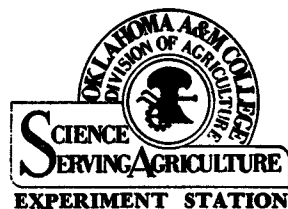


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A Study Of  
Vegetable Production  
And Marketing  
in  
Eastern Oklahoma

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Department of Agricultural Economics



# *The Purpose Of the Survey*

This report presents a general view of the vegetable industry in Oklahoma as it exists at the present time. Since sufficient data were not available, it was necessary to conduct a preliminary survey to establish major concentrated areas of vegetable production in Eastern Oklahoma. The existing markets were located and classified relative to their use by producers. Because of the perishability of fresh vegetables and fluctuating prices offered by many markets in the area, it was a common practice for producers to patronize several markets.

It is neither the purpose nor the intent of this publication to give a detailed exposition of the problems or conditions existing in any given market or marketing area. Rather it is intended to point out some of the general problem situations confronting vegetable growers in the area surveyed.

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# A Survey Of Vegetable Production and Marketing In Eastern Oklahoma

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The sale of vegetables provides only a minor share of the value of all farm products sold in Oklahoma: \$2,916,008 compared with \$471,002,-370, respectively, as reported by the 1950 U. S. Census of Agriculture. Yet the vegetable industry is of major importance in some areas and to individual farmers in those areas.

Owing to soil type, climatic conditions, and available water supply for irrigation, the Arkansas River Valley has become the major vegetable producing area in the state (Figure 1). In 1950, this area produced a value of \$1,467,569 from vegetables harvested for sale or 50.3 percent of the state total.

Inquiries in recent years regarding vegetable production have indicated a growing interest in the industry. This interest, perhaps stimulated in part by irrigation and improved production practices, has created a need for new information.

## How the Survey was Made

The 1950 agricultural census was used to obtain yields, acreages, and other background information on vegetable growing in eastern Oklahoma. The census data revealed that six counties made up the major vegetable growing area (Table I). They were: Tulsa, Wagoner, Muskogee, Haskell, Sequoyah, and LeFlore. These six counties were selected as the area for study. The specific location of study in these counties was confined to an area 4 miles wide on either side of the

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\* Appreciation is extended to Leo V. Blakley and Nellis A. Briscoe, Department of Agricultural Economics, Oklahoma A. & M. College, for their suggestions and helpful criticisms in preparing this bulletin in its final form.

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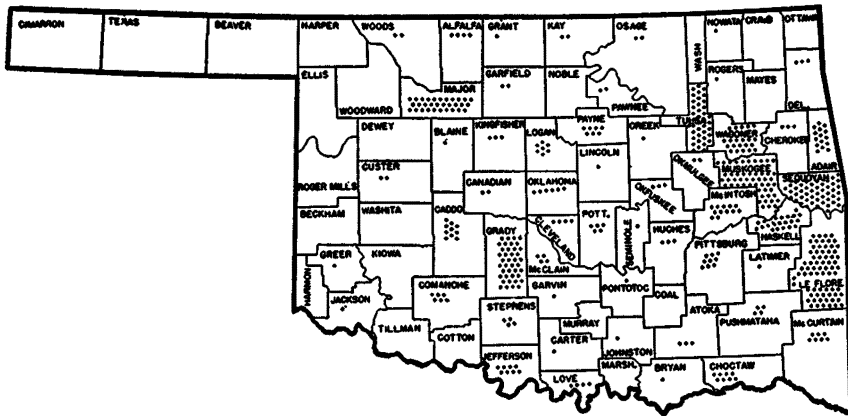


Fig. 1.—Total acreage of commercial vegetables in Oklahoma, 1950. Each dot represents 100 acres. As can be seen here, the Arkansas River Valley has become the major vegetable producing area in the state.

TABLE I.—Total Acres and Value of All Vegetables Sold, 1949, for the Counties Surveyed.

	Acres	Value of Vegetables Sold	No. of farms	Avg. Acres Per Farm	Avg. Value Sold per Farm
Haskell	2,057.4	\$ 208,134	61	40.3	\$3,412.03
LeFlore	6,905.5	341,373	229	30.2	1,490.71
Muskogee	4,951.5	244,202	138	35.9	1,769.60
Sequoyah	4,688.8	271,406	173	27.1	1,568.82
Tulsa	3,857.4	273,041	190	20.3	1,437.06
Wagoner	2,116.4	129,413	87	24.3	1,487.50
<b>TOTAL</b>	<b>24,577.0</b>	<b>\$1,467,569</b>	<b>878</b>	<b>---</b>	<b>-----</b>

SOURCE: U. S. Census of Agriculture, 1950.

TABLE II.—Harvested Acres of Specified Vegetables and Number of Commercial Vegetable Farms in 1949.

County	Snap Beans	Spinach	Sweet Corn	Water- melons	Total	No. of Com- mercial Vege- table Farms
LeFlore	1,999.4	2,896.1	788.7	188.8	5,873.0	229
Muskogee	380.4	1,646.4	1,720.4	353.9	4,101.1	138
Haskell	452.6	1,204.6	35.0	27.3	1,719.5	61
Sequoyah	1,362.9	1,965.0	197.3	93.5	3,618.7	173
Tulsa	169.8	260.0	1,965.6	536.0	2,931.4	190
Wagoner	165.5	1,086.6	321.5	74.1	1,647.7	87
<b>TOTAL</b>	<b>4,530.6</b>	<b>9,058.7</b>	<b>5,028.5</b>	<b>1,273.6</b>	<b>19,891.4</b>	<b>878</b>

SOURCE: U. S. Census of Agriculture, 1950.

Arkansas River, extending from Tulsa to the State line opposite Ft. Smith, Ark. (Figure 2).

Snap beans, spinach, sweet corn, and watermelons were selected for study on the basis of their importance as indicated by the census (Table II). The census also showed a wide range in the pattern of vegetable farming from one farm to another and from one county to another. Consequently, it was necessary to conduct a preliminary survey to delineate the major concentrated areas of vegetable production.

A random sample of land sections in this area was selected in such a manner that geographic coverage was assured. The initial sample included 109 sections. All vegetable farms located within these 109 sections were surveyed.

Due to the low probability of finding a vegetable farmer in a given section, a supplementary sample was devised which was unknown in size at the beginning of the study, but which could not exceed the size of the initial sample. The supplementary sample was

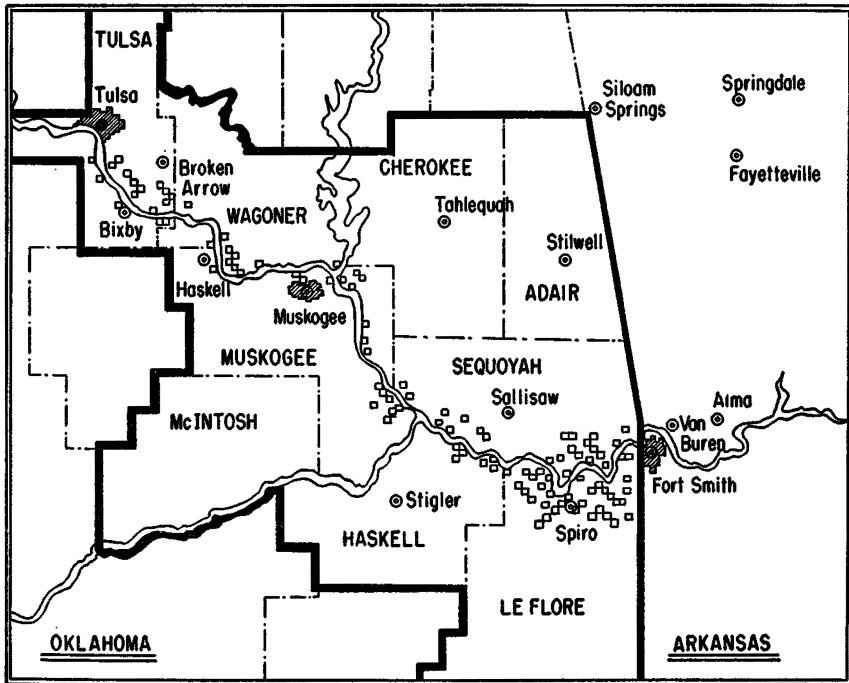


Fig. 2.—The survey area for this study was confined to an area 4 miles on either side of the Arkansas River in the above six counties of Oklahoma. Each square on this map indicates land sections, and all vegetable farms located within these sections were surveyed.

necessary to assure reasonable accuracy in the survey, and to eliminate time consuming "call backs" to complete the study.

## Results of the Survey

### Farm Characteristics

Little is known from a research standpoint on the marketing phase of vegetable production in this major area. Therefore, a survey was made to determine the location, distance, and characteristics of the markets utilized by vegetable farmers, as a step toward finding means of improving the existing marketing methods and services and reducing their costs. The fulfillment of this objective required direct contacts with the vegetable producers of the area. This bulletin reports the market and farm characteristics as determined by the survey.

Farm size in the vegetable producing area varied considerably, from two acres to more than 4,500 acres. The average producer in the area had 170.1 acres in commercial vegetables in 1954; however, there was a wide range in the vegetable acreage per farm within this area. This wide range applied also to total acres in farms and total acres per farm as well as to total vegetable acreage.

All farms had some degree of mechanization. As they increased in size, mechanization and crop diversification became more prominent. Smaller farms were less mechanized and generally specialized in one or two vegetable crops. Crops from these farms were sold at the farm directly to the consumer or to local retail merchants. The owners and part owners of the larger farm units, in general, act in the capacity of farm managers, devoting full time to the study of farm operations, supervising employees, and marketing their products. The farm operators surveyed in the sample as to land ownership were: owners 27.27 percent, part owners 39.39 percent, and tenants or renters 33.33 percent.

**TABLE III.—Total Acreage, Cropland, and Vegetable Acreage in Sample Farms by Ownership Pattern.**

(Acres)

	Entire Sample	Owners	Part Owners	Tenants
Number of Acres in Farms	45,175	18,748	15,961	10,466
Number of Crop Acres in Sample	29,223	12,570	9,194	7,459
Number of Commercial Vegetable Acres in Sample	11,231	3,953	3,693	3,585

There was no apparent relationship between type of farm ownership and vegetable acreage (Table III).

### **Importance and Kinds of Vegetables Grown**

Cannery markets for perishable vegetable crops were plentiful during the early post World War II years, due partly to the government contracts held by the canneries. After this post-war demand subsided, the market for processed vegetables returned to a highly competitive basis and vegetable acreage in this area declined. In addition, support prices on wheat caused some diversion of acreage from vegetables to wheat. Both these factors have been important contributors to the 56 percent decline in the acreage of vegetable crops in this area from 1949 to 1954.\*

For those farms remaining in vegetable production in 1955, the vegetable enterprise was quite important. On the farms surveyed in 1955, 38 percent of the total crop acreage was in vegetables. On 42 percent of the farms, vegetables contributed more than 50 percent of the gross farm income.

On the 66 farms surveyed, spinach was found more frequently than any other vegetable. About 68 percent of the farms included spinach in their cropping system; 50 percent included snap beans, and 21 percent grew sweet corn (Figure 3).

Total acreage of spinach on the farms surveyed was 3,618 acres, almost 60 percent greater than the acreage of any other particular vegetable crop. Next in importance were field peas, with 2,135 acres, greens\*\* with 1,955 acres, snap beans with 968 acres, and sweet corn with 768 acres.

Total acreage is not, however, a measure of the importance of the specific crops on the farms producing those crops. For this measure, the average number of acres of each crop was computed for the growers of each crop. On this basis, field peas represented the largest crop enterprise, with about 107 acres per farm on which peas were grown. (However, not all of the acreage planted to peas was harvested for the vegetable market.) Greens were the next largest enterprise, with about 98 acres per farm. In order of size per farm, the crops under study were spinach with 80 acres, sweet corn with 59 acres, snap beans with 30 acres, and watermelons with 18 acres.

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\* 1954 Census of Agriculture preliminary U.S.D.C., Bureau of Census (August, 1955).

\*\*Turnips, mustard and kale.



Double cropping is a common practice in the area, due partly to the long growing season as compared with the season of maturity of most vegetable crops and to the fact that adequate soil moisture permits summer and fall planting.

The type of vegetable produced is also strongly influenced by the available labor force and its attitude toward a particular crop. (See labor, page 16.) In the Ft. Smith area the main vegetable crops are spinach, turnips, mustard greens, and kale. Greens can be and are mechanically harvested on most of the larger farms. Crops such as snap beans, tomatoes and okra, where hand harvest is necessary, are not of major importance. This harvesting situation can also be applied to the Choska bottom (south of Coweta and east of Haskell) and the Bixby area. Exceptions to this are found on small farms where the family labor supply is sufficient to handle the harvest. In the areas more distant from the river, mechanization is not as adaptable to the smaller fields. Consequently, snap beans and other hand harvested vegetables become the major crops and greens become less important.

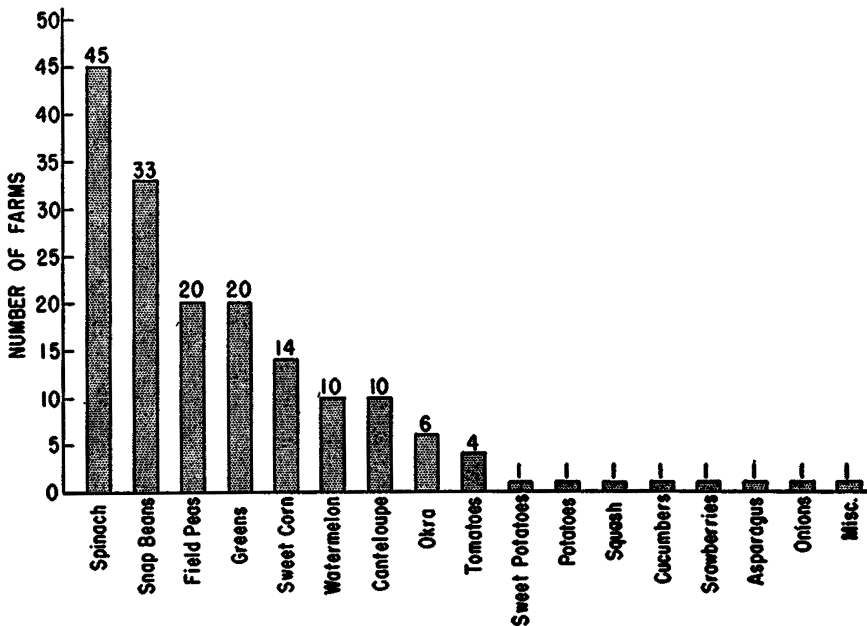


Fig. 3.—Number of sample farms producing different commercial vegetables.

## **Alternatives to Vegetable Production**

Other crops compete with vegetables for the fertile bottom land in the area. Small grains were reported on 54 percent of the farms surveyed. Thirty percent of the farms reported alfalfa and 24 percent reported cotton.

Livestock enterprises did not effectively compete with vegetables for the land operated by the vegetable farmer. The livestock enterprises which were most frequently found on vegetable producing farms included dairy, beef cattle, swine, and poultry. The products from these enterprises were primarily used for home consumption, with only the surplus going to the local livestock market or being sold to some country buyer at the farm.

## **Markets**

Types of markets existing in the area are varied. Both the processing and fresh markets are important and include outlets such as canneries, producer-shippers, chain store and independent retail merchants, road-side stands, and producers' associations.

In the area surveyed, 25 of the most frequently used market outlets were selected and the number of producers marketing vegetables to these outlets was computed. Seventeen of these outlets were processors of vegetables. Eight were outlets for fresh market vegetables. It is common practice for producers to sell in two or more markets. Therefore, a tabulation was made to determine an aggregate number of producers selling in each market. This tabulation showed that, on the average, 4 out of 5 producers will be selling to two or more processing outlets while 2 out of 5 producers will be selling to the fresh market outlet.

The processing market is the most important market for the vegetable growers in the area. About 73 percent of the producers marketed most of their vegetables to processors as compared with 27 percent in the fresh market (Figure 4). A larger percentage of part owners used the processing market than the average, while a smaller percentage of the tenants used this market.

In a similar comparison, 53 percent of the producers surveyed sold less than one-half of their vegetables on the fresh vegetable market, 25 percent sold over one-half on the fresh market, and 19 percent sold all of their produce fresh. It was found that more of the small producers were inclined to sell their crop fresh than were the larger growers. It

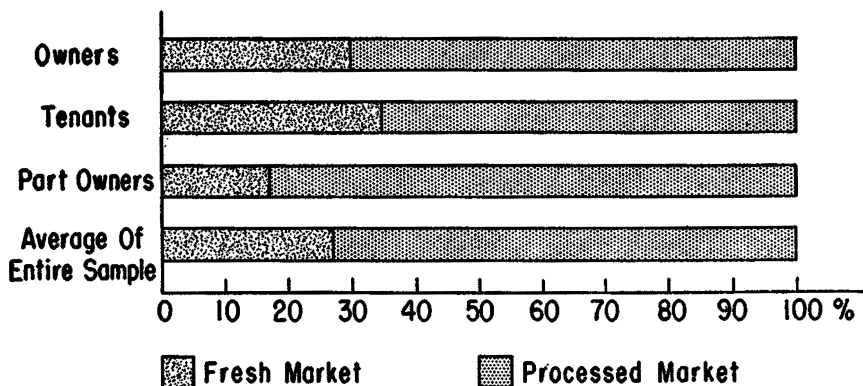


Fig. 4.—Percentage of vegetable growers in the sample marketing crops to fresh markets and to processed markets, by tenure. About 73 percent of all producers marketed their vegetables to processors.

seems that there are two major reasons for this: (1) outlets for fresh vegetables are limited, and (2) there are no large urban centers in the area. An additional factor influencing the large producers' selection of a market was the type of crop grown. Most of the large acreages consisted of sweet corn, spinach, and greens.

#### Canneries

Canneries are the most important outlet on the volume basis. The cannery market was utilized by about 79 percent of the producers in the area for the sale of all or a portion of their vegetables.

In June of 1955, there were approximately eleven operating canneries in the state, nine of which were located in the area studied. They are believed to be adequate in number and in location. They are well equipped and have sufficient volume capacity. Very little attention was given to the quality of produce purchased as to grade. The quality of the produce had no effect on the price paid to farmers. The only exception to this was found in instances where products were turned down.

#### Chain Stores and Retail Merchants

Many producers found their best market at the chain stores or the independent retail merchants. Long-time growers voiced the opinion that they found these buyers consistent and there was a repeat market year after year for quality produce. These markets were favored also because the price received was in general higher than other existing outlets. Working relationships between producer and buyer were better

understood by both parties as to supply, demand, price, variety, and quality of vegetables produced and sold. About 20 percent of the producers used chain stores or independent retail merchants as market outlets for vegetables.

#### **Producer-Shipper as a Buyer**

The producer-shipper is performing a definite marketing function in the area. In many cases he is the only outlet for the small truck farmer. His physical facilities are very limited, and he is usually contacted at his home. The produce he handles is consistent in quality and grade with his own and is most frequently mixed for sale. The general rule is that he buys the produce outright, and very seldom handles it on a commission basis. The producer-shipper is used by about 14 percent of the producers as a market outlet for at least a portion of their crop.

#### **Road-Side Stands**

Road-side stands handle a considerable volume of produce during the complete season of operation. They cater mostly to tourists and to consumers in nearby urban areas. In many cases the operator grows the major portion of produce sold. However, he offers an outlet to other local growers and is important in that respect. Though the road-side stand operator handles no large volume at any one time, he competes with other existing markets in prices paid to growers. Road-side stands are used by about 9 percent of the producers surveyed.

#### **Producers' Association**

Only one producers' association is involved in the marketing of vegetables in this area. This market is used by about 6 percent of the producers. The basic supply of produce for this association is furnished by a very small percentage of the growers. Of these, a few growers act as independent buyers of the vegetables produced by some of the smaller producers in the area.

A number of small producers in the area served by the producers' association have either quit producing altogether or have found markets elsewhere. Many of the producers interviewed stated the reason for this change was that the relationships within the present market setup were undesirable or that this was not an adequate market for their produce. Consequently, it is not uncommon to find a producer in this area who either sells or ships under his own name when he has sufficient acreage to load a car or truck. He does this in the hope of a more prof-

itable return, even though he realizes the risk involved in commodities such as sweet corn..

### **Wholesale Market**

The wholesale market at Tulsa is definitely providing services desired by the producer as well as the consumer, retailer, wholesaler and the community. The wholesale market is used by all types of growers, from the one acre plot to the larger operator of from 200 to 400 acres. About 6 percent of the producers in the survey use this wholesale market.

A producer either rents a stall in a shed provided for the purpose, or pays a flat charge per load brought in. The charge per load depends upon the truck size, or the distance the produce travels to market. Farmers selling produce at this market generally find their own buyer and the price is set between the two. No market news or report is made available to the seller. The wholesale market is patronized by almost every type of buyer: wholesalers, chain store buyers, retail merchants, truckers, shippers, and scalpers.

Instances were reported by producers where buyers arrive at the market in the mornings, price the fresh produce without buying it, return to the market late in the evening or at night and buy at prices drastically reduced from those asked that morning. This can be explained by the fact that the producer generally harvests what he brings to the market the evening or night before, so as to reach the market early the next morning. Many types of fresh vegetables require refrigeration; if the grower still has his products on hand after 24 to 36 hours he must sell or lose the whole lot. In this manner, the price is marked down considerably below that of the larger city terminal markets in other areas.

The market handles almost every type of vegetable and fruit, but an over-supply of produce is very frequent during season. All types of grades are found but no prevailing standard exists. In many cases, a top grade and a low grade product may occupy adjacent stalls and be offered at the same price.

### **Truckers**

An appreciable amount of Oklahoma fresh produce is bought and distributed by truckers. The majority of these trucks are owned by individuals who buy either directly from the farmer, or from the wholesale market in Tulsa. They sell directly to consumers and to retail and wholesale merchants within the state and in the surrounding states. According to the opinions of the producers, the itinerant truck-

er is a major link in the vegetable marketing system in Oklahoma both from the standpoint of direct purchases from farmers as well as purchases through the wholesale markets. About 6 percent of the farmers sell their fresh produce directly to the truckers.

Neither auction markets for fresh vegetables nor assembly points for truckers or large volume buyers exist at the present time in Oklahoma. Thus, the only market from which the trucker or volume buyer can operate is from the wholesale market in Tulsa and to some extent from the existing producers' association. Many of the producers felt that improvements would have to be made at either market in order to be reasonably satisfactory to them.

## **Conditions Affecting Markets Used**

### **Financial and Contractual Arrangement**

The larger producer seems to be able to obtain sufficient amounts of capital through the existing credit institutions in the area, and at a fair and reasonable rate of interest. This situation does not appear to hold true for the smaller producer or the family-type vegetable farmer. At the time the survey was conducted, operating capital for this group of small or family type growers was sometimes obtained from a local merchant who supplied the necessary seed, fertilizer, and supplies for growing the crop. The method was not widespread.

The major source of credit for the group of smaller producers came from the buyer in that area, in particular from the canneries. In this case, a 50-50 verbal agreement was made between the buyer and the producer. The arrangement in essence was that the buyer furnished the seed, fertilizer, and other unspecified supplies, and paid 50 percent of the rent in those cases where the producer was a tenant or rented additional land for the purpose of planting vegetables. The producer furnished all labor and equipment necessary to produce and harvest the crop or crops, whichever it might be. The net return, after the harvest of the crop, was divided equally between the vegetable buyer and producer.

This type agreement has strong opposition by those who finance their own crops. Producers who do not operate under this verbal agreement oppose it on the basis that it maintains the marginal producer, who otherwise would drop out of production and lessen, to some extent, the over supply of particular vegetables at certain markets. Another objection was that the quality of the produce was low under most of such agreements and that the "real" vegetable grower took the loss. In

most cases, both the individual producer and the buyer who operates under these agreements reported them in general unsatisfactory.

The more important problems which arise here are: (1) some producers feel that their only obligation is to repay the borrowed capital on which the crop was financed; (2) some buyers insist that they be allowed to purchase all the vegetables produced by the grower who operates under the agreement; (3) other buyers, who are able to maintain an adequate supply of produce throughout the season, are unwilling to take vegetables from the producer once he has repaid his loan.

The existence of so many 50-50 agreements, which seem to be unsatisfactory to both buyers and producers, gives the impression that credit adequate for the small producer is insufficient to meet his immediate needs.

### **Labor Supply**

An acute labor problem exists throughout most of the area studied. Employment off the farm was not widely practiced by owners or part owners, except in cases where an owner with specialized equipment would contract with another grower to harvest his crop. However, off farm employment was common with the renter or tenant during slack seasons and winter months.

The transition from smaller farms to larger units over the past several years has moved a considerable number of the farm laborers out of the area into industrial centers. The producers, buyers, and canners in the western part of the area are competing with Tulsa for the labor supply in the outlying towns and communities. It is not possible at the present for most of the fresh vegetable producers or processors to profitably meet the hourly wages offered to labor by industry in the area. Part time employment furnishes a large percentage of the labor supply used by the employers of the vegetable industry. This includes the housewife who works seasonally to supplement the family income, and older persons who do not have full-time employment. In the minds of the farmers surveyed, some of the other labor is of low quality. This particular labor problem in the area has caused conversion to mechanically harvested crops and to a smaller acreage of those crops which require intensive cultivation, hand harvesting, trimming, culling and packing. This same problem of the producers, buyers, and processors competing with the industrial areas for labor was also of major importance in the immediate Muskogee and Ft. Smith areas. The problem has been approached by some growers by bringing in





**TABLE IV.—Average Distance to Market by Ownership Classification.  
(Miles)**

	First Choice Market	Second Choice Market	All Markets
Owners	35	65	48
Part Owners	31	49	34
Tenants	25	58	39

Second choice markets are also important in this area. However, about 42 percent of the tenants or renters did not have a second choice of markets. This compared with only 16 percent of the owners with no second choice markets. For all producers with second choice markets, an average of 57 miles was traveled in bringing produce from the farm to the market. For these markets, owners traveled the greatest distance while tenants traveled the least distance.

### Grading

Thirty-seven percent of the producers surveyed graded their produce. In most cases, the grading was performed in the field while the crop was being harvested. However, it appears that this method is neither adequate nor efficient except in those cases where experienced graders are used.

On the smaller farms where the producers were selling under their own name to a fresh market outlet, from one to three grades were packed, and grading was carried out by a systematic method. However, two exceptions were found: (1) in two instances producer-shippers used the shed grading method and packed according to definite specifications, and (2) the producers' association packed sweet corn according to U. S. specifications. For the most part, however, very little grading was done.

The lack of grading of vegetables in the area could be partially explained by the answers producers gave to the following question, "Do you receive a premium price, or do buyers pay a higher price for graded produce?" Of the producers answering, 83 percent answered "no" (Table V). Of the total sample, 72 percent of the farmers interviewed stated that there was no price advantage in marketing a graded product under present market conditions. Under these conditions, the tendency of the growers was to market ungraded produce of a much lower quality than the Oklahoma vegetable industry is capable of marketing. This practice is injurious to all growers of vegetables

**TABLE V.—Answers Given by Different Type Producers Relative to Questions Concerning Prices, Grades and Contracts.**

Question	Owners		Tenants		Part Owners	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Do you receive premium prices for graded produce?	27.7	72.3	7.7	92.3	19.0	81.0
Do you grade produce?	33.3	66.7	42.3	57.7	33.3	66.7
Is there a price advantage in graded produce?	38.9	61.1	26.9	73.1	19.0	81.0
Do you grow produce under contract?	5.6	94.4	11.5	88.5	19.0	81.0
Do you like to operate under contract?	2.8	97.2	57.6	42.4	61.9	38.1

in the state regardless of the quality pack. Many buyers at receiving points and large terminal markets, knowing that this practice exists, are not willing to run the risk on the quality of Oklahoma produce, and often buy it at a lower price than like produce from areas where quality is more dependable.

### Reason for Use of Specific Markets

Reasons given by producers as to why they use certain markets varied considerably as to importance in different areas. Of primary concern to the producers was a market which would take all or almost all of the crop offered for sale. This was the reason for preferring the present market by 29 percent of the producers in the sample. Somewhat related to this was the reason given that the present market would take the produce when it was harvested. This reason was given by 14 percent of the producers.

About 26 percent of the producers considered their present marketing firms as the best market available and gave this as a reason for use of these firms. Other reasons given for use of present marketing firms were: convenience; better price; good public relations; and dependability.

There are circumstances under which about 87 percent of these producers would change marketing firms. The most important of these is related to price. About 65 percent of the producers stated that they would change markets for better prices and other factors, with 33 percent stating price alone (Figure 6). About 24 percent said they would change if they could find a more dependable market which would take

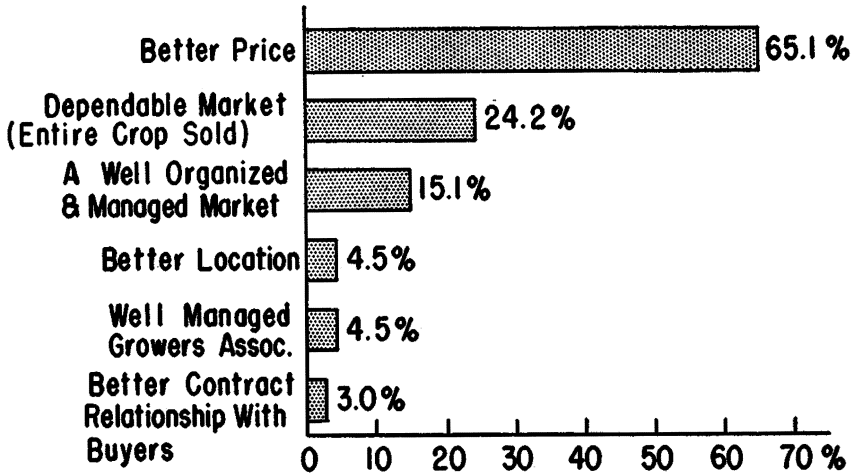


Fig. 6.—Percentage of producers surveyed who would change from present marketing firms under given circumstances.

all the crops harvested for sale. Other circumstances conducive to change were a well organized and managed market, a good growers association, and a better location of the firm relative to their farm.

### Selected Marketing Costs

Information obtained from the producers on marketing costs was too inadequate for dependable figures on all vegetables. Growers either did not know the answers or did not care to give them. However, enough information was obtained to make an estimate as to marketing cost per ton on some vegetables. The survey indicates that to market one ton of bulk spinach, including harvesting, the cost will be between \$22.50 and \$30.00; snap beans in baskets will cost between \$45.00 and \$57.50 per ton.

The only cost item in the marketing expenditure group that seemed to be fairly consistent from grower to grower was the per ton hauling charge from farm to market. On the average, this figure was approximately \$4.72 per ton regardless of type of crop hauled. Due to the overlapping of market-drawing areas, hauling varied between \$3.50 to \$8.00 per ton.

### Observations and Discussion

Both the quality of produce and the unsatisfactory relationship between some producers and cannery buyers possibly could be improved by the employment of a field man to work with the producers on prob-

lems of acreage, production, grading, fertilizing, and insect and disease control. A field man could help the cannery operator regulate the supply of produce to a more steady flow, thereby reducing the seasonal flooding which normally causes price fluctuations and declines.

Also, establishment of a market news service on the terminal market and other major fresh markets would directly benefit both producers and buyers. At the time of the study, only extremely limited information on prices and volumes at other markets, particularly major markets, were available to the producers using the fresh markets. More information available to both buyers and sellers would help create an atmosphere of competition in which the producer as well as the buyer would feel that each is getting or paying a "fair" price.

Many of the vegetable producers in the area stated that a definite need exists for the establishment of an additional type of market. From these statements and additional comments on this point, the interpretation was that an assembly point type market was needed. The producers visualized that such a market would be serviced by many buyers such as brokers, truckers, other wholesalers, retailers, and that they could sell directly to these buyers or place the produce in the hands of a commission man for sale.

There are numerous factors influencing price received and net income gained from the marketing of a particular crop of an individual farmer. Most important among these are aggregate supply and demand. Others of major importance are the farm wage rate, transportation costs, and existence and availability of market outlets. A market which has sufficient facilities and capacity, accessibility, and adequate volume, and under efficient management generally attracts more buyers and therefore better prices are paid for produce than in markets where one or more of the items are missing. However, the farmer must decide where to sell his produce, and under what conditions, quality, and grades that he will realize the greatest returns.

## **Summary and Conclusions**

A survey was made of the major vegetable producing area of Oklahoma. The area includes six counties in eastern Oklahoma. They are: Tulsa, Wagoner, Muskogee, Haskell, Sequoyah, and LeFlore. The purpose of the survey was to determine the characteristics of vegetable farms and the location, distance, and characteristics of markets as they affect vegetable production in eastern Oklahoma.

Of the farms surveyed 38 percent of the total crop acreage was in vegetables. On 42 percent of the farms, vegetables contributed more than 50 percent of the gross farm income. The most important vegetables in the area are spinach, snap beans and sweet corn. The type of vegetables grown varies from one area to another depending on the labor force available, the degree of mechanization, and the adaptability of alternative crops.

Types of markets existing in the area are varied. Both the processing and fresh markets are important and include outlets such as canneries, producer-shippers, chain store and independent retail merchants, road-side stands, and a producers association. The processing market is the most important market for the vegetable growers in the area. About 73 percent of the producers sold most of their vegetables to processors. The remaining 27 percent sold mostly to the fresh market.

Some firms involved in vegetable marketing in Oklahoma appear to be operating efficiently and are under good management. There are, however, other firms in which improvements could be made which would be beneficial to both the firm and the producer.