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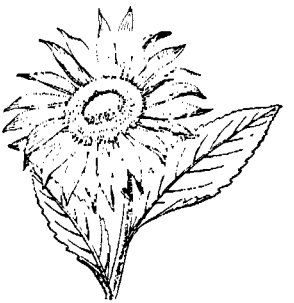
KANSAS STATE AGRICULTURAL COLLEGE
MANHATTAN, KANSAS

TYPES OF FARMING IN KANSAS



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TYPES OF FARMING IN KANSAS[1]

J. A. HODGES. F. F. ELLIOTT[2] and W. E. GRIMES

INTRODUCTION

The successful farmer make plans for the future while carrying out the necessary tasks of the present. The more facts he has available the more likely are those plan to prove to his benefit. The research and extension forces in agriculture are busy searching out and putting these facts in available form. To be most effective this work must have a definite goal. The attainment of such a goal depends upon the adaptability of the objectives and the adequacy of the plans for carrying the work into effect. This has given rise in recent years to a "program" for agriculture. Regional and local programs have been suggested.

In the adoption and application of these programs the necessity for the selection of areas with approximately the same conditions and needs, together with a fuller knowledge of the basic factors of production and distribution! has become more and more apparent. Average conditions or average farms have proved inadequate or misleading because the divergence from these averages has been so wide that the true conditions of the farms in question were not properly represented. A better approach to the problem has been made by the selection of type of farming areas. After ascertaining the outstanding conditions of these areas and studying their underlying causes, representative farms for various size groups can be determined and programs planned with more definiteness and precision.

The purpose of this bulletin is to show the method by which such areas may be chosen; to select the various type-of-farming areas in Kansas so far as possible from the present available data; to give the basic conditions underlying such a division; and to set up representative farms for the different size groups in each area.

The method of study has been historical and analytical. Data from the most accessible sources have been studied for the 16-year period from 1911 to 1926. In some cases a longer period seemed

1. Contribution No. 61 from the Department of Agricultural Economics, Kansas Agricultural Experiment Station. In coöperation with the Division of Farm Management, Bureau of Agricultural Economics, United States Department of Agriculture.

2. Senior Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture.

necessary and in others the data were available only for shorter periods of time. In still other cases illustrative material has been selected for a single year from the 1925 census.

The primary sources of data have been: The Biennial Reports of the Kansas State Board of Agriculture; county assessor's reports for recent years; the United States Bureau of the Census; the Bureau of Agricultural Economics and the Weather Bureau of the United States Department of Agriculture; the Department of Agronomy of the Kansas Agricultural Experiment Station; and cost studies made by the Department of Agricultural Economics of the Kansas Agricultural Experiment Station. The advice of men familiar with certain conditions and sections of the state also has been freely used.[3]

MEANING OF TYPE OF FARMING AND TYPE-OF-FARMING AREA

The term "type of farming" as used herein relates to the kind, quantity, and proportion of the crops and live stock found on an individual farm. A "type-of-farming area," on the other hand, is an area in which there is a fairly high degree of uniformity in the types of farming prevailing. This uniformity consists not only in the general prevalence of a particular type, but in similar soil and climatic conditions, similar trends, and similar methods and practices.

It is apparent that no division of the state could be made if a strict adherence was held to segregation on all of these bases. Conditions are not uniform enough for this so in actual practice areas are differentiated if they are similar in the major portion of their characteristics. Conditions vary to such an extent that more than one type of farming may be practiced within the same area. There is, however, a tendency for farmers to adopt a similar type of farming in areas where the basic conditions are essentially the same. The object in selecting these areas is to group those sections together which are nearest alike, considering all conditions upon which information is available. The data are available only by counties and so the division within counties may lack definiteness. Whole counties may lie between type-of-farming areas, making them unusually difficult to classify. On the whole, however, the greater number of farms in a particular area show considerable similarity or definite trends toward similar types.

3. Acknowledgment is due to H. I. Richards, R. D. Nichols, and Morris Evans for valuable assistance in and criticism of the work.

TYPE-OF-FARMING AREAS IN KANSAS

Before selecting type-of-farming areas it is well to consider the present utilization of land in Kansas and the centers of production of the more important kinds of crops and live stock taken separately, without their various relationships. This gives a much broader background for the divisions and adds clarity to the later discussion of the combination of enterprises in specific areas.

UTILIZATION OF LAND

Proportion of Total Land Area in Farms.—In 1924 appoximately 84 per cent of the land area in Kansas was in farms. This

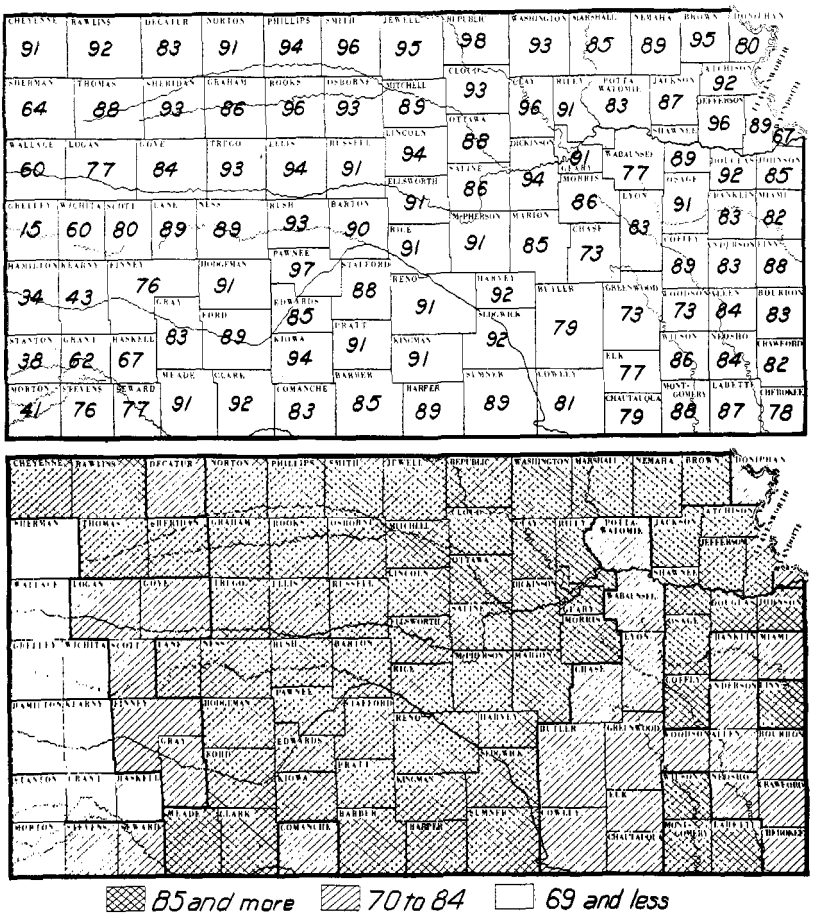


FIG. 1.—Per cent of total land area of Kansas in farms. About 84 per cent of the land area was in farms in 1924. The highest per cent was found in the central, northeastern, and northwestern parts of the state.

Source: Adapted from data obtained from the 1925 Census of Agriculture.

varied from county to county between wide extremes. Republic county had 98 per cent of its area in farms while Greeley county had only 15 per cent,. The distribution by counties is shown in figure 1. In general the counties showing thelowest per cent of land in farms are in the west central part of the state, the nest lowest are in the Blue Stem belt and to the southeast. The highest per cent of land in farms is in those counties in the central and extrerne northeastern portions of the state.

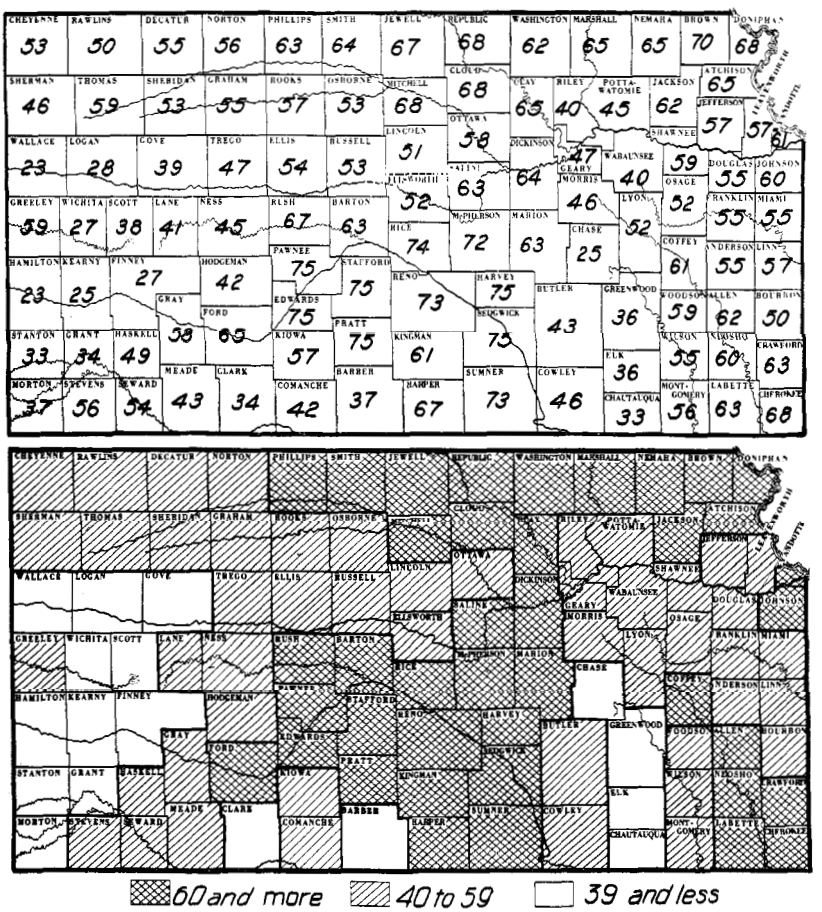


FIG. 2.—Per cent of total farm area in Kansas in crops in 1924. Approximately 55 per cent of the farm area was in crops. The per cent was highest in the central and northeastern parts of the state.

Source: Adapted from data obtained from the 1925 Census of Agriculture.

Proportion of Total Farm Area in Crops.—Taking the state as a whole, only 55 per cent of the land in farms was classified as crop land in 1924. The range was from about 75 per cent in several counties in the south central part of the state to 23 per cent in Hamilton county in the extreme west. The two regions showing the smallest per cent of crop land are important grazing regions. One is the Blue Stem belt and the other is in the western part of the state. Figure 2 shows the per cent of the land in farms that was in crops in 1924.

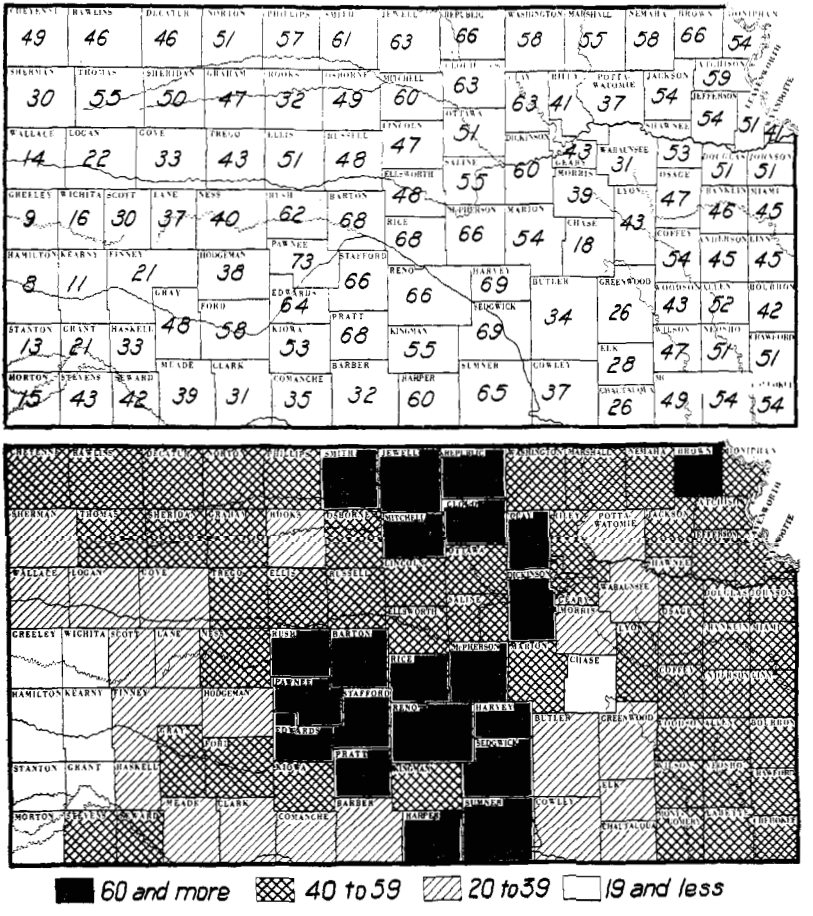


FIG. 3.—Per cent of total land area in Kansas in crops in 1924. The proportion of land area in crops ranges from 9 per cent in Greeley county on the western border to 66 per cent in Brown county in the northeastern part of the state. In general the greatest proportion of land area in crops is in the central third of the state.

Source: Adapted from data obtained from the 1925 Census of Agriculture.

Proportion of Total Land Area in Crops.—The Blue Stem belt and the western grazing section of the state have a relatively small proportion of the total land area devoted to crop production. For example, less than 10 per cent of the area of Greeley and Hamilton counties was in crops in 1924. Less than 20 per cent of Chase county was in crops in that year. The proportion of the total area that was in crops in 1924 is shown graphically in figure 3.

Crop Production.—The distribution of the production of important crops and live stock in Kansas is shown in figures 4 to 17. inclusive. Corn is especially important in the northeast, as shown by

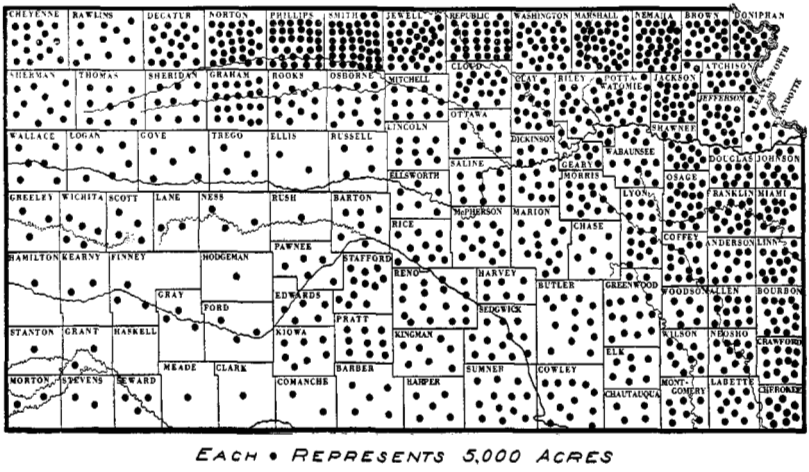


FIG. 4.—Distribution of corn acreage in Kansas, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

figure 4, extending in the north tier of counties three-fourths of the way across the state and to the south in two or three tiers of counties along the east border. From the northeast toward the central part of the state and from there to the south and wes', corn becomes less certain. In many of these counties, however, especially those with considerable bottom land, the crop holds an important place in the farm organization.

Wheat is important in the central portion of the state and its production extends to the southwest and northwest. (Fig. 5.) The acreage tends to be reduced wherever corn is well adapted. Oats are grown to an important extent in the eastern half of the state and barley in the western half, particularly in the northwest. (Figs. 6 and 7.) The Blue Stem grazing section in the east has a smaller

acreage of oats because of the large proportion of the land area in native pasture.

The grain sorghums are fairly well distributed throughout the state, as shown in figure 8. The term "grain sorghums" includes kafir, milo, and feterita when grown for grain production. These crops are of less importance where corn is well adapted. They are used extensively as a feed crop in the southwest and east central

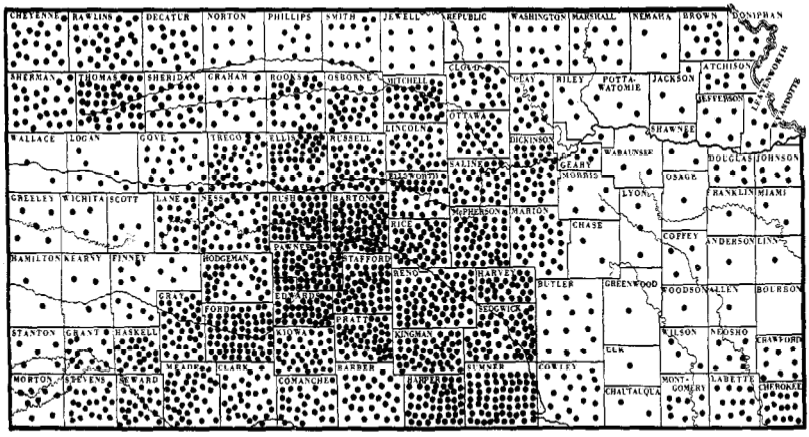


FIG. 5.—Distribution of wheat acreage in Kansas, 1926.
(Each dot represents 5,000 acres.)
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

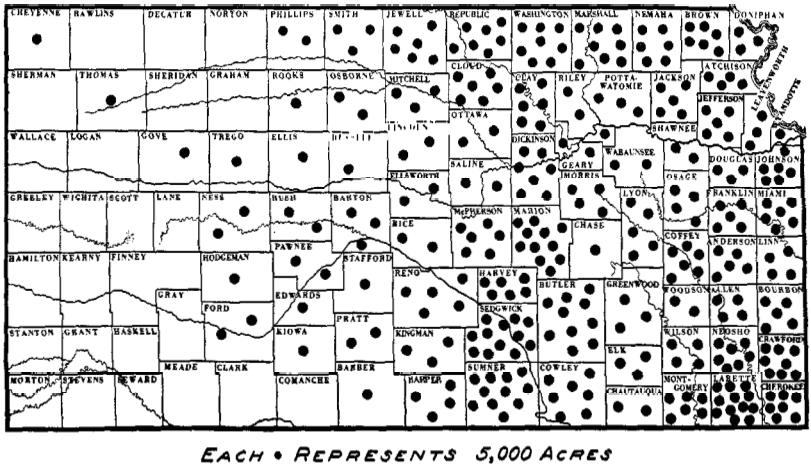


FIG. 6.—Distribution of oats acreage in Kansas, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

portions of the state. In the northwest only the earliest maturing varieties are adapted to the short growing season and only a limited acreage is grown.

Hay is important in the northeastern and eastern parts of the state. (Figs. 9 and 10.) Attention will be called later to trends in the production of hay, particularly alfalfa production. The alfalfa pro-

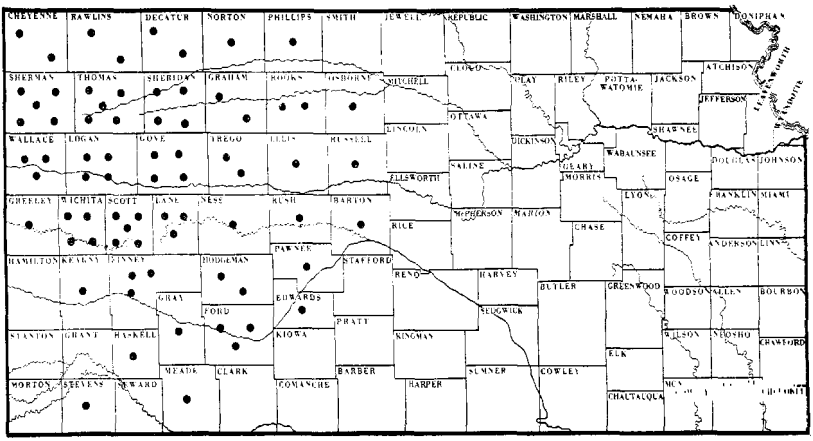


FIG. 7.—Distribution of barley acreage in Kansas, 1926. (Each dot represents 5,000 acres.)

Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

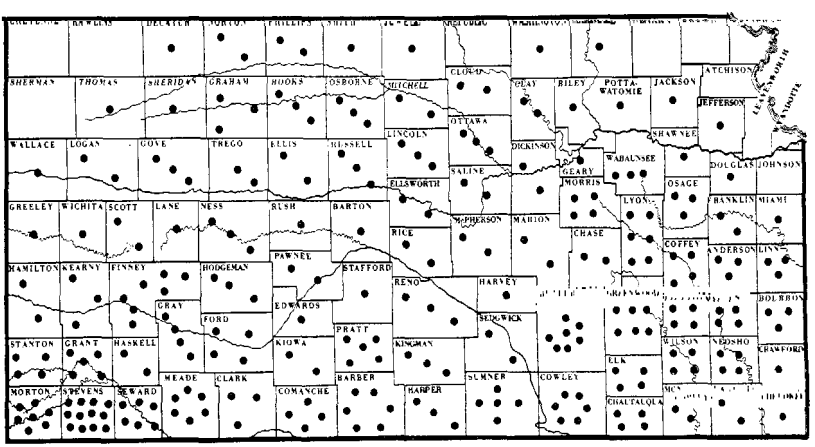


FIG. 8.—Distribution of grain sorghum acreage in Kansas, 1926. The grain sorghums represented here include kafir, milo, and feterita. (Each dot represents 5,000 acres.)

Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

duced in the western part of the state is grown in the river valleys or under irrigation.

Live-stock Production.—Milk cons are fairly uniformly distributed throughout the state, being somewhat, more numerous in the eastern portion. Their distribution is shown in figure 11. They are less numerous in the Blue Stem belt and the western grazing

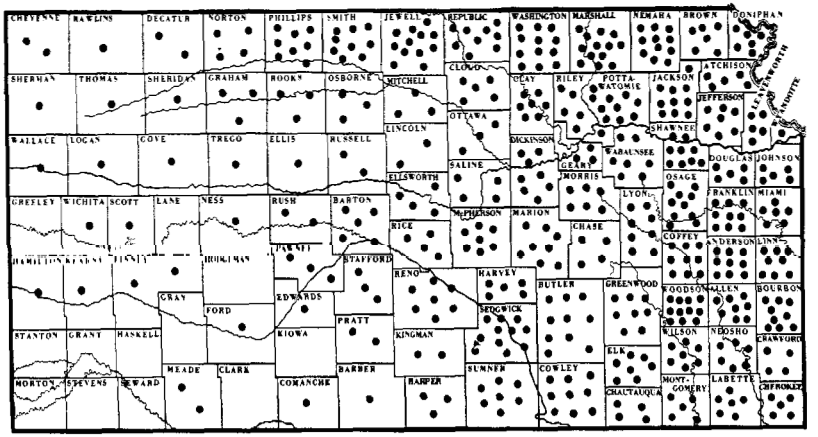


FIG. 9.—Distribution of hay acreage in Kansas, 1926.
(Each dot represents 5,000 acres.)
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

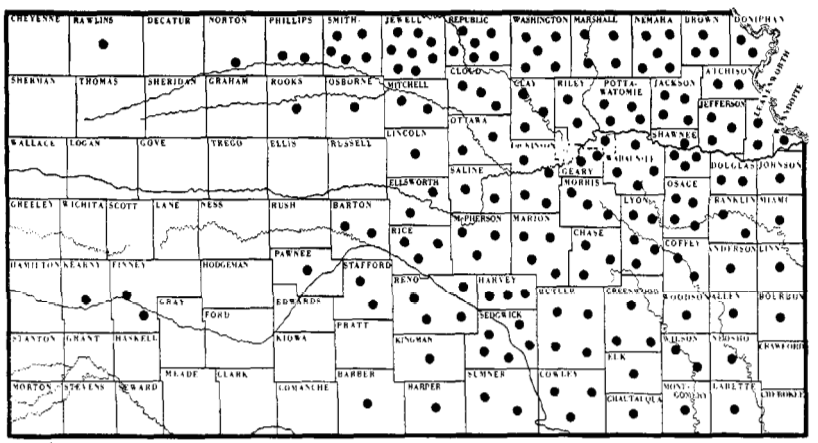


FIG. 10.—Distribution of alfalfa acreage in Kansas, 1926.
(Each dot represents 5,000 acres.)
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

region where beef cattle predominate. A better idea of their relative importance in different sections of the state may be secured by considering the distribution of whole-milk and butter-fat production. (Figs. 12 and 13.) Whole-milk production is important in three sections. One section includes the territory around Kansas City, Leavenworth, Topeka, and Lawrence. Another is in southeastern Kansas centering around the condensery at Fort Scott. More recent

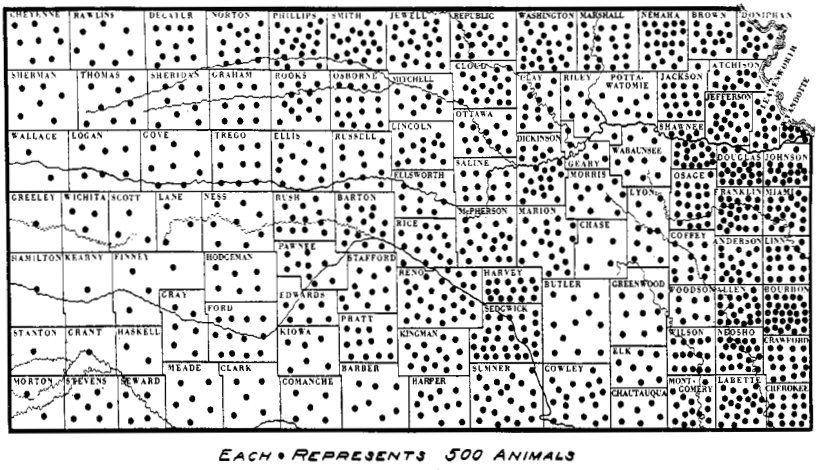


FIG. 11.—Distribution of milk cows in Kansas, March 1, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

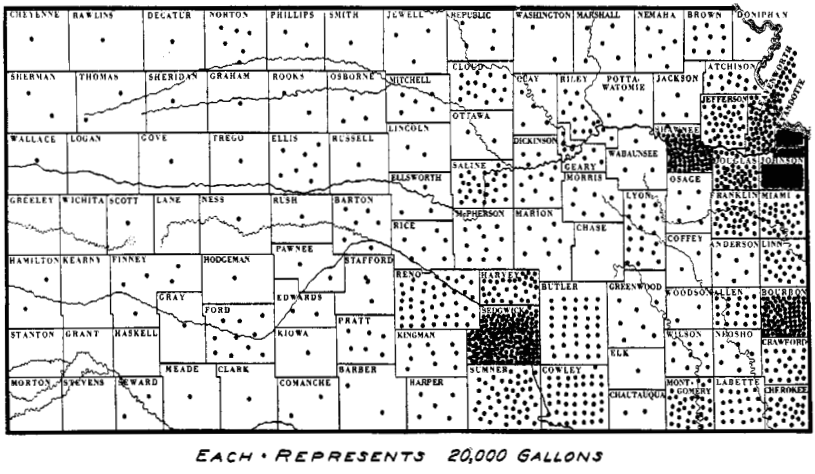


FIG. 12.—Distribution of whole milk production in Kansas in 1924.
Source: 1925 Census of Agriculture.

figures would no doubt show greater production in Allen county as a condensery has recently been established there. The third region centers around Wichita in Sedgwick county, and Mulvane in Sumner county. The latter is the location of a condensery. Butter-fat production is more widely and more evenly distributed. It is of less importance in the grazing sections than in the other regions. Butter fat is the most important dairy product of the state.

Cattle other than dairy cows are important throughout the state. (Fig. 14.) Excepting for young dairy stock these cattle are kept primarily for beef production. They are most numerous in the Blue

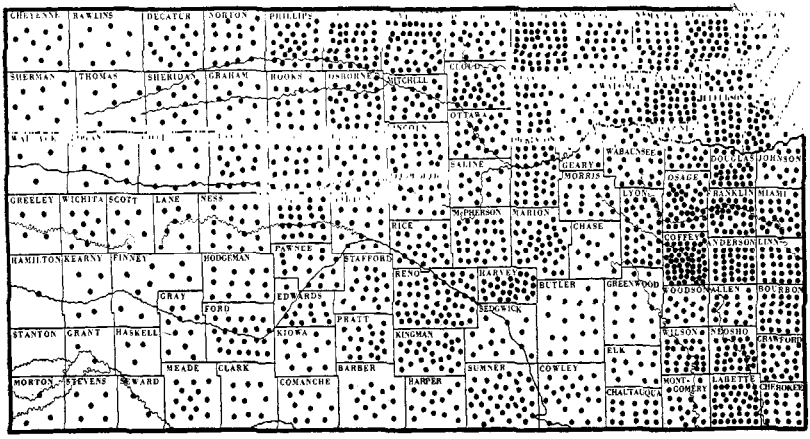


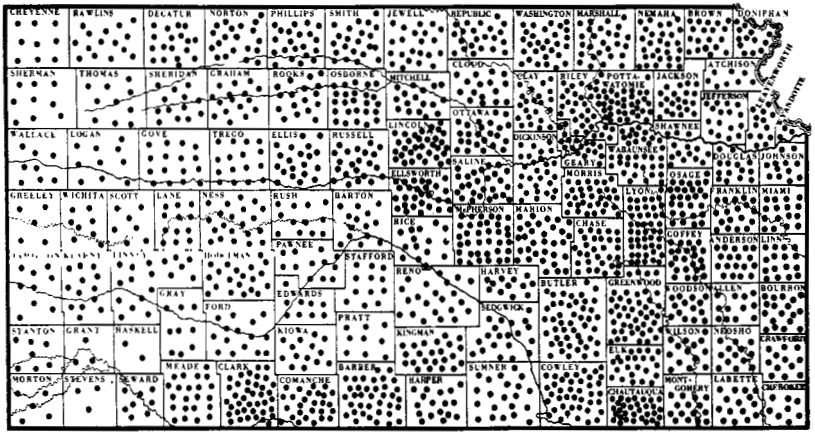
FIG. 13.—Distribution of butter-fat production in Kansas in 1924.
Source: 1925 Census of Agriculture.

Stem belt. The full importance of these cattle probably is not shown as many grass cattle come into the state in the spring and are shipped out in the fall, and consequently are not included in the figures shown. The relative importance of cattle compared with other enterprises is also underemphasized in the west and northwest. It requires more grass to carry a beef animal here than in the eastern grazing section but, relatively speaking, beef cattle constitute an important enterprise. On many farms throughout the state cattle are kept for both beef and milk.

The similarity between the regions of corn and hog production is striking. (Figs. 4 and 15.) Hogs are particularly numerous in the northeastern part of the state and toward the west and south. The

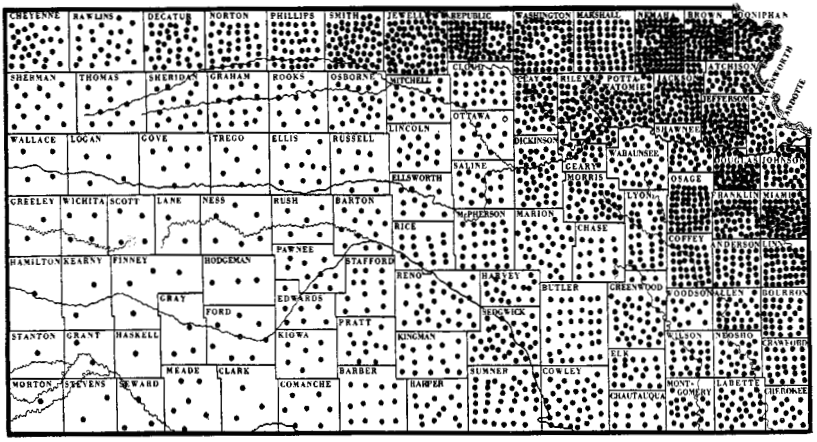
sheep population is sparse with no exceptionally heavy centers of production. (Fig. 16.)

Poultry production is fairly evenly distributed over the state, being most common where the largest proportion of the land is in farms as shown by comparing figures 1 and 17. There is a tendency to keep a fairly uniform number of chickens for each farm.



EACH • REPRESENTS 1,000 ANIMALS

FIG. 14.—Distribution of cattle other than milk cows in Kansas, March 1, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.



EACH • REPRESENTS 500 ANIMALS

FIG. 15.—Distribution of hogs in Kansas, March 1, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

While figures 4 to 17, inclusive, clearly indicate the geographical distribution of the different crops and live stock in the various parts of the state and show the areas in which each is relatively most important, they do not give a definite idea of the actual types of farming prevailing. To get such a picture it is necessary to consider these crops and live stock not as separate enterprises but as

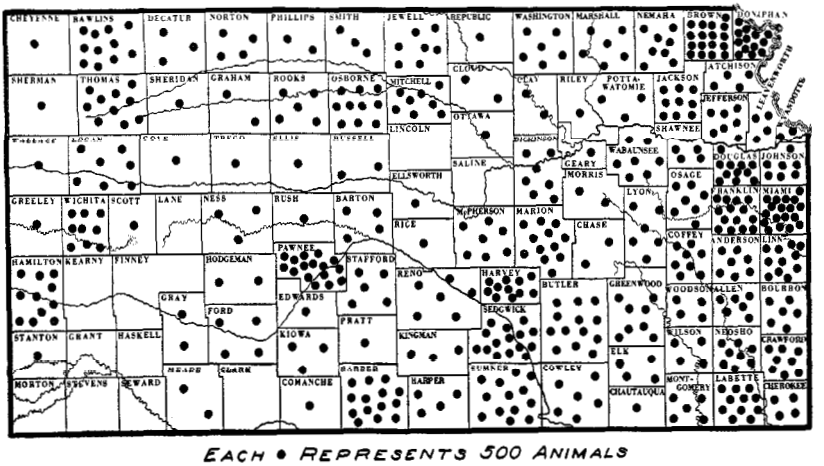


FIG. 16.—Distribution of sheep in Kansas, March 1, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

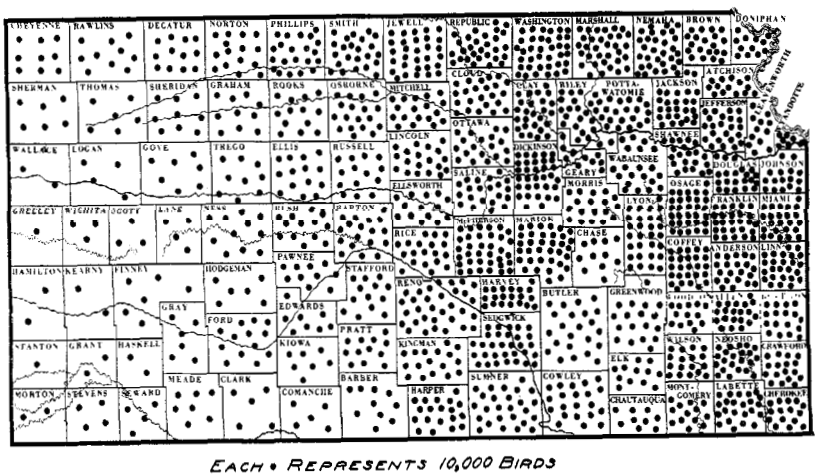


FIG. 17.—Distribution of poultry in Kansas, March 1, 1926.
Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

combinations of enterprises existing under given physical conditions and with similar methods and practices.

For this purpose it is convenient to divide the state into 12 type-of-farming areas. In five of these corn is the dominant crop, in five wheat is most important, and two are characterized by the predominance of grazing land. The importance of the different live-stock enterprises in the several areas varies to a considerable extent as might be expected from the previous illustrations and discussion. Figure 18 shows the 12 areas.

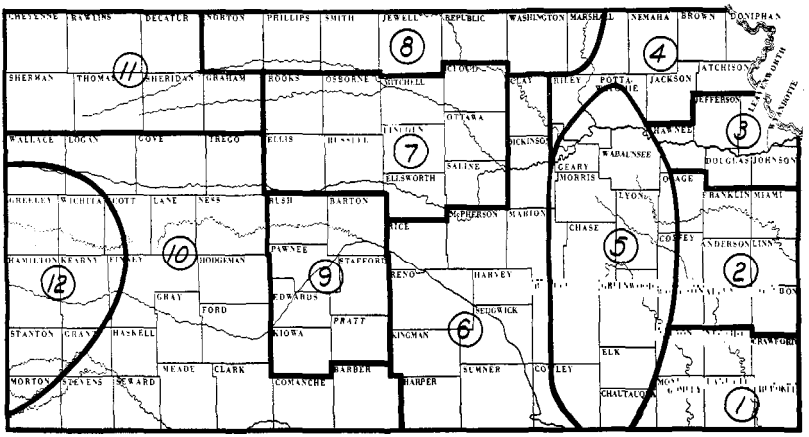


FIG. 18.—Type-of-farming areas in Kansas. This division of the state into type-of-farming areas is based on variations in physical factors, such as soil type, topography, precipitation, and temperature, together with similarity in present, past, and potential crop and live-stock organizations.

BRIEF DBSCRIPTIONS OF THE AREAS

Area 1.—General farming is followed in this area. Corn, wheat, and oats are fairly well balanced. Corn is supplemented by grain sorghums. Hay and pasture occupy a large part of the area. Dairying and poultry are important enterprises.

Area 2.—General farming is followed in Area 2. Corn is more important and oats and wheat are less important than in Area 1. Grain sorghums are relatively important. There is considerable hay and pasture. Dairying and poultry are somewhat more important than in Area 1.

Area 3.—General farming also is followed in Area 3. Dairying, especially whole milk production, is common. Corn is the predominant grain crop and is followed in importance by wheat and oats. Alfalfa is the chief hay crop. Poultry are important.

Area 4.—This area is in the corn belt. Corn and hogs are most important, with wheat and oats comparatively unimportant. Beef cattle. alfalfa, and poultry are important enterprises.

Area 5.—This area includes the long-grass grazing region comprising chiefly the Blue Stem belt. Corn and sorghums are the chief feed crops. Wheat is sometimes grown on the more level land. Cattle are shipped in for the grazing season. Some cow herds are kept and a small proportion of the steers are fed either on grass or later.

Area 6.—Wheat production is characteristic of this area. Corn and some grain sorghum are grown. Oats and alfalfa are important crops. Live stock are more important here than in the areas farther west.

Area 7.—Wheat is a prominent crop in this area. There are less corn and oats than in Area 6 but there is more pasture. Live stock on the whole are less important.

Area 8.—This area includes the western portion of the corn belt. Corn and hogs are less important than in Area 4. Wheat is more important in the western part of the area.

Area 9.—Wheat is the most important crop in this area, comprising, on the average, a larger per cent of the farm acreage than in any other area. Considerable corn and sorghums are produced. Live stock are less important than in Areas 6 and 7.

Area 10.—Wheat occupies much of the cultivated land in this area and the acreage is increasing rapidly. Grain sorghums are the most important row crop. Pasture and beef cattle are important.

Area 11.—Wheat ranks first among the crops in this area but corn and barley occupy important places in the farming systems. Pasture and beef cattle are important.

Area 12.—This is the short-grass grazing region. Wheat and sorghums are the principal crops, but there is only a small per cent of the total land area in crops.

The most important characteristics of the prevailing type of farming in each area are as follows: The first three areas are characterized by general farming, while Areas 4 and 8 constitute the greater portion of the corn belt of the state. Areas 6, 7, 9, 10, and 11 are wheat-farming areas; and Areas 5 and 12 are primarily grazing regions.

FACTORS CONSIDERED IN DETERMINING TYPE-OF-FARMING AREAS

There are many factors which affect types of farming. Those of first importance are the physical factors such as soil and topography, precipitation, evaporation, and length of growing season. Transportation and the availability of markets may have a marked effect. Assuming similarity in other conditions, those products will be grown at long distances from market which are least bulky in relation to their value. Perishable products tend to be produced near market, but improved transportation facilities may overcome this tendency to a large extent. Whole milk furnishes a good example. Whole milk is constantly being produced farther and farther from market centers. This has been due largely to developments in transportation. The use of thermos tanks on trucks and tank cars makes the longer hauls possible and thus whole-milk areas are extended. The present whole-milk areas in Kansas may be changed and extended by developments in transportation and markets.

Personal preference or custom may affect the type of farming. This is particularly true where a neighborhood is settled by farmers of the same nationality who have transplanted customs from their former homes. When a type of farming which was once well adapted is no longer adapted because of changing conditions, there is a tendency for the old type to remain for a time by force of custom.

In selecting type-of-farming areas, not only all of these factors must be considered but others may aid in the segregation of areas which are similar in the greater number of points. The adaptability of the various enterprises and the combination of these enterprises which is most common must receive attention. Crop yields and the variability of yields may determine to a large extent the crops that are grown and the kind and quantity of live stock kept. After determining the present organization of farms in an area, a study of the trends of the various crop and live-stock enterprises must be made to learn which of these are increasing in importance and which are decreasing or remaining constant. These trends are particularly important where types or sizes of farms are changing rapidly.

PHYSICAL FACTORS

Soils[4].—There is such a wide variation in the soils of a given region that it is impossible to describe them in detail or with any

4. Contributed by Prof. R. I. Throckmorton, head of the Department of Agronomy.

great degree of accuracy. For this reason, the following remarks are quite general and are intended only to present an idea of the origin and characteristics of the predominating soils in each area.

Area 1.—The soils of this area have been derived primarily from shale and sandstone, but there are local areas where the soils have been formed from limestone. Characteristically, these soils have a gray to brown surface soil underlaid by a clay-pan formation which prevents percolation of water and in some cases the penetration of roots. The topography is level to rolling and this condition, together with the clay-pan subsoils, results in poor drainage. The soils generally are low in phosphorus, nitrogen, and organic matter, and are acid.

Area 2.—The soils in Area 2 vary from those of the rough broken limestone lands to those of the almost level areas which have been formed largely from shale. The more level to rolling areas have typical brown to black surface soils underlaid by a clay pan which results in poor drainage. Such soils are used largely for the production of general farm crops in this area. The more broken limestone lands are used primarily for grazing purposes. Practically all of the upland soils in this area are acid but, through the use of lime, alfalfa and other legumes may be grown successfully.

Area 3.—The soils of Area 3 may be classified in three groups, the first comprising the soils south of the Kansas river, the second those of the Kansas river valley, and the third of the glacial and loessial soils north of the valley. The soils of the first group have been formed largely from limestone, sandstone, and shale, and range from relatively fertile rolling areas to rough, broken lands adjacent to the streams. The soils in this area that are used for cultivated crops are, in general, dark brown to black, frequently underlaid by a clay pan. Practically all are deficient in lime, and most of them are low in organic matter, nitrogen, and phosphorus. The soils of the Kansas river valley are largely sandy and very fine sandy loams which are quite fertile and adapted to all general farm crops as well as truck crops.

The soils making up the southern part of the area north of the Kansas river are very much the same as those occurring south of the river, while the other soils have been derived from glacial or from loessial material. Along the bluffs adjacent to the Missouri river and in local areas on the bluffs north of the Kansas river, loessial soils predominate. These soils are usually rolling to hilly in topography but are quite fertile. The glacial soils which lie more to the

north and west are very subject to erosion and are in general low in organic matter, nitrogen, and phosphorus. Most of these soils are also deficient in lime. With proper attention to fertilizer requirements, they are adapted to practically all general farm crops.

Area 4.—The soils in Area 4 have been derived largely from glacial material and therefore are relatively fertile, quite deep, and are well adapted to a heavy type of general farming. The topography is rolling, the soils are subject to erosion, and in many places respond to the use of phosphatic fertilizers. In the eastern part of this area, the soils have been derived from loessial material, are hilly in topography, very subject to erosion, but if properly handled are quite productive. Along the southern and western portions of the area, the soils have been derived from limestone and shale. These soils are becoming low in organic matter and nitrogen, due largely to the loss of surface soil through erosion.

Area 5.—Most of the upland soils within this area have been derived from the weathering of cherty limestone. There are, however, local areas where the soils have been formed from limestone and shale. In the former areas the topography is rolling to hilly and the soil is frequently shallow and filled with fragments of chert. In the latter area, the soils are level to rolling, are usually quite heavy, and are adapted to the production of general farm crops. The valleys throughout this area are quite fertile.

Area 6.—In the northern, eastern, and southern portions of this area the soils have been formed from interbedded limestone, sandstone, and shale, thus resulting in soils which vary from sandy to clayey in nature. Most of these soils are level to gently rolling in topography with occasional areas of hilly lands. The soils are usually deep, easily tilled, and therefore adapted to the production of general farm crops. The soils making up the west part of this area, and particularly the west central portion, have been formed from outwashed plains material from the Rocky mountains. This material was formerly an outwash plain which has been weathered to form soil. These soils in general consist of sandy loams.

Area 7.—The soils in this area have been derived either from sandstone or limestone. Many of the soils in the eastern part of the area have been formed from sandstone and are relatively shallow, rolling to hilly, and not well adapted to the production of cultivated crops. The soils of the western part of the area have been formed primarily from limestone, are more level, heavier in texture, and are well adapted to the production of small grains.

Area 8.—The soils making up Area 8 vary from glacial material in the eastern part of the area, to residual soils derived from limestone and shale in sections of Marshall and Washington counties, and areas a little farther west where the soils have been formed primarily from sandstone to soils of æolian origin in the western half of the area. Practically all of these soils occupy rolling lands, are quite fertile, and are well adapted to general farming.

Area 9.—The soils of the northern part of Area 9 consist of residual material which has been derived largely from the weathering of limestone, while in the central and southern portions, the soils are more sandy and have been derived primarily from outwash plains material. The sandy condition of these soils permits a ready penetration of moisture and a more complete extraction of moisture by plants. Consequently this area is better adapted to corn than are some of the heavier soils farther east. The heavier soils of this entire area are well adapted to the production of wheat, because of the high fertility of the soil and the level to gently rolling topography.

Area 10.—The soils in Area 10 have been derived from various types of material, and in various ways. In the northern part, of the area, the soils are largely of aeolian origin except on the breaks adjacent to the streams. Throughout the central and southwestern portions, the soils have been formed from the weathering of the outwashed plains material and vary from heavy to very sandy in texture. In the south central portion of the area, the soils are residual from sandstone and shale materials. In general, the topography throughout this area is level to rolling, thus making the region adaptable to the use of power farm machinery.

Area 11.—Most of the soils in Area 11 have been formed from the weathering of aeolian materials. They are quite deep, fertile, and have a level to gently rolling topography. There are areas, however, along the streams that are quite broken and where the soils have been formed from the weathering of limestone. Such areas are adapted primarily for pasture purposes.

Area 12.—The soils in the northern part of Area 12 have been derived from the weathering of æolian material, are made up primarily of silt loams, and occupy level to rolling topography. Throughout the central portion of the area, particularly north of the Arkansas river, the soils have been formed from the weathering of marl, are quite broken, relatively shallow, and therefore not well

adapted to the production of cultivated crops. The soils in the southern part of the area have been derived from the weathering of outwashed plains material, are level to rolling in topography, and, when moisture conditions permit, are adapted to the production of wheat and the sorghums.

Topography.—The elevation of Kansas varies from less than 1,000 feet in the east to more than 3,900 feet in the west. The east and northeastern parts of the state are gently rolling. Much of the Blue Stem belt in Area 5 is too hilly or rough for general farm-

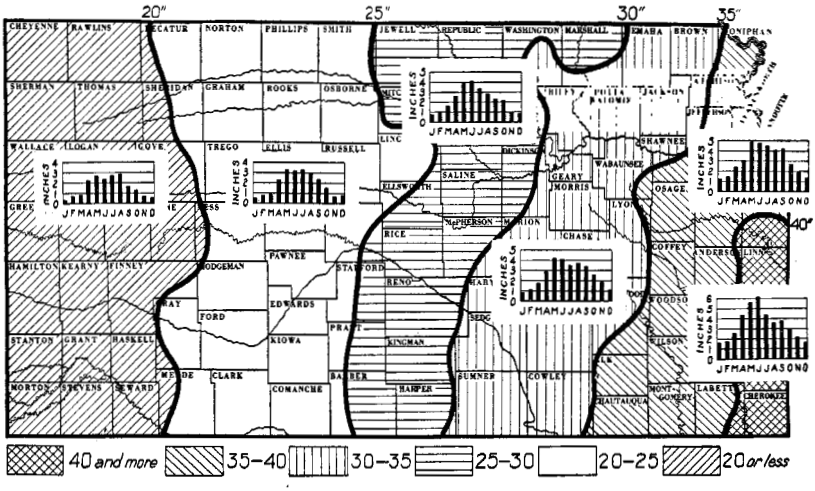


FIG. 19.—Average rainfall in Kansas with normal distribution at representative stations in each area. The average rainfall varies from more than 40 inches in the southeastern to 15 inches in the extreme western part of the state. There is not a great deal of difference in the seasonal distribution.
Source: U. S. Weather Bureau Reports.

ing except in the valleys and lowlands, which are quite fertile. The central and western portions of the state are generally level to slightly rolling. These characteristics should be kept in mind in connection with the type-of-farming map. The comparatively level land in the central and western parts of the state makes possible the use of the power equipment which is so important in crop production in this region. In eastern Kansas the equipment used is smaller, due in part to the more rolling land and in part to the crops grown.

Precipitation.—The average rainfall of the different parts of Kansas varies from more than 40 inches in the southeast to ap-

proximately 15 inches in the wet. Not only is the rainfall much lighter in the west but evaporation is far more rapid. Figure 19 shows the state divided into six regions by lines which are drawn roughly to indicate territory varying in rainfall by approximately 5 inches. In each of these regions on the map a small chart giving the normal monthly distribution of rainfall is superimposed. There is a marked similarity in these normal distributions. There is a tendency, however, for the regions of lighter rainfall to get a larger proportion of their rainfall during the growing season. In the extreme eastern part of the state 48 per cent of the rainfall falls from May to August, inclusive, and 68 per cent falls from April to September. In the extreme western part, 57 per cent falls from May to August and 77 per cent from April to September. There is a gradual change from east to west. Large deviations from the normal rainfall are not uncommon.

Rainfall is more often the limiting factor in crop production in Kansas than any other single cause. It sets the limit of corn production more definitely than the soil and the drier regions are more likely to turn to grain sorghums. The southeastern part of the state, however, grows considerable grain sorghums even with ample rainfall for corn production. Here the poorer soils and other factors favor grain sorghums in preference to corn. While the moderate rainfall of the central portion of the state is a boon to wheat production, the lighter rainfall to the west adds considerable hazard to its production. The ability to handle large acreages efficiently and to tide over the poorer years by using reserves accumulated in the years of good crops can make farming in this part of the state permanently successful. Not only must the total rainfall be considered and its normal distribution, but also the probability of deviations from the normal. For corn production the rainfall of June, July, and August is particularly important, that of July being most likely to change the yield materially. For wheat the months of primary importance are those immediately before and during the seeding season and the spring months immediately before harvest. The rainfall during September, May, and April is especially important. Moderate rainfall for the weeks immediately preceding harvest followed by drier weather would of course be ideal for small grains. Alfalfa and other hay crops are limited quite definitely by rainfall. Comparison of the maps showing crop distribution with the rainfall map clearly shows the relation of rainfall and crop production in Kansas.

Evaporation.—The rapidity of the evaporation of moisture from the soil in much of Kansas is an important factor affecting crop production. Figure 20 is a map of Kansas with charts superimposed on it showing for a number of recent years the average evaporation from a free water surface at Manhattan, Hays, Colby, and Garden City.

The long period of warm weather and the frequency of brisk winds result in a high rate of evaporation at Garden City. At Colby, the higher altitude and the shorter period of warm weather

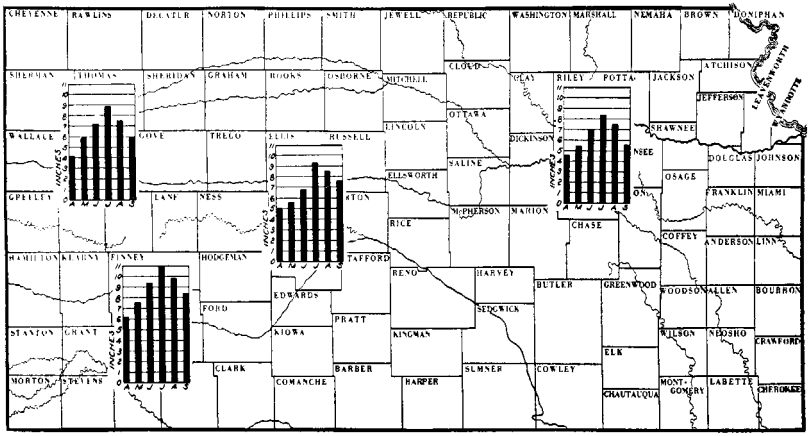


FIG. 20.—Evaporation from a free water surface during the summer months at different stations. Evaporation is an important factor in determining the moisture available for plant growth, being more significant in the drier sections of the state. Evaporation at a particular station tends to be inverse to the rainfall.

Source: Manhattan data, Department of Agronomy, Kansas Agricultural Experiment Station; data for Hays, Colby, and Garden City, Office of Dry-Land Agriculture, United States Department of Agriculture.

reduce the evaporation. More humid conditions and less frequent high winds reduce the evaporation at Manhattan compared with the other stations. There is considerable variation in the evaporation from year to year, but this variation is not so great as the variation in annual rainfall.

Length of Growing Season.—The growing season is longest in the southeastern and shortest in the northwestern portion of Kansas. It varies from an average of more than 186 days to less than 154 days. The longer growing season of southeastern Kansas is more variable than the shorter season of northwestern Kansas. Figure 21 divides Kansas into regions varying in growing season by approximately one week. The superimposed bars indicate for each

region the length of the period which may be expected to be absolutely frost free and the periods which are frost free 80 per cent of the time, 50 per cent of the time, and 20 per cent of the time, respectively. Just what relation exists between late frosts in the spring and early frosts in the fall is not known.

The length of the growing season affects both the kind and the variety of a crop that is grown in a particular region. For example, in northwestern Kansas corn replaces grain sorghums because it can be grown with a shorter season, but only early-maturing va-

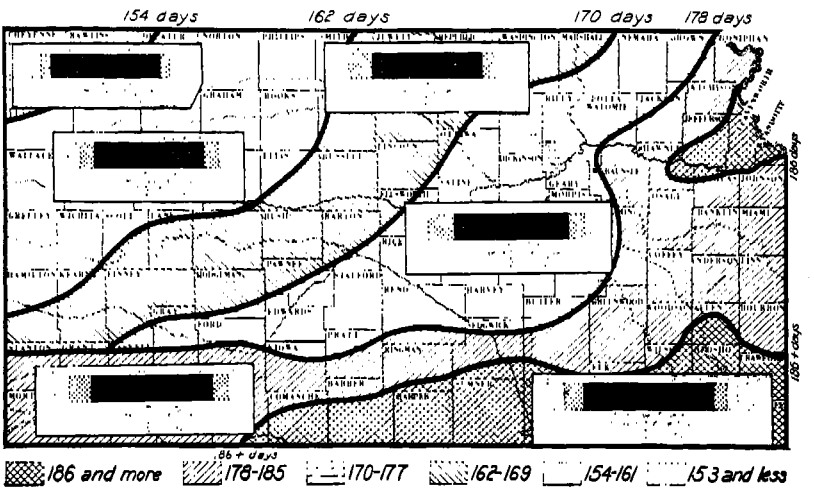


FIG. 21.—Average length of growing season in Kansas with variations in frost-free days at representative stations in each area. The average length of growing season in different sections of Kansas ranges from more than 186 days to 154 days or less.

Source: U. S. Weather Bureau Reports.

rieties are grown. Likewise varieties of corn which are adapted to the moderately long growing season, the productive soil, and the ample rainfall of the northeastern part of the state are not adapted to the shorter seasons and semiarid conditions of the northwest or to the conditions in south central Kansas.

Yields of Crops.—The yield of crops is the result of a large number of factors. Some of these are the physical factors such as type of soil, precipitation, and growing season, while others have to do with the selection of adapted varieties, cultural practices, the control of insects, diseases, and the like. While high yields are an indication of the combination of the best physical factors, the effect of the other factors may bias the comparison to a certain

extent. With the data at hand it is impossible to measure the effect of these nonphysical factors on yield so the yields obtained are taken as the best indication of the physical factors concerned. If a region with the optimum combination of these factors is also more intensively farmed, the resulting yields may appear to be even higher in comparison with other regions than the conditions seem to warrant.

Index of Yields.—The index 5 of yield has been calculated by counties to show which regions have the best yields when all the

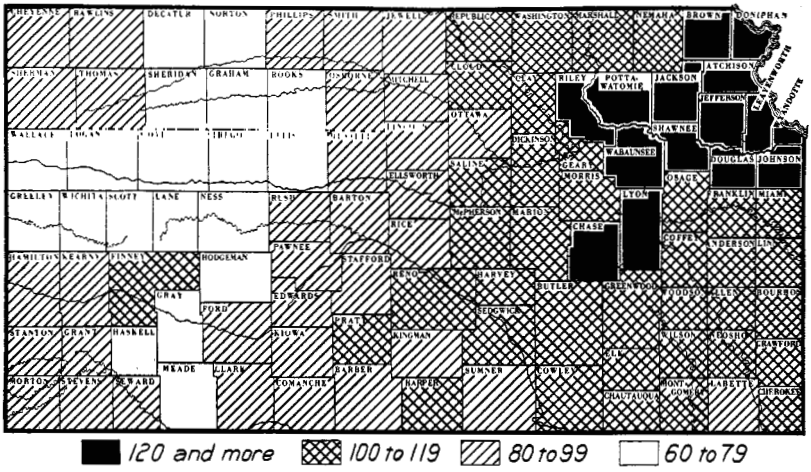


FIG. 22.—Index of combined yields of all the important crops in Kansas. This index reflects the effect of the various factors such as soil type, precipitation, and cultural practices on yields. The average yields for the state were taken as 100. The highest yields were obtained in the northeastern part of the state.

Source: Adapted from data obtained from the Biennial Reports, Kansas State Board of Agriculture.

important crops are considered. The variation in the index for the various counties of Kansas is shown in figure 22. The northeastern counties seem to combine more favorable factors as indicated by yields. The ample rainfall and long growing season in the southeastern part of the state help to counteract the poorer soils. In general the counties toward the west secure lower yields as shown by the indexes. In the central and western parts of the state the index is heavily weighted by wheat while in the northeast it is

5. In computing the index of ylelds the average yield for **the** state of each crop for 1911 to *1926* (or for shorter perlods where complete data **were** nor available was used as a **base** for calculating the relatives. **the** relatives were combined by weighting each crop by **the** average acreage for the 5-year period, 1922 to 1926 inclusive

heavily weighted by corn, due to large acreages of these crops in the respective regions.

Variability in Yields.—Not only is the average yield important but also the deviation from the average. The average tends to cover up the fact that yields may have been exceptionally low during certain years and high in others. The failures are smoothed out by a few high yields. For this reason the index of variability[6] was calculated and is shown for the various counties in figure 23. Those counties having high yields tend to have low variability in

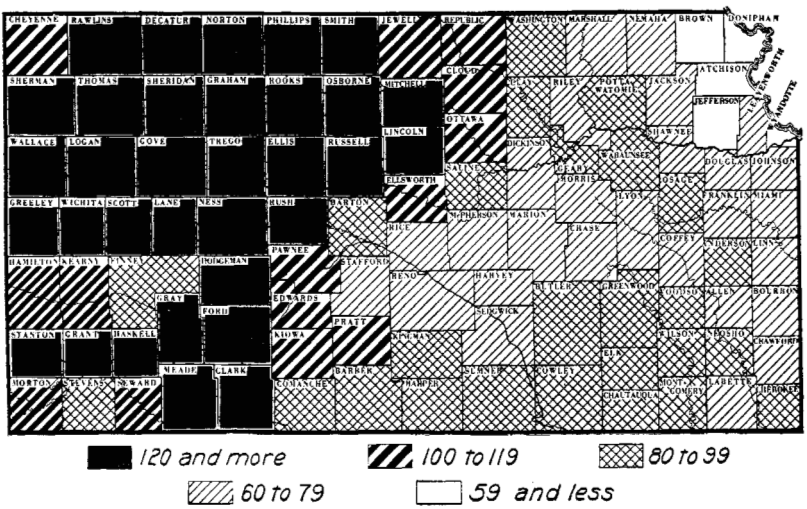


FIG. 23.—Index of variability of combined yields of all important crops in Kansas. This index shows that the yield of crops in Kansas is most variable in the western half of the state. The variability of the average yields of the state was taken as 100.

Source: Adapted from data obtained from the Biennial Reports, Kansas State Board of Agriculture.

yields while those with low yields have high variability. The counties of lowest variability are in the northeast while those of highest variability are in the west. Soils have a greater effect upon the average yield than upon its variability while weather and other hazards are much more important in causing variability. High yields in Kansas are associated with low variability and low yields with high variability as the lowest average yields are commonly found in the drier sections where weather conditions vary most.

6. The coefficient of variability is the standard deviation divided by the arithmetic mean. The averages of the coefficients for all counties for each crop were used as 100 in calculating the relatives. These were weighted and combined into an index in a manner similar to that used in computing index of yield.

This does not mean that crops on some soils may not stand drought or other conditions better than on others but that the other factor. are much more apparent.

The relationship between the variability of yields of different crops depends largely upon their adaptability. For example, in Area 4 the variability of the yield of corn and milo is approximately the same, corn being slightly more variable, while in Area 10 corn is about 75 per cent more variable than milo. While other factors enter in, this helps to explain why milo and other grain sorghums are grown so much more extensively in comparison with corn in Area 10 than in Area 4.

In the consideration of both average yields and variability of

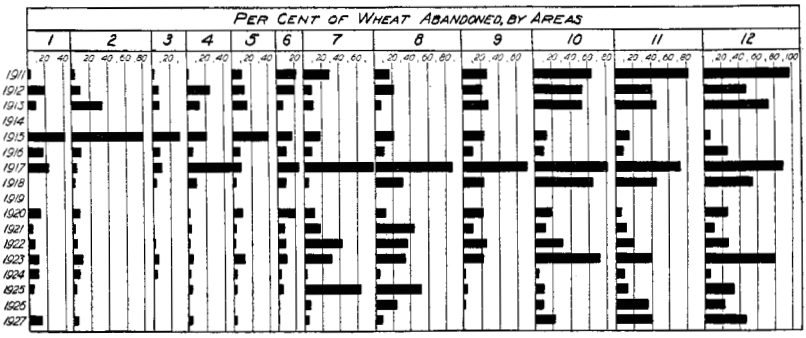


FIG. 24.—Per cent of seeded wheat acreage abandoned by type-of-farming areas, 1911 to 1927. The areas of heavy abandonment vary from year to year. The acreage abandonment is usually greater in the western part of the state.

Source: Adapted from data obtained from the Biennial Reports, Kansas State Board of Agriculture.

yields the fact that harvested acreages have been used should be borne in mind. This tends to give the western part of the state an advantage, since the abandonment, especially of wheat seeded, is much higher than in the central and eastern parts of the state. However, if the seeded acreage had been used in calculating the indexes there would often have been duplications of acreages, as abandoned wheat acreage may be planted to spring crops. An indication of how much the calculations may have been influenced by using harvested wheat acreage is given in figure 24, showing the abandonment of wheat. In some years, as in 1917, abandonment, was quite general and heavy. In most years, however, the abandonment, was heaviest in the western areas. Abandonment in the eastern and northeastern portions of the state is ordinarily not heavy enough

to be significant, although in 1912, 1915, and 1917 abandonment was fairly heavy in these regions.

Yields Commonly Secured in Different Type Areas.—The comparative yields in the various sections of the state when the principal crops are considered in combination have been shown in figures *22* and 23. Table I shows the yields commonly secured. They have been estimated after an examination of the yields obtained during a period of from 11 to 16 years. The yields for poor years, good years, and normal years are given for each crop by areas. The absolute range is not given as the extreme ranges occur only as exceptions to the general rule. The difference in yields of a particular crop from area to area is not so great in good or normal years as in poor years. This is another way of stating that the variability of yields must be considered as well as averages to get the whole picture.

The comparison of the yield of a specified crop from area to area does not offer a complete explanation of why the crop is more important in one area than in another. For example, in Area 4 the normal yield of wheat is 17 bushels an acre while in Area 9 it is only 11 bushels, yet wheat is by far more important in Area 9 than in Area 4. Comparison of the yields of the different crops in the various areas explains why one crop is important in one area and may be grown very little in another where equally good yields are secured. The normal yield of corn in Area 4 is 9 bushels more an acre, in good years, 12 bushels more, and in poor years 8 bushels more than in Area 9. The normal yield of alfalfa is more than half a ton an acre higher in Area 4 than in Area 9. In Area 4 wheat cannot compete with corn and live stock, the production of which is promoted not only by the corn grown but also by the good and reliable yields of alfalfa and other feed crops. On the other hand the climate of Area 9 is better suited to wheat than corn and the topography is such that large machinery can be used to much better advantage than in Area 4.

In comparing the yields commonly secured another factor must be considered. In some areas only the land best suited to the production of a crop is devoted to it. For example, the yield of alfalfa in Area 12 is not materially lower than in Area 6. In Area 12, however, the yield is based on from 6 to 15 thousand acres while in Area 6 it is based on 175 to 200 thousand acres. The proportion of the crop area suitable for alfalfa in Area 12 is much smaller than in Area 6. It is of course smaller in Area 6 than in Areas 3 and 4.

TABLE 1.—CROP YIELDS PER ACRE COMMONLY SECURED IN THE DIFFERENT TYPE-OF-FARMING AREAS IN KANSAS.
(Source: Biennial Reports of State Board of Agriculture, 1911-1926.)

TYPE AREA.	Corn.			Oats.			Barley.			Wheat.			Milo.			Feterita.		
	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.
	Bus.	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*
1	7	25	18	10	30	17	10	20	15	10	20	16	9	18	15	9	15	12
2	7	28	20	15	29	23	14	25	20	11	20	15	8	23	17	10	23	18
3	10	32	22	18	33	27	10	25	17	12	20	15	10	25	17	12	25	20
4	18	32	25	20	33	25	15	26	20	14	21	17	10	22	19	11	24	20
5	6	30	19	20	32	27	8	23	18	11	22	17	10	22	18	10	22	18
6	8	20	15	15	27	20	15	25	21	12	20	15	7	21	16	14	22	17
7	6	25	16	10	30	22	10	27	20	8	18	11	7	22	18	9	25	18
8	10	26	17	12	28	20	10	25	18	9	19	15	8	21	17	8	21	17
9	10	20	16	12	26	21	13	25	21	7	18	11	10	22	17	10	24	19
10	5	18	13	5	20	12	6	19	15	4	15	10	8	18	14	8	17	12
11	5	20	13	5	28	17	7	29	18	5	16	12	7	22	15	5	22	15
12	5	20	13	7	22	15	8	21	16	6	17	12	8	19	14	8	20	16

TABLE I.—*Concluded.*

TYPE AREA.	Kafir.			Alfalfa.			Prairie hay.			Kafir for hay.			Sudan.			Cane hay.		
	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.	Poor years.	Good years.	Normal years.
	Bus.	*Bus.*	*Bus.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1	10	18	14	2.25	3.25	2.50	.60	1.50	1.00	2.00	3.50	3.00	2.25	3.25	2.75	2.25	3.75	3.25
2	8	25	20	2.60	3.00	2.50	.75	1.50	1.00	2.25	3.50	3.00	2.60	3.40	3.00	2.75	4.00	3.50
3	16	25	21	2.40	3.50	3.10	.75	1.50	1.20	1.60	3.75	2.75	2.40	3.75	2.80	3.00	4.75	3.80
4	10	25	19	2.50	3.60	3.10	.75	1.40	1.00	2.10	3.75	3.00	2.10	3.60	2.80	2.00	3.50	3.00
5	8	25	18	2.40	3.40	2.90	.75	1.25	1.00	2.40	3.60	3.00	2.25	3.60	3.00	2.75	4.00	3.40
6	8	22	15	2.00	3.25	2.60	.75	1.40	1.00	2.25	3.00	2.50	2.00	3.00	2.50	2.40	3.25	2.75
7	6	25	18	1.75	3.00	2.40	.50	1.50	.90	1.90	3.00	2.60	1.50	2.75	2.60	1.75	3.50	2.50
8	7	23	18	2.00	3.00	2.50	.75	1.40	1.00	1.60	3.40	2.50	1.50	2.80	2.25	1.25	3.25	2.50
9	8	22	15	2.25	3.00	2.50	.75	1.25	1.00	1.80	3.25	2.50	1.90	2.90	2.40	2.00	3.50	3.00
10	7	18	13	2.10	3.25	2.50	.75	1.25	1.00	1.60	2.75	2.40	1.60	2.50	2.00	1.50	3.00	2.50
11	4	21	14	2.00	2.90	2.40	.50	1.25	1.00	1.50	3.00	2.10	1.25	2.60	2.00	1.25	2.60	2.00
12	8	20	15	1.75	2.25	2.00	.50	.....	.75	1.00	1.80	1.50	1.50	2.40	2.00	1.50	2.75	2.25

The yields of other crops are also based on much smaller acreages in some areas than in others. The acreage of barley is small in the eastern areas when compared with oats while the reverse is true in the northwest.

SIMILARITY IN PRESENT CROP AND LIVE-STOCK ORGANIZATION

The present crop and live-stock organization is of primary importance in selecting type-of-farming areas. It is an indication of the judgment of the farmers who are operating the farms, representing their reaction to all the factors concerned. They may not have consciously analyzed all the factors of the situation, but they certainly have chosen their enterprises on the basis of what seemed most likely to yield the best returns or What seemed most suitable to their inclinations. The organization of the farm enterprise for the different type areas is indicated in figure 25, which shows the distribution of crop and pasture land in per cent of farm area and the number of live stock for each 100 acres of farm land. In the type-of-farming map (fig. 18) the boundaries of some areas coincide with county boundaries, but in others they do not. In both cases the boundaries were determined according to the best judgment of those acquainted with the territory considered. In tabulating the data by areas for the various tables and charts, including figure 25, those data for counties lying partly in one area and partly in another have been placed in the area where they most nearly belonged as a whole. For example, Marshall county, which is partly in Area 4 and partly in Area 8 was included in Area 8 in the computations.

In Area 10 two subareas are shown based mainly upon the fact that subarea A is further developed than subarea B. Subarea B is really transitional between conditions found in Areas 10 and 12. In those counties of the former area showing a low wheat acreage and a relative high pasture acreage the trend of wheat acreage has been so rapidly upward as to indicate that present discrepancies disclosed by the chart will soon be greatly diminished, if not entirely overcome.

It will be seen that a large per cent, of the crop acreage is occupied by corn in Areas 1, 2, 3, 4, and 8; a still larger per cent is occupied by wheat in Areas 6, 7, 10, and 11; and that while pasture is of considerable importance in all areas it is relatively more important in Areas 5, 10, and 12. Hay occupies a significant place in Areas from 1 to 6 but only a small per cent of the crop acreage elsewhere. Oats are of most importance in Areas 1 to 6 and 8 and barley is of most importance in Areas 9 to 12. Grain sorghums are relatively im-

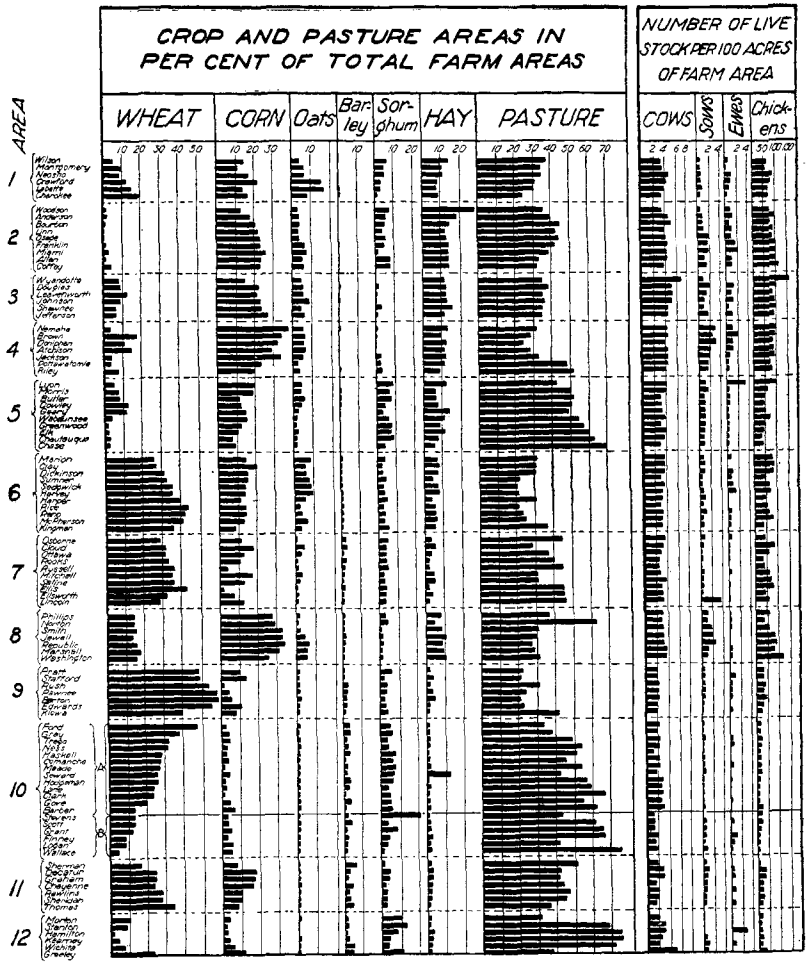


FIG. 25.—Proportion of the farm area in specified crops and number of live stock for each 100 acres of farm land by counties and by type-of-farming areas in Kansas.

Counties similar in the major portion of their enterprises are grouped together. In some areas the enterprises are changing so rapidly that certain counties have progressed further than others in the same area. A study of conditions and potentialities in the more backward counties together with recent trends indicate that such counties should be grouped together despite the apparent discrepancies disclosed by the chart. This situation is illustrated in Area 10.

Source: Adapted from data obtained from 1926 Census of Agriculture.

portant in Areas 1, 2, 5, and 12 and occupy considerable acreages in 6 and 7. They are grown to some extent in all areas.

Live stock are noticeably few in number in all typically wheat areas except 6. Farm enterprises are more equally balanced in Areas 1 and 6 than in others. The conditions in each area may be briefly discussed as follows:

Area 1. In this area the predominance of one crop over all others is not striking. It is a good example of general farming with the emphasis on corn, followed by wheat and hay. Oats and grain sorghums are important. Dairy cows are more important than other classes of live stock. Poultry occupies an important place as a minor enterprise. The greatest handicap in this area is the existence of poor soils. This is partially offset by abundant rainfall and a long growing season. The soil and topography account for the large acreages in hay and pasture which in turn affect the development of live-stock enterprises.

Area 2 is similar to Area 1 in that general farming is followed with corn as the chief crop. Wheat is of minor importance and oats occupy a less conspicuous place than in Area 1. Grain sorghums supplement the corn to a considerable extent. The acreage of hay is large. Dairying is more prominent than in Area 1. Condenseries in both Bourbon and Allen counties furnish a whole-milk market.

Poor soils have been a factor in the development of this area also. Live-stock enterprises are necessary to maintain and improve the soil as well as to utilize hay and pasture. These facts are partly responsible for the development of dairying. Acid soils have retarded the development of legumes. This handicap is being overcome by the use of lime.

Area 3 also follows general farming with the chief emphasis on corn. Wheat is more important than in Area 2 but less important than in Area 1. Grain sorghums are little grown due to the adaptability of corn. The per cent of crop land in hay is not materially different from that in the first two areas, but a much larger per cent of the hay land is in alfalfa. This is the most important whole-milk area in the state. Some butter and butter fat are also sold. Dairying holds first place among live-stock enterprises. There are a large number of small farms which specialize in truck crops. This is not indicated in figure 25. Poultry are important and a considerabie nunlber of hogs are produced.

Practically all this area is in the trade territory of one or more large town.: such as Kansas City, Topeka, Lawrence, or Leaven-

worth. This accounts to a large extent for the development of dairying, more particularly whole-milk production, and for the small truck and fruit farms.

Area 4 is characterized by the importance of corn and hogs, surpassing all other areas of the state in these two enterprises. Both a fertile soil and climatic conditions favor corn production which in turn is largely responsible for the large number of hogs. Corn, so favorable to hog and other live-stock production is well supplemented by a large acreage of alfalfa. Beef cattle are important. On many farms cattle are kept for both beef and milk. Wheat yields well, but under usual conditions cannot compete with corn. Grain sorghums are not grown extensively. Oats are grown as a feed crop. Poultry are important on most farms.

Area 5 constitutes the larger portion of the Blue Stem belt of Kansas. It is the most important grazing section of the state. The native pasture consists of such tall grasses as big and little blue stem, tall grama, and others. Many cattle are shipped in for the grazing season and then sold in the fall off of grass. Some cow herds are kept and some cattle are fed both on pasture and in feed lots. The rolling to hilly topography and shallow, rocky soils render crop production impracticable over large acreages. Corn is an important crop on the good farming land, especially in the bottoms. Grain sorghums are grown to a considerable extent for feed. Only a small acreage of oats is grown.

In Area 6 wheat holds first place. Its growth is fostered not only by soil and climatic conditions but by large acreages of practically level land which renders the use of large-scale equipment practicable. While corn is not so certain a crop as in the northeastern part of the state, due to climatic conditions, it occupies a considerable per cent of the crop land. It is supplemented by grain sorghums, which are better adapted to the lighter rainfall. Oats occupy a higher per cent of the land than in any other area where wheat is so important. Hay is less important than in some other areas, although many farms grow alfalfa. Live stock form a larger part of the farm business in this area than in wheat areas farther west, due to the better adaptability of a variety of feed crops. Butter fat is the chief dairy product, but much whole milk is sold around Wichita and Mulvane. Poultry are important.

In Area 7 wheat is the most important crop, followed in importance by corn. Corn is supplemented by grain sorghums, these crops displacing corn in some of the counties. Oats and barley are grown

as feed crops. Hay crops are not so important, but pasture is more important than in Area 6. Live stock are slightly less important than in Area 6.

In Area 8 corn occupies the largest acreage of any of the crops. A fairly fertile soil and temperatures somewhat lower than regions of the state farther south with equal quantities of rainfall favor corn production. The topography of a large portion of the area is not so well adapted to large equipment as some of the more important wheat areas, as Area 9 for example. Wheat is second in acreage. Hogs and beef cattle do not occupy quite so large a place in the farm business as in Area 4. Grain sorghums usually cannot compete with corn in this area. Oats are grown more frequently than barley. Hay crops occupy only a small acreage and pasture occupies a large acreage.

Area 9 has the largest per cent of the farm area in wheat of any area of the state due in part to the adaptability of wheat and partly to the inadaptabilty of other crops. The large acreages of level land are favorable to the use of large-scale machinery. This is the area where the combined harvester-thresher first became established in Kansas. Corn is grown to a considerable extent in most of these counties, although the yields are from 40 to 50 per cent more variable here than in Area 4, due chiefly to lighter rainfall and higher temperatures. There are portions of Area 9 where the soil is fairly well adapted to corn. Oats and barley are grown in almost equal proportions, but neither is an important crop. Grain sorghums are not so important as corn.

Area 10 has large acreages of wheat, grain sorghums, and pasture. All other crops occupy much smaller acreages. The sandiness of the soil in some counties of this area is the main factor in determining whether wheat or sorghums are grown or whether the land is used for pasture. Hay is not important. The agriculture of some counties of the area has not been developed so far as in others, even where the potentialities are essentially the same. Reference to figures 22 and 23 will show the yields of crops to be low and the variability of combined yields to be high. However, the fact that there are large level tracts of land well suited to large-scale methods of farming makes the development here possible. Improved methods are reducing costs sufficiently to overcome many hazards. Figures 32 and 33 indicate trends and recent developments in this and other areas. The counties bordering on Area 12 are handicapped by a lighter rainfall than the area as a whole.

In Area 11 wheat is the most important crop. Corn is a close second to wheat, which it sometimes exceeds in acreage due to the abandonment of wheat acreage. While the rainfall is light the high altitude reduces evaporation and moderates the temperature, making corn more adaptable than in other sections of Kansas with equal rainfall. A deep. fertile soil of Eolian origin also favors corn. The variability of yields of corn is about twice as great as in Area 4. The short growing season makes the use of the earliest-maturing varieties necessary and accounts for the limited acreage of grain sorghums. Barley is grown more extensively than oats in this area. The relative area of pasture is somewhat less than in Area 10, but sufficient land is in native pasture to make the grazing of beef cattle of importance.

Area 12 is the western grazing region. Pasture occupies the largest per cent of the area Grain sorghums are more dependable than any other crops. Wheat is fairly important in some counties. Some corn and barley are grown. The hazards of crop production are great in Area 12.

CHANGES AND TRENDS IN KANSAS AGRICULTURE

Changing conditions, the development of adapted varieties, the introduction of improved and large-scale machinery, and other factors make the organization of agriculture in an area one of changes and adjustments rather than a constant condition. Some of these changes may be more or less abrupt, but they usually follow some decided trend. To understand the agriculture of an area these trends must be studied.

Changes in Size of Farms.—Figure 26 gives the proportion of all farms in specified size groups according to the United States census figures for 1910, 1920, and 1925. For the state as a whole the larger per cent of the farms falls in the size group from 100 to 174 acres. This group is composed chiefly of 160-acre farms. In the eastern part of the state there is a greater proportion of small farms than in the central and western portion where the tendency toward larger acreages is more definite. In Areas 6 and 7 there was an increase in number of farms from 260 to 499 acres in size. In Areas 9, 10, 11, and 12 there were shifts to the larger sizes in most cases. The very large farms from 1,000 acres and more, however, decreased. The details of these shifts are made more plain by a study of figure 26.

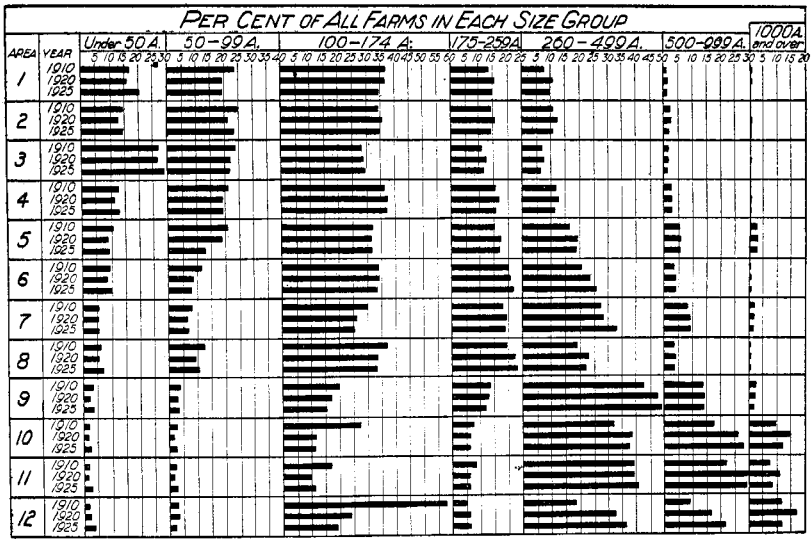


FIG. 26.—Size of farms by type-of-farming areas in Kansas. In general the size of farm increases from east to west. Farms have changed in size more rapidly in the western part of the state, the trend being toward larger farms.

Source: U. S. Censuses for 1910, 1920, and 1925.

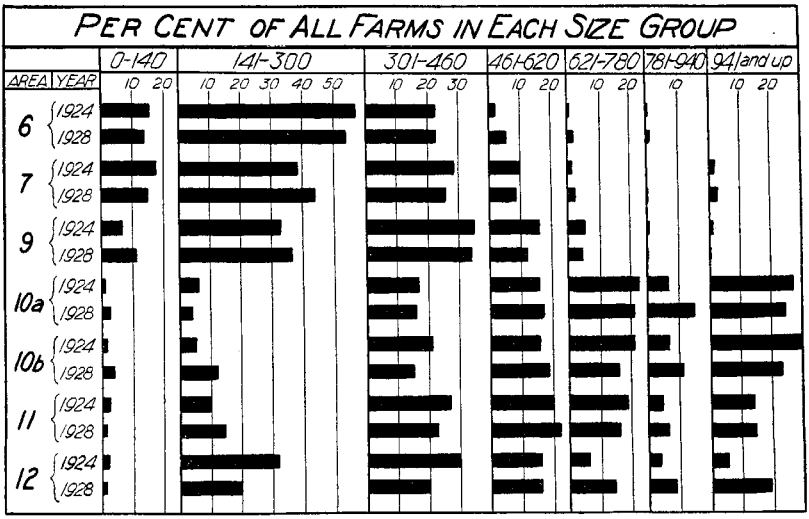


FIG. 27.—Recent changes in sizes of farms in the wheat belt of Kansas. This figure is based on a sample of from 200 to 400 farms taken in representative townships in each area. The most pronounced changes in size have taken place in Areas 10, 11, and 12, where the introduction of large-scale methods has resulted in an increase in the size of the farms.

Source: Assessors' rolls for Kansas counties, 1924, 1928.

Recent Changes in Size of Farms.—As a measure of the changes taking place in size of farms since 1924 recourse was had to data from the State Assessors' rolls. In figure 27 is shown for the years 1924 and 1928 the proportion of farms of different sizes in the various type-of-farming areas in the wheat belt of Kansas. No attempt was made to measure changes in size of farms in the other sections of the state since in these areas the changes have been less apparent.

The introduction of large-scale machinery in the wheat sections

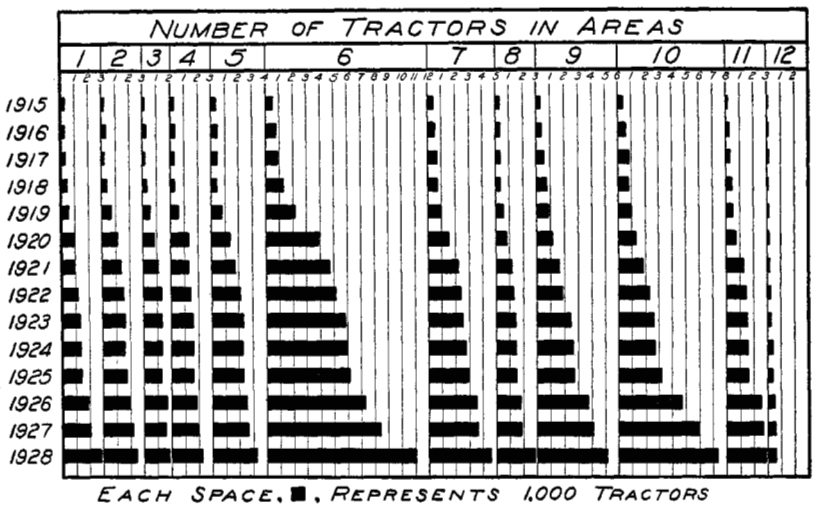


FIG. 28.—Number of tractors in Kansas by type-of-farming areas, 1915 to 1928. The number of tractors has been rapidly increasing in the central and western parts of the state where large-scale farming is practiced.

Source: Biennial Report, Kansas State Board of Agriculture, 1925-1926.

of the state has apparently resulted in some shifts in size of farm. This is particularly true in Areas 10, 11, and 12. In all of these areas there was an increase in the proportion of the farms from 141 to 300 acres, a decrease in those from 301 to 460 acres, and an increase in the farms 781 to 940 acres in size. In Area 10 there was a decrease in the large farms, 941 acres and over, but an increase in Areas 11 and 12 in this size of farms. The nature of the changes in the other sizes of farms both in these and the other areas may be seen by referring directly to figure 27.

Tractors.—One of the outstanding causes of the shifts in sizes of farms has been the introduction of large-scale power machinery.

The tractor and the combined harvester-thresher are the outstanding examples. The rapid increase in the number of tractors is shown in figure 28. As the areas are different in size only the comparisons from year to year in a particular area are significant. Reference

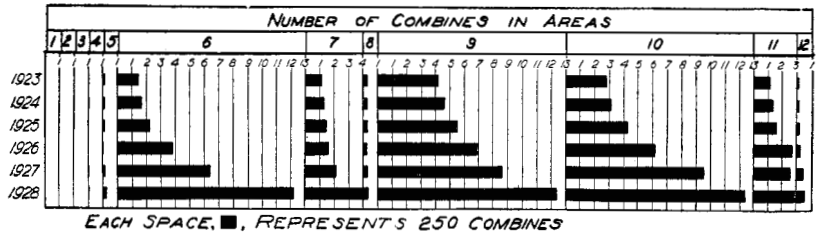


FIG. 29.—Number of combined harvester-threshers by type of farming areas, 1923 to 1928. The largest number of combines as well as the greatest increase in numbers are in areas 6, 9, and 10 where the area devoted to wheat is large and is being expanded.

Source: Biennial Reports, Kansas State Board of Agriculture.

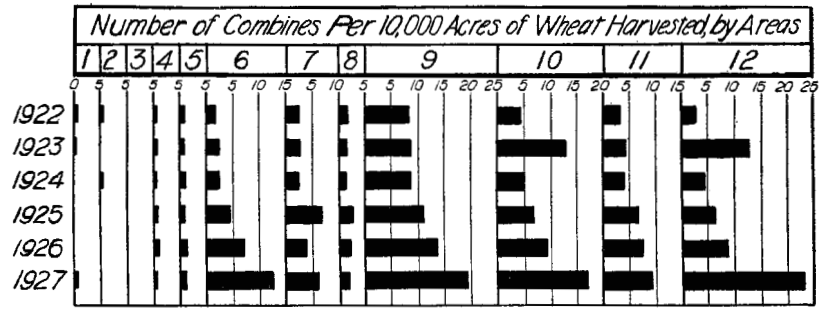


FIG. 30.—Changes in the relative number of combines for each 10,000 acres of wheat harvested in each type-of-farming area, 1922 to 1927. The number of combines on March 1 of each year was assumed to be the number used in the harvest of the preceding year. In considering the changes in number for each 10,000 acres harvested from year to year, account must be taken of the changes in sizes of combines as well as the changes in numbers.

Source: Adapted from data obtained from the Biennial Reports, Kansas State Board of Agriculture.

to figure 25 will show that the greatest increases have been in those areas where wheat is the most important crop. The tractor has made possible the handling of larger acreages with less hired labor.

Combined Harvester-Threshers.—The increase in the use of the combined harvester-thresher has been more spectacular than that of the tractor. While the combine has been one factor in the increase of wheat acreage as well as size of farms there are other contributing factors. The recent trends in wheat acreages are discussed

later. Figure 29 shows the number of combined harvester-threshers in each of the areas. The increase has been largest in Areas 6, 9, and 10 but has also been considerable in 7 and 11. In figure 30 the number of combines for each 10,000 acres of wheat harvested is shown. In this way the areas may be compared as well as the increase from year to year. In Area 9 the combine has been important for the longest time and now has reached the point where the number is sufficient to take care of practically all of the wheat. The relation between the areas showing the greatest increase in tractors and combines and those showing the greatest shifts in size is quite apparent.

Shifts in Crop Organization.—Shifts in crop acreages may be caused by price changes for a particular crop or by other circumstances which give one crop a greater comparative advantage than it had before. Figures 31 and 32 show the shifts which have taken place over a period of 17 years in the type-of-farming areas of Kansas. The charts are on a per cent basis so the relative importance of each crop may be judged. Neither prairie hay nor pasture has been included. The increase in wheat has been partly at the expense of prairie hay and pasture.

The most outstanding feature shown in figures 31 and 32 is the increase in the wheat acreage during the war period. This occurred in each area and usually at the expense of corn and grain sorghums. The reactions after the war have been quite different. In Area 1 the wheat acreage decreased and corn and grain sorghums took its place, but the relative importance of the crop remained greater than before the war period. In Area 2 the relative importance of wheat decreased to about the same as before the war and corn and grain sorghums increased in importance. The reaction was similar but not to the same degree in Areas 3 and 4. In Area 5 wheat has become relatively more important and grain sorghums have decreased in importance. In Area 8 the increase in the wheat acreage during the war period was not so great as in the areas just discussed, but the relative importance of the crop has decreased since that time in a fashion similar to that of other areas.

In central and western Kansas the reaction after the war years was not so great and in many counties there has been a general tendency to expand the wheat acreage. In Areas 6 and 9 the upward trend in the relative importance of wheat is apparent. In these areas the fact that periodic abandonment makes the substitution of other crops necessary renders the trend more difficult to

follow but in general it has been upward. Tame hay has become relatively less important in most of these areas. This tendency is also noticeable in some of the eastern areas.

Figure 33 shows the expansion that has taken place in the

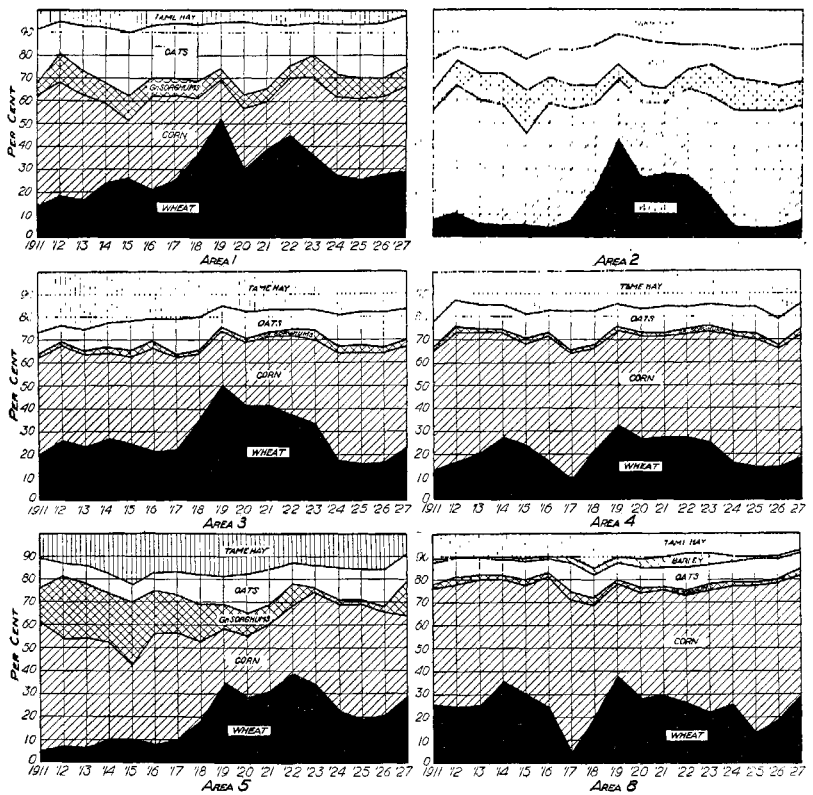


FIG. 31.—Changes in the relative importance of the principal crops by type-of-farming areas in eastern and northeastern Kansas, 1911 to 1927, inclusive. A big increase in wheat acreage accompanied by a decrease in corn acreage occurred in all these areas during the war period. In some of these areas there is still a much larger acreage in wheat than before the war, while in others the acreage is practically the same. Acreages in other crops have remained fairly constant with the exception of a decrease in the acreage of grain sorghums in Area 5.

Source: Adapted from data from the Biennial Reports, Kansas State Board of Agriculture.

cropped land in the wheat-growing sections of Kansas since 1911 In Area 6 the cropped acreage has steadily increased and the additional wheat acreage has absorbed all of the increase in total crop acreage and in addition has crowded out some of the acerage of

other crops. In Areas 7 and 9 the trends have been similar but not so pronounced as in Area 6.

Areas 10, 11, and 12 include the western one-third of the state. This is the newer section where the cropped area has been expanding

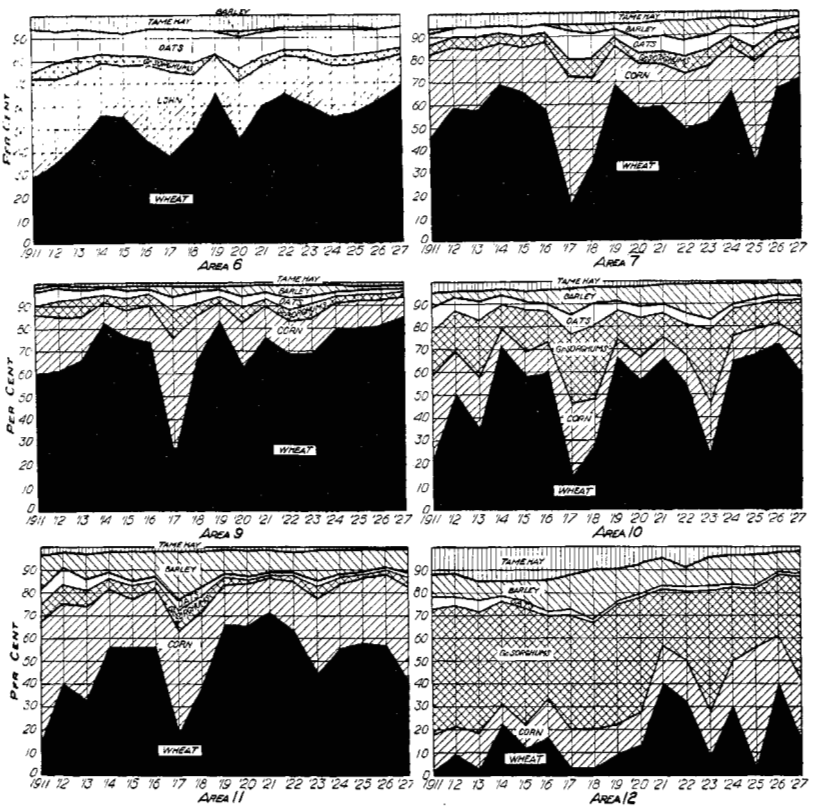


FIG. 32.—Changes in the relative importance of the principal crops by type-of-farming areas in central and western Kansas, 1911 to 1927, inclusive.

An increasing wheat acreage with wide fluctuations from year to year is characteristic of most of these areas. The acreage in corn and grain sorghums increased in years when wheat acreage was reduced. Much of the increase in wheat acreage has been brought about by new land being brought into cultivation.

Source: Adapted from data from the Biennial Reports, Kansas State Board of Agriculture.

rapidly in recent years. In Area 10 the cropped acreage in 1923 was greater than ever before and was more than twice as large as in 1911. Most of the added acreage is accounted for in the increase in the acreage of wheat. In Area 11 the trends have been similar to those for Area 10 excepting that the wheat acreage expanded for

a time but since 1925 it has tended to decline. Variations in weather conditions and the increased importance of corn in this area account in part at least for the reduction in the acreage of wheat harvested. Area 12 is chiefly a grazing region and the cropped acreage is rela-

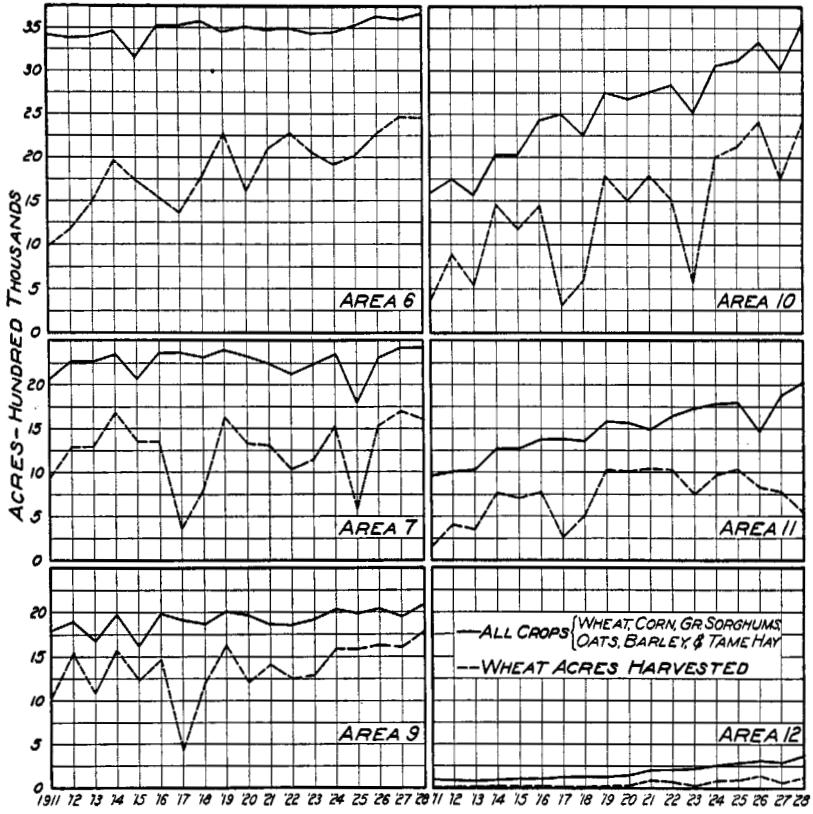


FIG. 33.—Changes in crop acreage and acreage of wheat harvested in Areas 6, 7, 9, 10, 11, and 12.

In Area 6 the trend of the crop area has been upward at a slower rate than the area of wheat harvested. The increase in the wheat acreage has been largely at the expense of corn and grain sorghums. In Area 7 the trend has been less regular. In Area 9 a larger per cent of the crop acreage was in wheat in 1911 than in the other areas shown. The trend of the crop acreage has been gradually upward with wheat becoming more important except when abandonment was a significant factor. The exceptional increase in crop acreage in Area 10 is accounted for almost entirely by the increase in the wheat acreage. In Area 11 the increase in crop acreage has been less rapid than in Area 10. Corn is more important in this area and the acreage has been increasing in recent years. Wheat still predominates in good years for the crop. In Area 12 the per cent increase has been marked but the total acreage is still small.

Source: Biennial Reports, Kansas State Board of Agriculture.

tively small. Wheat is a hazardous crop in this area and the acreage is not large.

Trend in Live-stock Production.—There is sometimes difficulty in distinguishing between the cycles in live stock production and the long-time trends unless a period of sufficient length is taken. In

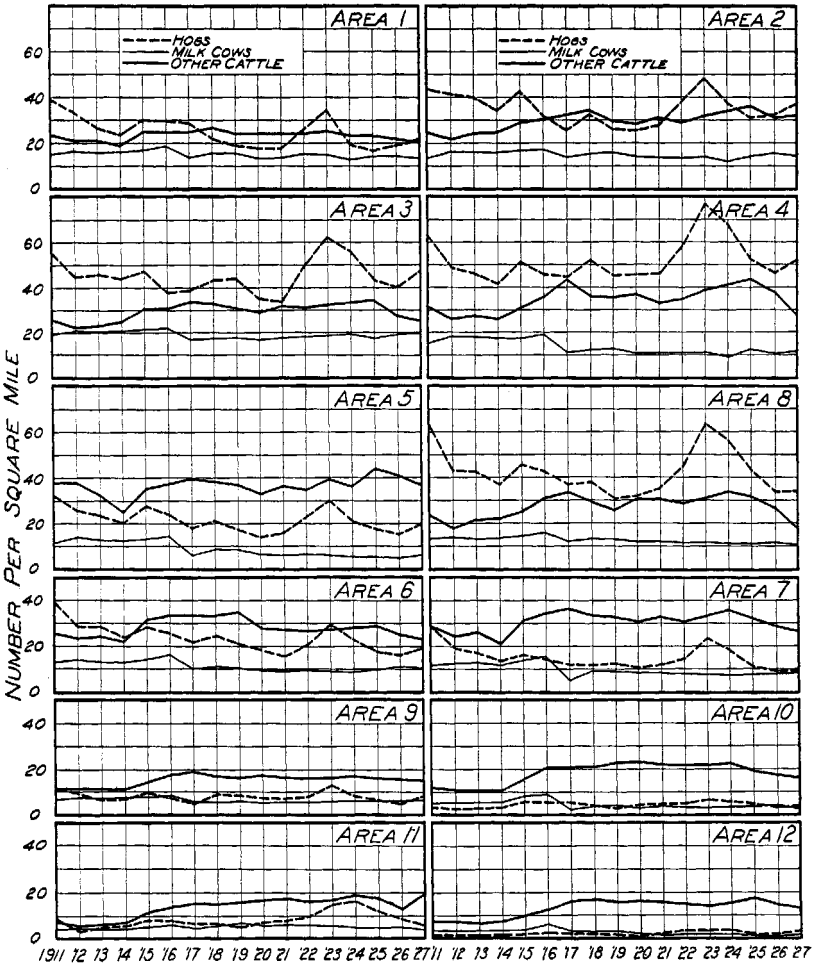


FIG. 34.—Changes in the live-stock population for each square mile by type-of-farming areas in Kansas, 1911 to 1927, inclusive.

The trend in the number of milk cows per square mile has been slightly downward. The changes in the number of hogs and other cattle in response to the production cycle are more apparent than long-time trends.

Source: Adapted from data from the Biennial Reports, Kansas State Board of Agriculture.

the case of hogs a shorter period is necessary than with cattle. Figure 34 shows the live-stock population for each square mile for 17 consecutive years. On this basis areas as well as trends may be compared. Areas 3, 5, and 8 have been the more important in hog production. The cycles are more apparent than the trends. However, in Areas 1, 5, 6, and 7 the trend appears to be slightly downward. Areas 1 to 3 show the greatest number of milk cows. Of the wheat areas No. 6 is the most important in milk cows. In most cases the milk cow population has been either constant or tended downward. For other cattle Areas 4 and 5 seem most important. The figures, as given, fail to show the real importance of beef cattle in Area 5 because many cattle are brought in for grazing purposes in the summer months and are not included in the figures. The pastures of the western part of the state have less carrying capacity than those farther east so that the chart does not indicate the importance of beef cattle in the west. The trend in beef cattle production in Areas 2, 5, 11, and 12 has been generally upward. In Area 9 and 10 the trend has been constant to generally downward since 1916. Areas 3, 4, 6, and 5 show a downward trend in beef cattle production from 1924 or 1925 to 1927.

TYPICAL FARMING SYSTEMS IN THE DIFFERENT TYPE-OF-FARMING AREAS IN KANSAS

FACTORS CAUSING VARIATIONS IN FARMING SYSTEMS IN PARTICULAR AREAS

The previous discussion has been concerned with the determination and description of the types-of-farming areas in Kansas. The location, extent, and limits of the different type areas have been indicated and the principal factors influential in determining them have been discussed. A general description of the crops and live stock found in each area also has been given but in just what various combinations they are found in the different areas or on the same size of farms in each area has not been indicated. In this section it is the aim to present in considerable detail the systems of farming followyed on the various sizes of farms in each type-of-farming area in the state.

Although the organizations and conditions within a particular type area are fairly homogeneous, rather wide variations may be found in specific localities and on individual farms.

Physical Conditions.—In the first place few if any areas of any considerable size are absolutely uniform in soil type, topography, drainage, and the like. In particular communities and on individual

farms conditions often vary quite widely from those throughout the area. Because of this, farmers often find it to their advantage to follow a system of farming which varies considerably from that which is followed by the majority. Local transportation facilities and location with respect to a market are other factors which influence farmers in their choice of a system of farming.

Family Labor.—Another factor causing variations in farming systems in particular areas is the family labor. Farmers with much family labor, other things being equal, are more likely to follow an intensive type of farming than are those who do not have such labor. This is one reason why more dairy cows are found on some wheat farms than on others. By utilizing family labor farmers oftentimes can add profitable supplementary enterprises to their business which might be unprofitable or at least less profitable if labor had to be hired,

Price Sensitiveness.—A third factor causing variations in farming systems in particular areas and which is as important, if not more so, than any yet discussed, is difference in aptitudes. Farmers vary widely in their abilities and reactions. Some feel the acquisitive urge much more keenly than others and will try to take advantage of every opportunity open to them. Such farmers react quickly to price changes and will make rapid adjustments in their production in an attempt to keep in line with market requirements. There are always some farmers in a community who lead the way and are the first to adopt new methods and practices and make changes. There are others who follow along doing about the same thing year after year and lagging from one to several years behind the leaders. These latter farmers are less price sensitive, react more slowly, and are influenced more by custom and tradition. This difference undoubtedly is an important reason for variations in organizations found in many communities.

Tenure.—Conditions of tenure may also cause variations in farming systems from farm to farm in a particular area. A tenant operator does not always have complete freedom of choice of the enterprises. Because of limited possession of the farm he also may not feel justified in making improvements which he otherwise would make were he differently circumstanced.

Available Capital.—Likewise an encumbered title or lack of working capital may account for some of the variations in farming systems. A farmer with a heavy mortgage will be disposed to push

his resources to the utmost of profitableness. He will make rapid shifts in particular or alternative enterprises if he sees a chance to make more money by so doing. An unencumbered owner, on the other hand, is likely to take things more easily. This is particularly true of men who have passed the prime of life. They have already put in their best years and are not so interested in making the farm yield the last possible dollar. They consequently work along in n more leisurely way, not, paying particular attention to whether they are doing the thing which is most profitable.

Despite the tendency toward wide variability in organizations there usually will be found one organization on each size of farm in each area which more farmers follow or approximate than any other. This dominant organization is usually built around the most profitable crop or class of live stock in the area and is the one which determines the type. Before presenting these systems in detail, however, it is desirable to indicate more definitely what they mean, just what they are typical of, what proportions of the farmers follow them, and how they are determined.

METHOD OF DETERMINING TYPICAL FARMING SYSTEMS

The typical farming systems presented later are based on special tabulations of the 1925 census. Approximately 8,000 records were used as a basis for determining the typical organization shown for all the areas in the state. These records were obtained from 66 representative townships in the 12 type-of-farming areas in the state. The number of records obtained in each area varied considerably, depending upon the size of the area and upon its uniformity. From 400 to 1,200 records were obtained in most of the areas and were taken from townships selected to show as nearly as possible the complete range in conditions found,

Since the method of analysis was the same in all of these areas, a description of the procedure followed in one of them will suffice for all the others. For this purpose the records taken from the important corn-producing area of northeastern Kansas (Area 4) are used.

Records of 1,008 farms were taken in representative townships in this area. The organization of each of these farms was first, recorded. The record included the size of farm, acres in pasture and other land, acres in each crop, and number of each class of live stock. The records were then sorted by size of farm. This not only grouped the farms of the same size together but gave a basis for determining the relative frequency of the different sizes. The results of this sorting are shown in Table II.

TABLE II.—DISTRIBUTION OF FARMS BY SIZE IN REPRESENTATIVE TOWNSHIPS IN AREA 4.

SIZE GROUP.	Farms in each size group.	
	Number.	Per cent.
Acres.		
0- 10	70	6.9
11- 30	50	5.0
31- 50	62	6.1
51- 70	25	2.5
71- 90	156	15.5
91-110	63	6.1
111-130	76	7.5
131-150	51	5.0
151-170	229	22.7
171-190	37	3.7
191-210	32	3.2
211-230	15	1.5
231-250	53	5.3
251-270	7	0.7
271-290	15	1.5
291-310	6	0.6
311-330	23	2.3
331 and over	38	3.8
Total	1,008	99.9

The 160-acre farm is the most common size of farm in this area, representing about 23 per cent of the farms of all sizes. The 80-acre farms (71- to 90-acre group) are next in importance. The 120-, 100-, 40-, 240-, and 140-acre farms are about equal in numbers.

With the farms sorted into size groups, the next problem was to determine the prevailing organizations in each size group and to see if there was any tendency for the organizations to vary on the different sizes of farms. Accordingly, the farms in each size-group were sub-sorted, arrayed, and tabulated on the basis of the dominant enterprise in the area. Corn being the most important crop in this area, its acreage was used as the basis for the array. The acreages of the other crops, as well as the number of each class of live stock, were also tabulated and included in the arrayed tables, each line representing the organization of an individual farm.

By this process of sorting, sub-sorting, and arraying, the farms of the same size and organization were thrown together and the typical organizations prevailing on the different (also the same) size of farms determined. Just how the farms of a particular size appear when sorted and arrayed in this way is shown in figure 35. The proportion of the farm area in each crop is shown rather than the actual acreages.

The most outstanding thing about figure 35 is the wide variation in the acreage of the different crops on these farms. This is par-

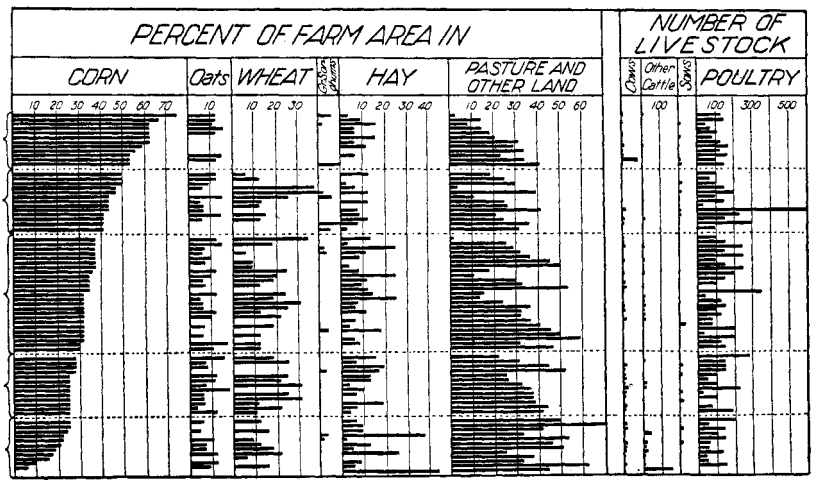


FIG. 35.—Variation in organization of 160-acre farms in a representative area in northeastern Kansas. (Arranged according to the acreage of corn.)

The wide variation in organization on these farms of the same size, producing under essentially the same conditions in the same community, is illustrative of what is generally found on other sizes of farms both in this and other areas. Obviously, an average of the different crops on these farms is not representative of what is found on many of the individual farms. There are groups of these farms, however, in which the organizations are about the same. These groups are indicated. By segregating farms into typical groups in this way an accurate basis for determining the needs of such groups and of appraising the effect of changing economic conditions upon them is secured.

Source: Special tabulations of the 1925 Census of Agriculture.

ticularly true of corn, which is the most important crop grown. Corn occupies from zero to as high as 76 to 80 per cent of the farm area. The other crops also vary quite widely.

It should be remembered that these farms are of the same size, are found in the same community, and have similar soil and climatic conditions. Obviously, there is no such thing as an "average" organization on this size of farm in this area. There is too wide a

range in the different crops to give an average which will be representative of what a large number of the farmers are doing. An arithmetic mean of such a distribution is too much distorted by the extreme items to be trustworthy.

Although there is quite a wide variation in the farms as a whole, closer study of the chart will reveal that the farms actually are grouped around clearly defined centers. Thus starting at the top of figure 35 and going down, there is a small group of the farms which are high in corn acreage, having from 60 to 70 per cent of the farm area in corn. Just below this group there is another which has from 45 to 55 per cent of the farm area in corn; still another with 36 to 40 per cent in corn; a fourth with from 20 to 30 per cent in corn; and finally a few farms having from zero to 12 or 15 per cent in corn. Similarly, the relative importance of the other crops and live stock may be seen by following across and down the figure in a similar manner.

Thus, instead of one average organization for this size of farm, there really are four or five organizations which are distinct enough to be kept separate. The range in the acreage of the different crops in these groups is much narrower and an average of the farms in each group is fairly representative of the individual farms of the group. Instead of taking an arithmetic mean of these groups, however, it is usually better to take a median or mode. This can be done quite accurately by inspection, thus avoiding lengthy computations.

The farming systems resulting from such an analysis are termed typical farming systems. They are typical of what individual groups of farmers on given sizes of farms and in homogeneous type-of-farming areas are doing. An analysis such as this adds greatly to the precision and accuracy with which the farming systems of an area can be described.

Using this method of approach, typical farming systems were determined for the different sizes of farms in this and in other areas in the state. These farming systems are presented in detail in the following pages. For convenience in presentation, the state is divided into five districts, the general farming belt in the eastern part of the state, the corn belt in the northeastern part of the state, the Blue Stem belt in the east central part of the state, the wheat belt of central and western Kansas, and the grazing and wheat belt of the southwest.

TYPICAL FARMING SYSTEMS IN THE GENERAL FARMING REGION OF EASTERN KANSAS

The general farming region of eastern Kansas comprises all of the counties east of the Blue Stem belt extending north to and including Shawnee and Jefferson counties. Although general farming is practiced throughout the region there is enough distinction between the farming systems followed to warrant separating the region into three distinct type of farming areas (1, 2, and 3) as shown in figure 18.

Area 1.—The first of these areas comprises the six counties, Wilson, Neosho, Crawford, Montgomery, Labette, and Cherokee in the extreme southeastern corner of the state. Approximately 830 farm records were taken from five representative townships in this area and used as a basis for the typical farming systems shown in Table III. Farming systems are shown for the most important sizes of farms in the area. The 160-acre farm is by far the most important in size, comprising approximately one-third of the total number of farms. The 80-, 120-, 200-, 240-, and 320-acre farms, respectively, follow in order of importance as determined by their relative number. About 10 per cent of the farms are less than 40 acres in size and, because of their wide variation in both size and organization, no attempt was made to group them.

On the 160-acre farms, four organizations were commonly found, depending principally on the acreage of corn. The most common organization, comprising slightly more than 50 per cent of the farms, had from 15 to 30 acres of corn. Three other organizations followed by 19, 15, and 9 per cent of the farmers, respectively, were also important. The corn acreage on these varied from 32 to 50 acres on the first, to 6 to 14 acres on the second, to no corn at all on the third.

The acreage in oats, wheat grain sorghums, and hay were of about equal importance. The area in pasture, however, varied inversely with the corn acreage, decreasing as the corn acreage increased. The hay was largely wild hay. Some alfalfa was grown on a port of the farms but not on enough to permit showing it separately. Those farmers growing alfalfa usually grew- from 1 to 10 acres. The acreage in flax on the different farms was so variable that a range is shown. The range shown, however, is one of modes rather than actual extremes. In interpreting this range or any other shown either in this or other tables the figures indicate what is most commonly found at either extreme. An average should not be taken

of the two figures but they should be used separately, particularly in working up budgets or in similar uses. More cattle and hogs were found on the farms with the larger corn acreages. Poultry were fairly constant in number.

A similar range in organizations occurred on the other sizes of farms, there being usually one dominant organization which more farmers followed than any other. This organization has been designated as the "most common" on the different sizes of farms in the table. Thus on the 80-acre farms there were four distinct organizations, the most common of which, followed by 39 per cent of the farmers, had from 5 to 12 acres of corn. The nest most, important organization had from 14 to 25 acres of corn and included 30 per cent of the farms; the third organization was found on 12 per cent of the farms and had 21 to 40 acres of corn; and the fourth most common organization included no corn and was found on 19 per cent of the farms. Table III shows the nature of the other crops and live stock handled.

In the farming systems shown in Table III two live-stock organizations are shown for each crop organization. Apparently some farmers keep approximately twice as many live stock as do others with the same crop organization. This means that some men either utilized their crop and pasture area more efficiently than others, depended more upon purchased feeds, sold less of their crops for cash, or followed a combination of two or more of these conditions. In some cases a slightly larger per cent of the hay acreage was in alfalfa on farms which had a larger number of cows or other cattle and in a few instances the acreages in feed grains were slightly larger but the difference was small.

In using these data it should be remembered that they represent the most common occurrence (acreage or number) in a more or lese homogeneous group of farms and do not show the extremes within the group. An attempt has been made to keep the range of the group within narrow limits so that the mode or average will be fairly representative of the various items in the group, Where the feed grains do not balance with the upper range of live stock, this explanation should be kept in mind and either the acreages should be increased or the deficit in feeds made up through purchased feeds. Should the first alternative be used, a range equal to that shown for the crop on which the farms are arrayed in the table could be assumed for each of the feed crops in each typical group. This will take care of most discrepancies which will arise and is most accurate,

TABLE III.—TYPICAL FARMING SYSTEMS IN AREA 1 (EASTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	40-acre farms.	60-acre farms.	80-acre farms.				120-acre farms.			
Typical farming systems	4-14 acres corn most common.	7-15 acres corn most common.	No corn.	5-12 acres corn most common.	14-25 acres corn.	27-40 acres corn.	No corn.	6-12 acres corn.	15-24 acres corn most common.	25-45 acres corn.
Relative frequency of type	*Per cent* 45	*Per cent* 35	*Per cent* 19	*Per cent* 39	*Per cent* 30	*Per cent* 12	*Per cent* 15	*Per cent* 21	*Per cent* 34	*Per cent* 28
All Crops.	*Acres* 22	*Acres* 37	*Acres* 45	*Acres* 42	*Acres* 50	*Acres* 45	*Acres* 70	*Acres* 65	*Acres* 90	*Acres* 75
Corn	10	12	.....	10	20	30	.....	10	20	35
Oats	.....	10	20	10	10	.....	15	10	20	15
Barley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	0–15	0-30	0–18	0–20	.....	20	0–30	0–20	.....
Flax	.....	.....	.....	.....	.....	.....	.....	.....	0–20	0–10
Grain sorghums	5	5	5	5	10	5	10	10	10	8
Tame hay	7	5	5	Alfalfa 4	5	10	25	20	Alfalfa 5	Alfalfa 2
Wild hay	.....	.....	.....	8	.....	.....	.....	.....	15	12
Soy beans or cowpeas	.....	.....	.....	.....	.....	.....	.....	0–5	0–10	.....
Pasture	15	20	30	30	25	30	45	45	25	40
Other land	3	3	5	8	5	5	5	10	5	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	2	4	3	3	3	4	4	4	4	4
Cows	2–5	3–7	0–5	3–7	3–6	5–7	2-8	3–8	4–9	4–8
Cows milked	2–5	4	0–5	2–6	2–5	5	2–6	2-5	4–8	3–6
Other cattle	0–2	1–5	0–8	3–6	2–5	1–7	2–10	2-8	3–8	2-8
Sows	.....	0–1	.....	1	0–3	2	0–2	0–1	1–2	0-3
Sheep	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	50-100	75–100	0–125	50–125	40–100	100–200	150–250	100–200	75–150	100–200

TABLE III.—*Concluded.*

ITEM.	140-acre farms.		160-acre farms.				200-acre farms.	240-acre farms (*b*).	280-acre farms.	320-acre farms.
Typical farming systems	5-13 acres corn.	15-29 acres corn most common.	No corn.	6-14 acres corn.	15-36 acres corn most common.	32-50 acres corn.	20-45 acres corn most common.	30-50 acres corn most common.	10-30 acres corn most common.	32-60 acres corn most common.
Relative frequency of type	*Per cent* 19	*Per cent* 44	*Per cent* 9	*Per cent* 15	*Per cent* 54	*Per cent* 19	*Per cent* 55	*Per cent* 50	*Per cent* 50	*Per cent* 40
All Crops.	*Acres* 76	*Acres* 85	*Acres* 90	*Acres* 100	*Acres* 110	*Acres* 110	*Acres* 125	*Acres* 155	*Acres* 165	*Acres* 180
Corn	8	20	.....	10	25	40	30	40	20	40
Oats	20	20	25	20	25	15	20	20	30	35
Barley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	20	6–25	25	30	25	0–30	30	40	50	35
Flax	.....	0–20	6–15	0–20	0–20	15	.....	0–40	0–20	15
Grain sorghums	8	8	10	15	10	10	10	20	20	15
Tame hay	.....	15	20	15	15	15	30	25	30	40
Wild hay	20	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cowpeas or soy beans	.....	0–6	0–10	0–6	0–10	.....	5	.....	0–10	.....
Pasture	60	45	60	50	45	40	65	75	100	125
Other land	4	10	10	10	5	10	10	10	15	15
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	4	5	5	5	5	5	6	7	7	8
Cows	4–10	4–7	3–7	4–8	5–12	4–12	5–12	5–12	6–12	12–20
Cows milked	5–7	4–7	2–7	3–8	3–8	4–8	4–9	4–10	5–10	7–12
Other cattle	5–10	3–6	3–7	4–8	3–10	4–12	6–12	5–12	3–12	10–25
Sows	0–1	0–2	0–1	0–2	1–3	1–3	1–4	1–3	1–4	2–5
Sheep	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	60–125	75–150	75–150	50–150	75–150	75–150	50–150	100–200	100–150	100–200

(*a*) The farms of less than 40 acres represent 10 per cent; the 40-acre farms, 3 per cent; the 80-acre farms, 11 per cent; the 120-acre farms, 10 per cent; the 140-acre farms, 4 per cent; the 160-acre farms, 31 per cent; the 200-acre farms, 8 per cent; the 240-acre farms, 5 per cent; the 280-acre farms, 4 per cent; and the 320-acre farms, 5 per cent of all farms.

(*b*) Thirty per cent of the 240-acre farms have tractors.

TABLE IV.—TYPICAL FARMING SYSTEMS IN THE SOUTHEASTERN PART OF AREA 2 (EASTERN KANSAS).
(Source: Special tabulations, 1925 Census.)

ITEM (*a*).	40-acre farms.	60-acre farms.	80-acre farms.			100-acre farms.	120-acre farms.	140-acre farms.
Typical farming systems	5-15 acres corn most common.	12-32 acres corn most common.	0-8 acres corn.	10-29 acres corn most common.	30-55 acres corn.	10-30 acres corn most common.	22-35 acres corn most common.	35-50 acres corn most common.
Relative frequency of type	*Per cent* 47	*Per cent* 72	*Per cent* 10	*Per cent* 53	*Per cent* 35	*Per cent* 52	*Per cent* 53	*Per cent* 43
All Crops.	*Acres* 17	*Acres* 38	*Acres* 25	*Acres* 45	*Acres* 55	*Acres* 60	*Acres* 62	*Acres* 79
Corn	10	20	0-8	20	40	25	30	40
Oats	.....	0 10	.....	0-12	.....	10	0-20	0-10
Barley	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	.....	.....	.....	.....	.....	.....	.....
Flax	.....	.....	.....	.....	.....	.....	.....	.....
Sorghum	0-5	6	0 30	10	0 10	5	10	15
Tame hay (*b*)	5	8	0-25	12	10	20	15	25
Wild hay	.....	.....	.....	.....	.....	.....	.....	1
Other crops	20	18	50	30	20	35	50	45
Pasture	3	4	5	5.	5	5	8	6
Other land								
Live Stock.	*Number* 2	*Number* 3	*Number* 3	*Number* 4	*Number* 4	*Number* 4	*Number* 5	*Number* 5
Horses	2 4	3 7	3-6	4 9	3 12	5-12	4-10	5-12
Cows	3	2-6	2 6	2 8	0 10	3-9	3 9	4-10
Cows milked	0-4	1-8	2-6	2-10	3 8	5-12	3-12	3-11
Other cattle	0 1	0-2	0 2	0 3	0 3	0-2	0-4	0-2
Sows	.....	.....	.....	.....	.....	.....	.....	.....
Sheep	50-100	50-150	100-200	75-150	100-200	75-150	75-150	100-260
Poultry								

TABLE IV.—*Concluded.*

ITEM.	160-acre farms.				200-acre farms.	240-acre farms.		280-acre farms.		320-acre farms.	
Typical farming systems	8-20 acres corn.	23-35 acres corn most common.	36-47 acres corn.	50-70 acres corn.	40-65 acres corn most common.	15-35 acres corn.	40-75 acres corn most common.	13-40 acres corn.	45-80 acres corn most common.	26-50 acres corn.	59-100 acres corn most common.
Relative frequency of type	*Per cent* 13	*Per cent* 37	*Per cent* 24	*Per cent* 18	*Per cent* 55	*Per cent* 39	*Per cent* 59	*Per cent* 38	*Per cent* 62	*Per cent* 40	*Per cent* 47
All Crops.	*Acres* 76	*Acres* 80	*Acres* 85	*Acres* 100	*Acres* 105	*Acres* 110	*Acres* 136	*Acres* 125	*Acres* 135	*Acres* 110	*Acres* 150
Corn	16	30	40	60	56	30	60	25	60	35	80
Oats	0–20	10	10	0–25	15	10	15	15	20	15	20
Barley											
Wheat											
Flax		0–15				0–10		0–10			
Sorghum	15	10	10	0–25	10	15	15	15	15	20	15
Tame hay (*b*)	10	10	25	20	10	15	40	65	36	40	35
Wild hay	25	15				20	25				
Other crops											
Pasture	80	76	65	50	85	130	160	140	135	260	160
Other land	5	10	10	10	10	10	10	15	20	16	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	5	6	6	6	7	6	7	5	8	7	7
Cows	5–10	5–12	5–10	5–11	5–10	7–15	5–15	5–12	8–13	5–15	10–25
Cows milked	5–9	5–10	4–9	3–9	4–10	6–12	5–12	5–8	5–8	4–12	6–12
Other cattle	5–10	5–12	5–10	5–11	(*c*) 5–10	5–15	6–15	5–18	14–25	5–25	5–15
Sows	0–3	0–4	0–4	0–5	0–4	0–4	0–6	0–4	0–6	0–4	0–5
Sheep											
Poultry	75–150	100–150	100–175	75–150	75–150	100–200	75–200	160–200	50–150	100–200	160–250

(*a*) The 40-acre farms represent 6 per cent; the 60-acre farms, 3 per cent; the 80-acre farms, 17 per cent; the 100-acre farms, 6 per cent; the 120-acre farms, 9 per cent; the 140-acre farms, 3 per cent; the 160-acre farms, 23 per cent; the 200-acre farms, 7 per cent; the 240-acre farms, 6 per cent; the 280-acre farms, 3 per cent; and the 320-acre farms, 5 per cent of all farms.

(*b*) About 40 per cent of the hay is tame; of this probably three fourths is timothy and clover. Alfalfa is found on some farms ranging usually from 2 to 5 acres.

(*c*) Twenty per cent had 20 or more head of other cattle.

since the range of the different crops in each typical group is usually as wide as that shown for the arrayed crop, except possibly in the case of wheat, for which a range is sometimes shown that is wider than ordinarily found for the feed grains.

Area 2.—The typical farming systems shown in Tables IV and V are for Area *2,* which is the central part of the general farming region of eastern Kansas. These farming systems are typical of Woodson, Allen, Bourbon, Linn, Anderson, Coffey, Osage, Franklin. and Miami counties. Approximately 1,145 farm records were obtained in seven representative townships in this area and used as a basis for the typical farming systems. In order that the range in conditions within the area might be better indicated some of the records were taken from the southeastern part of the area and the others in the north central part. In general, more corn and less pasture is found as one goes from south to north in the area.

In the southeastern part of the area (Table IV) about 23 per cent of the farms are 160 acres in size, 17 per cent are 80 acres, and 9 per cent are 120 acres in size or these three sizes comprise about 50 per cent of all the farms. The relative importance of the other sizes of farms is given in Table IV.

On the 160-acre farms there were four distinct organizations, the chief variation being in the corn acreage which varied on the average from 16 to 60 acres. In the most common organization there was about 30 acres of corn, ranging from 23 to 35 acres. Slightly more than one-third (37 per cent) of the farmers followed this organization. The nature of the other enterprises may be seen by referring directly to the table.

On the 80-acre farms the most common organization had about 20 acres of corn, 0 to 12 acres of oats, 10 acres of grain sorghums, 12 acres of hay, and 35 acres of pasture and other land. About 53 per cent of the farmers on this size of farm followed this organization. There were two other organizations having more and less corn, respectively, one with 30 to 55 acres of corn and the other with from 0 to 8 acres of corn. About 35 and 10 per cent of the farmers, respectively, followed these organizations. With the exception of the pasture, the acreage of the other crops on these farms was about,the same as shown in the most common organization. The pasture area was higher on the organization with the least corn, decreasing as the corn acreage increased.

Similar variations are to be noted on the other sizes of farms, but

rather than laboriously follow them through for each size group the reader is referred directly to the table.

In all of these organizations wheat is absent. This is one of the main differences between the organizations in this area and those shown for Area 1. Also, more cows and other cattle, pasture, and hay were found in this area.

In the north central part of the area these differences were even more accentuated, particularly with respect to the acreage of corn and hay. (Table V.) The live-stock enterprises were not materially different in the two parts of the area. The organizations in the north central part of Area 2 also differed from those in the southeastern part of the same area in that a larger acreage of corn, oats, and hay was found. The nature of this difference may be seen by comparing the typical organizations for the same sizes of farms in the two sub-areas. (Compare Tables IV and V.)

Area 3.—Area 3, comprising Douglas, Johnson, Shawnee, Jefferson, Leavenworth, and Wyandotte counties is the third and last area, found in the general farming region of eastern Kansas. About 1,275 farm records were taken in two representative sub-areas in Area 3. One of these is located in the eastern part around Kansas City and Leavenworth and the other in the north central part of the area..

In Table VI are shown the typical farming systems found in the eastern part of the area. This is an area of small farms, 50 per cent of all the farms being 40 acres or less and 75 per cent being 80 acres or less in size. These are small truck and dairy farms in the vicinity of Kansas City and Leavenworth. As would be expected there was considerable range in the acreages and proportions of the crops grown. The nature of these variations may be determined by referring directly to the table.

On the larger farms corn, oats, and hay were the principal crops. On the 80-acre farms there were four distinct organizations. The corn acreage on these varied from none to as high as 60 acres. The most common organization, followed by about 38 per cent of the farmers, had from 5 to 15 acres of corn. The next most important organization, followed by almost as many farmers (32 per cent) had 16 to 28 acres in corn. Likewise, on the 100-, 120-, 160-, and 200-acre farms there were variations in organizations of a similar nature.

TABLE V.—TYPICAL FARMING SYSTEMS IN NORTHERN PART OF AREA 2 (EASTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	40-acre farms.		80-acre farms.			120-acre farms.	
Typical farming systems	6-12 acres corn most common.	15-30 acres corn.	6-19 acres corn.	20-35 acres corn most common.	36-50 acres corn.	20-35 acres corn.	35-60 acres corn.
Relative frequency of type	*Per cent* 43	*Per cent* 33	*Per cent* 24	*Per cent* 47	*Per cent* 23	*Per cent* 47	*Per cent* 50
All Crops.	*Acres* 22	*Acres* 33	*Acres* 42	*Acres* 62	*Acres* 62	*Acres* 75	*Acres* 80
Corn	9	20	15	30	45	25	45
Oats			10	10	0–10	12	10
Barley							
Wheat							
Flax							
Sorghums	5	0–10	5	7	5	8	5
Tame hay (b)		10	12	15	8	30	20
Wild hay	8						
Other crops							
Pasture	15	6	35	15	15	40	35
Other land	3	1	3	3	3	5	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	2	3	3	4	4	4	5
Cows	2–4	0–5	3–8	3 6	2–5	3–7	3 9
Cows milked	2–3	0–5	3–8	2 5	2–4	3–7	3 7
Other cattle	1–2	0 2	3–12	3 6	2–4	3–8	4–11
Sows		0 2	0–3	0–2	0–3	0–3	0–7
Sheep							
Poultry	150–200	50–150	100–200	100–200	100–150	100–200	100–200

TABLE V.—*Concluded.*

ITEM.	160-acre farms.			200-acre farms.		240-acre farms.	320-acre farms.	
Typical farming systems	12-30 acres corn.	31-50 acres corn most common.	54-75 acres corn.	20-45 acres corn.	50-75 acres corn.	25-65 acres corn most common.	25-44 acres corn most common.	65-160 acres corn.
Relative frequency of type	*Per cent* 33	*Per cent* 43	*Per cent* 24	*Per cent* 50	*Per cent* 50	*Per cent* 100	*Per cent* 47	*Per cent* 53
All Crops.	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Corn	89	100	115	105	135	134	130	165
Oats	22	40	65	25	65	40	35	85
Barley	12	15	20	20	18	14	15	25
Wheat								
Flax								
Sorghums	10	10	5	15	12	30	15	10
Tame hay (*b*)	40	35	25	45	40	50	65	45
Wild hay								
Other crops	6–10							
Pasture	65	55	40	90	60	100	80	145
Other land	6	5	5	5	5	6	10	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	5	6	6	7	6	7	6	8
Cows	3–10	4–10	3–7	5–12	6–15	5–14	7–15	5–25
Cows milked	3–7	3–8	2–6	3–8	5–12	3–8	2–5	2–8
Other cattle	3–12	5–12	1–5	8–20	6–20	5–20	5–20	10–25
Sows	0–9	2–8	0–5	0–6	0–9	0–9	0–6	0–6
Sheep	0–50	0–40				0–50		
Poultry	100–250	100–200	(*c*) 100–150	125–225	150–200	150–300	100–150	150–200

(*a*) The 40-acre farms represent 7 per cent; the 80-acre farms, 23 per cent; the 120-acre farms, 12 per cent; the 160-acre farms, 20 per cent; the 200-acre farms, 9 per cent; the 240-acre farms, 4 per cent; and the 320-acre farms, 6 per cent of all farms.

(*b*) About 60 to 75 per cent of hay is tame and most of this is timothy and clover; alfalfa is also found, usually 2 to 8 acres per farm.

(*c*) Two or three farms had 400 or more head of poultry.

TABLE VI.—TYPICAL FARMING SYSTEMS IN EASTERN PART OF AREA 3 (EASTERN KANSAS).
(Source: Special tabulations, 1925 Census.)

ITEM (a).	5-acre farms.		10-acre farms.	20-acre farms.	40-acre farms.			
Typical farming systems	Small truck farms most common.		Around cities most common.	Most common.	No corn.	3-6 acres corn.	7-14 acres corn most common.	15-20 acres corn.
Relative frequency of type	*Per cent* 47	*Per cent* 53	*Per cent* 100	*Per cent* 79	*Per cent* 26	*Per cent* 22	*Per cent* 39	*Per cent* 19
All Crops.	*Acres* 3	*Acres* 3	*Acres* 5	*Acres* 15	*Acres* 12	*Acres* 17	*Acres* 26	*Acres* 29
Corn	.....	1½	6-4	5-10	.....	5	10	18
Oats	.....	.....	.....	0 5	.....	6-5	0-10	0-10
Barley	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	.....	.....	.....	.....	.....	.....	.....
Flax	.....	.....	.....	.....	.....	.....	.....	.....
Grain sorghums	0-3	½	0-3	Alfalfa3 8	10	5	8	6
Tame hay	1	½	0-2	0-2	0-3	½	1	0-4
Wild hay	0-2	.....	0-3	.....	.....	1	6-2	.....
Potatoes	½-2	.....	0-1	.....	.....	0-2	.....	.....
Vegetables	.....	.....	0-2	0-2	0-4	0-5	1	0-2
Strawberries	0-1	0-3	0-6	4	25	20	12	8
Other crops	1	1	.....	1	3	3	2	3
Pasture								
Other land								
Live Stock.	*Number* 1	*Number* 1	*Number* 1-2	*Number* 1-2	*Number* 2	*Number* 2	*Number* 2	*Number* 2
Horses	1	1	0-3	1-4	5-15	1-4	2-6	2-4
Cows	1	1	0 3	1-3	3-12	1-4	1-4	2-4
Cows milked	0-1	0-1	0-2	1-3	3-8	1-2	0-3	1-4
Other cattle	.....	.....	.....	0-1	.....	.....	0-1	0-1
Sows	.....	.....	.....	.....	.....	.....	.....	.....
Sheep	25-75	20-50	25-75	75-200	50-75	50-125	60-125	75-100
Poultry								

TABLE VI.—*Concluded.*

ITEM.	60-acre farms.	80-acre farms.				100-acre farms.	120-acre farms.	160-acre farms.	200-acre farms.
Typical farming systems	5-15 acres corn most common.	No corn.	5-15 acres corn most common.	16-28 acres corn.	30-60 acres corn.	10-25 acres corn most common.	10-25 acres corn most common.	10-25 acres corn most common.	20-45 acres corn most common.
Relative frequency of type	*Per cent* 45	*Per cent* 15	*Per cent* 38	*Per cent* 32	*Per cent* 15	*Per cent* 62	*Per cent* 63	*Per cent* 53	*Per cent* 81
All Crops.	*Acres* 37	*Acres* 40	*Acres* 52	*Acres* 57	*Acres* 65	*Acres* 70	*Acres* 75	*Acres* 95	*Acres* 95
Corn	10	.....	10	20	45	20	20	20	30
Oats	10	.....	8	10	10	0-20	10	10	15
Barley	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	.....	0-40	0-40	0-40	.....	30	25	40	0-60
Flax	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grain sorghums	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tame hay Wild hay	12	30	10	15	10	15	20	25	20
Potatoes	1	.....	(*b*)	1	.....	.....	.....	.....	.....
Vegetables	.....	.....	.....	.....	.....	.....	.....	.....	.....
Strawberries	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other crops	0.5	.....	2	.....	.....	.....	.....	.....	.....
Pasture	20	35	25	20	12	25	40	60	100
Other land	3	5	5	3	3	5	5	5	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	2	3	4	4	4	4	5	5	6
Cows	(*c*) 1-5	3-7	(*d*) 2-10	3-12	1-3	3-9	4-15	(*e*) 3-12	12-30
Cows milked	1-5	1-6	1-10	2-10	0-3	2-8	4-12	2-10	8-25
Other cattle	1-5	3-7	1-10	1-8	0-5	1-10	4-8	2-8	5-12
Sows	0-2	.....	0-2	0-2	0-3	0-3	0-3	0-2	0-2
Sheep	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	50-125	40-75	50-150	50-125	50-150	50-150	50-100	100-150	80-125

(*a*) The 5-acre farms represent 7 per cent; the 10-acre farms, 14 per cent; the 20-acre farms, 16 per cent; the 40-acre farms, 13 per cent; the 60-acre farms, 6 per cent; the 80-acre farms, 14 per cent; the 100-acre farms, 4 per cent; the 120-acre farms, 6 per cent; the 160-acre farms, 12 per cent; and the 200-acre farms, 4 per cent of all farms.

(*b*) Potatoes are not usual but some farms have as high as 60 acres.

(*c*) Fifteen per cent have 15 or more cows.

(*d*) Twelve per cent have 20 cows or more.

(*e*) One-fourth of the farms have 15 or more cows.

TABLE VII—TYPICAL FARMING SYSTEMS IN THE NORTH CENTRAL PART OF AREA 3 (EASTERN KANSAS).
(Source: Special tabulations, 1925 Census.)

ITEM (a).	40-acre farms.	80-acre farms.			100-acre farms.	120-acre farms.		
Typical farming systems	5-18 acres corn most common.	0-9 acres corn.	10-30 acres corn most common.	35-65 acres corn.	35-60 acres corn most common.	10-30 acres corn.	34-50 acres corn.	66-100 acres corn.
Relative frequency of type	*Per cent* 49	*Per cent* 17	*Per cent* 63	*Per cent* 20	*Per cent* 45	*Per cent* 41	*Per cent* 39	*Per cent* 16
All Crops.	*Acres* 20	*Acres* 37	*Acres* 52	*Acres* 60	*Acres* 82	*Acres* 75	*Acres* 87	*Acres* 95
Corn	10	5	20	45	50	25	45	70
Oats	5	5	5	10	12	10	15	15
Barley								
Wheat		0–30	0–30			20	0–25	
Flax								
Sorghum		2	2		5	2	0–5	
Tame hay Wild hay	5	15	15	5	15	18	15	10
Other crops								
Pasture	18	40	25	15	15	40	30	20
Other land	2	3	3	5	3	5	3	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	2	3	4	4	4	4	5	5
Cows	1–6	2–8	3–10	3–7	3–8	5–12	4–8	4–7
Cows milked	1–4	2–7	2–7	2–6	3–7	5–10	2–6	1–5
Other cattle	0–4	3–5	2–7	3–6	2–6	3–8	4–8	3–6
Sows	0–2	0–2	0–3	0–4	0–6	0–3	0–5	0–6
Sheep								
Poultry	50–150	100–200	75–200	100–150	100–200	100–200	125–250	100–200

TABLE VII.—*Concluded.*

ITEM.	160-acre farms.			260-acre farms.			240-acre farms.	320-acre farms.
Typical farming systems	10-30 acres corn.	32-50 acres corn most common.	55-85 acres corn.	16-40 acres corn.	45-75 acres corn most common.	80-120 acres corn.	45-65 acres corn most common.	55-85 acres corn most common.
Relative frequency of type	Per cent 33	Per cent 44	Per cent 23	Per cent 40	Per cent 45	Per cent 15	Per cent 36	Per cent 47
All Crops.	Acres 85	Acres 105	Acres 112	Acres 105	Acres 120	Acres 145	Acres 160	Acres 193
Corn	20	40	70	30	65	95	55	75
Oats	10	20	20	20	20	30	20	35
Barley								
Wheat	30	18	0–20	30	10		40	40
Flax								
Sorghum		2	2					3
Tame hay Wild hay	25	25	15	25	25	20	45	40
Other crops								
Pasture	65	50	45	85	75	50	70	120
Other land	10	5	3	10	5	5	10	7
Live Stock.	Number	Number	Number	Number	Number	Number	Number	Number
Horses	5	6	6	7	8	9	8	8
Cows	8–16	5–15	3–12	6–12	6–14	3–10	3–10	3–12
Cows milked	5–13	3–10	3–9	4–10	3–10	2–8	2–8	2–8
Other cattle	5–15	5–10	3–10	6–12	5–25	3–10	(b) 5–15	(c) 7–15
Sows	0–6	2–10	1–9	0–6	0–7	2–8	3–7	3–10
Sheep								
Poultry	50–150	75–175	100–200	50–150	100–200	150–250	150–200	75–100

(*a*) The 40-acre farms represent 6 per cent; the 80-acre farms, 21 per cent; the 100-acre farms, 8 per cent; the 120-acre farms, 11 per cent; the 160-acre farms, 23 per cent; the 200-acre farms, 10 per cent; the 240-acre farms, 6 per cent; and the 320-acre farms, 3 per cent of all farms.

(*b*) Three farms, or 20 per cent, run 75 or more other cattle.

(*c*) One-fourth of the farmers have 50 or more other cattle.

In the north central part of Area 3 the size of farms was much larger, as shown in Table VII. The 80-, 120-, 160- and 200-acre farms were the most common sizes, representing, respectively, 21, 11, 23, and 10 per cent of all farms.

On the 160-acre farms there were three common organizations, one with 10 to 30 acres of corn, a second with 32 to 50 acres of corn, and a third with 55 to 85 acres of corn. About 33, 44, and 23 per cent, respectively, of the 160-acre farms had these Organizations. On the 200-acre farms there were three organizations with 16 to 44, 45 to 75, and 80 to 120 acres of corn, respectively. The nature of the other crops and live stock handled may be seen by referring to Table VII.

Similar variations were to be observed on the 240- and 320-acre farms as well as on the smaller sizes.

TYPICAL FARMING SYSTEMS IN THE CORN BELT OF SOUTHEASTERN KANSAS

The region designated as the "corn belt" comprises Areas 4 and 8 and includes Riley, Pottawatomie, Jackson, Atchison, Doniphan, Brown, Nemaha, and Marshall counties in the northeastern corner of the state and in addition the first tier of counties running along the northern border of the state as far west as Norton county. This is the heavy corn-producing region of the state. There is enough variation within the region to justify separating it into the two distinct type-of-farming areas. The acreage in corn is not materially different in the two areas but more beef cattle and hogs and less wheat are found in Area 4 than in Area 8.

Area 4.—Approximately 1,000 farm records were taken in representative townships in Area 4 and used as a basis for the typical farming systems shown in Table VIII. The 160-acre farm was the most important size, comprising almost one-fourth (23 per cent) of all farms. The 80-acre farm was next in importance with 15 per cent,, followed by the 120-, 200-, and 240-acre sizes, each having 7 per cent of all farms. Each of the other sizes of farms comprised less than 5 per cent of the total.

On the 160-acre farms there were five distinct organizations, the chief difference being in the acreage of corn. Thus the corn acreage was from 10 to 30 acres on the first, 31 to 50 on the second, 51 to 70 acres on the third, 71 to 95 acres on the fourth, and 96 to 120 acres on the fifth. Of these five organizations the one having 51 to 70 acres of corn was the most common. This organization was found on two of every five farms of this size. Slightly more than one-

fourth (27 per cent) of the farms followed the organization having 31 to 50 acres of corn.

The other enterprises on these farms did not vary a great deal from organization to organization. The pasture acreage varied inversely with the corn acreage, decreasing as the corn increased.

On the 80-acre farms there were similar variations in organization, the chief variation being again in corn acreage. There were four common organizations, in which the corn acreage was about 15, 25, 40, and 55 acres, respectively. The organization with 25 acres of corn was most common, about 38 per cent of the farms having approximately this acreage.

There were similar variations on the other sizes of farms. The nature of these variations may be seen by referring directly to Table VIII.

Area 8.—Approximately 550 farm records were obtained in Area 8 for determining the typical farming systems shown in Tables IX and X. To show the variations within the area effectively, it was deemed advisable to keep the organizations in the eastern part of the area separate from those in the west. While the area as a whole is characterized as a corn-belt type of farming, in the western part wheat is found in larger acreages than in the eastern part.

In the eastern part of the area the 160-acre farm was the most common size, comprising between one-fourth and one-third of all farms. The 320-, 200-, 220-, and 240-acre farms rank in the order given.

The most common organization on the 160-acre farms included about 50 acres of corn and 25 acres of wheat. Thirty-seven per cent of the farms followed this plan. There were two other important organizations. One of these had 25 acres of corn and 40 acres of wheat and the other 90 acres of corn and no wheat. The wheat and pasture acreages varied closely with the corn acreage, increasing as it decreased and decreasing as it increased.

On the 320-acre farms there were two organizations commonly found. These were of about equal importance as determined by the relative number of farmers following each. One of these organizations had 60 acres of corn and 90 acres of wheat and the other 115 acres of corn and 65 acres of wheat. The nature of the other enterprises may be determined from Table IX. Similar variations in organizations existed on the other sizes of farms.

In the western part of the area (Table X) more wheat was grown than in the eastern part. On the 320-acre farms there were three

TABLE VIII.—TYPICAL FARMING SYSTEMS IN AREA 4 (EASTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	5-acre farms.	20-acre farms.	40-acre farms.	60-acre farms.	80-acre farms.				100-acre farms.	120-acre farms.	
Typical farming systems	Most common.	Most common.	20-40 acres corn most common.	21-50 acres corn most common.	10-19 acres corn.	20-33 acres corn most common.	35-45 acres corn.	47-65 acres corn.	38-65 acres corn most common.	35-48 acres corn most common.	50-80 acres corn.
Relative frequency of type	*Per cent*	*Per cent*	*Per cent* 39	*Per cent* 52	*Per cent* 16	*Per cent* 38	*Per cent* 27	*Per cent* 18	*Per cent* 52	*Per cent* 39	*Per cent* 38
All Crops.	*Acres* 2½	*Acres* 14	*Acres* 35	*Acres* 45	*Acres* 45	*Acres* 58	*Acres* 60	*Acres* 65	*Acres* 78	*Acres* 87	*Acres* 95
Corn	0–2	4–10	35	35	15	25	40	55	50	40	60
Oats				0–10	10	0–10	0–10		10	10	10
Barley											
Wheat				0–10	0–20	0–20			0–20	20	0–20
Flax											
Grain sorghums						0–10	0–5	2		2	
Tame hay	0–3	2–5		5	15	15	15	Alfalfa 8	8	15	15
Wild hay											
Other crops	0–1										
Pasture	0–3	3–10	4	15	30	20	15	12	20	30	25
Other land	0–1	0–2			5	2	5	3	2	3	
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	0–1	2	3	3	4	4	5	4	5	5	5
Cows	1–2	0–2	0–5	2–5	5–10	3–8	3–8	2–5	4–10	4–11	3–7
Cows milked	1–2	0–2	0–3	2–5	3–8	2–6	2–6	1–4	3–7	3–8	1–6
Other cattle	0–2	0–1	0–5	0–5	4–12	3–16	2–7	0–3	2–8	2–16	2–10
Sows	0–1	0–2	0–3	3	2–5	0–3	0–5	0–3	2–6	0–10	0–6
Sheep											
Poultry	50–100	50–100	50–150	75–125	75–200	80–200	100–200	75–150	100–250	100–200	100–200

TABLE VIII.—*Concluded.*

ITEM.	140-acre farms.	160-acre farms.					200-acre farms.	240-acre farms.	280-acre farms.	320-acre farms.
Typical farming systems	50-80 acres corn most common.	10-30 acres corn.	31-50 acres corn.	51-70 acres corn most common.	71-95 acres corn.	95-120 acres corn.	51-80 acres corn most common.	40-70 acres corn most common.	60-80 acres corn most common.	75-110 acres corn most common.
Relative frequency of type	*Per cent* 51	*Per cent* 6	*Per cent* 27	*Per cent* 41	*Per cent* 14	*Per cent* 9	*Per cent* 46	*Per cent* 46	*Per cent* 42	*Per cent* 39
All Crops.	*Acres* 105	*Acres* 70	*Acres* 115	*Acres* 115	*Acres* 130	*Acres* 137	*Acres* 130	*Acres* 150	*Acres* 185	*Acres* 196
Corn	65	20	40	60	80	100	65	60	70	90
Oats	15	10	15	10	15	20	15	20	25	25
Barley										
Wheat	0-40	30	40	30	0-30		25	45	60	45
Flax										
Grain sorghums						0-10	2			
Tame hay Wild hay	15	10	Alfalfa 10 10	Alfalfa 5 10	Alfalfa 10 10	Alfalfa 8 7	Alfalfa 8 15	Alfalfa 15 10	30	Alfalfa 20 10
Other crops										
Pasture	30	85	40	40	25	20	65	80	80	120
Other land	5	5	5	5	5	3	5	10	15	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	6	5	6	6	7	7	7	8	8	8
Cows	3-10	5-11	5-15	5-15	4-12	3-7	4-12	7-20	8-20	4-14
Cows milked	2-8	3-9	2-8	3-10	2-8	2-5	2-8	3-8	4-8	4-8
Other cattle	3-10	8-15	5-14	4-12	4-10	1-5	3-10	4-20	6-18	8-25
Sows	0-5	0-6	2-10	0-10	0-8	0-6	0-10	0-15	3-12	4-10
Sheep										
Poultry	125-250	50-150	75-150	100-200	100-200	75-150	100-200	125-200	100-250	100-200

(*a*) The 5-acre farms represent 5 per cent; the 20-acre farms, 4 per cent; the 40-acre farms, 6 per cent; the 60-acre farms, 3 per cent; the 80-acre farms, 15 per cent; the 100-acre farms, 6 per cent; the 120-acre farms, 7 per cent; the 140-acre farms, 5 per cent; the 160-acre farms, 23 per cent; the 200-acre farms, 7 per cent; the 240-acre farms, 6 per cent; the 280-acre farms, 3 per cent; and the 320-acre farms, 3 per cent of all farms.

TABLE IX.—TYPICAL FARMING SYSTEMS IN EASTERN PART OF AREA 8 (NORTHERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	80-acre farms.		120-acre farms.	160-acre farms.			200-acre farms.	220-acre farms.	240-acre farms.	260-acre farms.	320-acre farms.	
Typical farming systems	10-20 acres corn most common.	35-60 acres corn.	30-55 acres corn most common.	20-35 acres corn.	40-60 acres corn.	70-165 acres corn.	45-75 acres corn most common.	40-80 acres corn most common.	35-70 acres corn most common.	50-100acres corn most common.	40-70 acres corn.	90-140 acres corn.
Relative frequency of type	*Per cent* 53	*Per cent* 47	*Per cent* 81	*Per cent* 37	*Per cent* 37	*Per cent* 26	*Per cent* 90	*Per cent* 77	*Per cent* 83	*Per cent* 92	*Per cent* 40	*Per cent* 38
All Crops.	*Acres* 47	*Acres* 55	*Acres* 50	*Acres* 100	*Acres* 115	*Acres* 130	*Acres* 145	*Acres* 160	*Acres* 155	*Acres* 170	*Acres* 217	*Acres* 250
Corn	17	50	45	25	50	90	55	60	60	75	60	115
Oats	10	.....	10	12	15	20	15	20	20	20	30	40
Barley	.....	.....	.....	.....	.....	.....	.....	0 10	.....	.....	.....	.....
Wheat	0 20	.....	15	40	25	.....	40	35	45	50	90	65
Grain sorghums	5	3	5	5	10	5	5	5	5	5	7	5
Tame hay	(b) 5	(b) 0–5	(b) 15	(c) 18	(b) 15	(b) 15	(c) 30	(d) 35	(b) 25	(b) 20	(b) 30	(b) 25
Wild hay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other crops	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pasture	25	20	25	55	40	25	45	55	75	70	90	60
Other land	8	5	5	5	5	5	10	7	10	10	13	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	3	3	4	5	6	7	6	7	7	7	8	7
Cows	4-8	2–6	4–8	5–10	6–10	2–8	4–8	6–10	4–10	6–15	3–12	(e) 3–10
Cows milked	2-4	1–3	3–6	4–7	4–8	2–6	3–7	3–7	3 8	6–10	2–11	2–8
Other cattle	3–10	1–4	3–11	4–9	6–15	2–8	4–10	7–12	6–15	6–16	10–20	(e) 1–6
Sows	0–3	0–2	3–5	0–6	1–6	0–4	1–6	2–6	2–6	0–6	0 7	2–8
Sheep	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	100 200	75–150	150–300	125–200	100 250	100–200	100–200	100–200	100–250	100–250	150–300	100–300
Per cent having tractors	12	15	8	14	10	.....	.....	8	15	30	33	50

(a) The 80-acre farms represent 7 per cent; the 120-acre farms, 7 per cent; the 160-acre farms, 27 per cent; the 200-acre farms, 9 per cent; the 220-acre farms, 8 per cent; the 240-acre farms, 9 per cent; the 260-acre farms, 6 per cent; and the 320-acre farms, 12 per cent of all farms.

(b) Mostly alfalfa.

(c) About one-half alfalfa.

(d) Two-thirds alfalfa.

(e) One-third have approximately 20 head.

organizations, one of which had 125 acres of wheat, another with 80 acres, and a third with 60 acres as compared with 90 and 65 acres of wheat on the two organizations found on the same size of farm in the eastern part of the area. While practically as much corn was grown in the western as in the eastern part of the area there was less oats. More sorghums and pasture were found in the west, however.

There were similar differences, although not quite so pronounced on the other sizes of farms. For the nature of these differences the reader is referred directly to Table X.

TYPICAL FARMING SYSTEMS IN THE BLUE STEM GRAZING AREA

Area 5.—The Blue Stem grazing area (Area 5) comprises from 10 to 12 counties in the central and southern portions of eastern Kansas. This is an area of uneven topography. Much of the land is too rough for cultivation and is in native pasture.

Approximately 500,000 cattle are shipped in and out of the area annually. These cattle come principally from Texas and other southern and western states. The movement into the region usually begins in March and April and is about over by May 15. The movement out starts in July and continues through August, September. October, and November. Some cattle are held over the winter. however, and finished on grass the following season.

The prevailing practice is for the owners of the grass to enter into a contractual arrangement with the owners of the cattle whereby they agree to graze the cattle and contribute such other services in caring for them as may be mutually agreed upon at a stipulated charge for each animal. This charge varies with the age of the cattle and with the services performed by the owners of the grass. Considerable income is derived by the owners of the grass from these grazing leases and it becomes a valuable adjunct to the income from other sources. Before one can fully understand the farming systems in this area he must understand the prevailing grazing practices.

Unfortunately the typical farming systems for this area presented in Table XI do not reflect these grazing practices, since they do not show the number of cattle on grass. The farming systems are based on United States census data for January 1, 1925, which is before the movement of cattle into the area begins and after the out movement ceases in the fall. This limitation must be kept in mind when considering the data.

TABLE X.—TYPICAL FARMING SYSTEMS IN WESTERN PART OF AREA 8 (NORTHERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	80-acre farms (b).			120-acre farms.	160-acre farms.			200-acre farms.	
Typical farming systems	No corn.	20-35 acres corn.	40-80 acres corn.	30-65 acres corn most common.	19-40 acres corn.	45-70 acres corn most common.	75-125 acres corn.	35-65 acres corn.	75-120 acres corn.
Relative frequency of type	*Per cent* 33	*Per cent* 33	*Per cent* 34	*Per cent* 57	*Per cent* 21	*Per cent* 44	*Per cent* 25	*Per cent* 47	*Per cent* 50
All Crops.	*Acres* 35–80	*Acres* 45–80	*Acres* 62	*Acres* 75	*Acres* 100	*Acres* 105	*Acres* 115	*Acres* 135	*Acres* 120
Corn		25	60	45	30	60	90	60	95
Oats									0 10
Barley									
Wheat	0–80	25		20	50	25	0–30	50	
Grain sorghums	6–8	0–10		0–6	5	10	5	10	16
Tame hay	5	12	2	0–20	(c) 15	(c) 10	(c) 10	(c) 15	(c) 15
Wild hay									
Other crops									
Pasture	0–40	6–30	15	35	50	50	40	55	66
Other land	5	5	3	10	10	5	5	10	15
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	3	3	3	4	5	6	6	6	6
Cows	0–4	2–7	1–5	2–8	0–7	(d) 4–9	3–7	5–11	5–7
Cows milked	0–4	0–5	0–5	3–5	0–5	3–7	3–6	4–8	3–6
Other cattle	0–3	0–8	0–2	3–7	0–8	(g) 4–12	0–4	4–11	4–6
Sows	0–2	0–3		0–2	0–4	0–4	0–4	0 3	0–6
Sheep									
Poultry	0–200	50–150	0–100	100–200	100–150	100–260	100–250	100–200	150–300
Per cent having tractors					15	4	15	6	12

TABLE X.—*Concluded.*

ITEM.	240-acre farms.		280-acre farms.		320-acre farms.			480-acre farms.
Typical farming systems	30-65 acres corn.	70-115 acres corn.	60-88 acres corn.	90-146 acres corn.	30-65 acres corn.	70-110 acres corn most common.	130-180 acres corn.	95-156 acres corn most common.
Relative frequency of type	*Per cent* 48	*Per cent* 52	*Per cent* 53	*Per cent* 47	*Per cent* 25	*Per cent* 47	*Per cent* 24	*Per cent* 96
All Crops.	*Acres* 155	*Acres* 160	*Acres* 185	*Acres* 210	*Acres* 210	*Acres* 205	*Acres* 245	*Acres* 250
Corn	55	95	75	130	50	85	150	125
Oats			15					
Barley							0-16	0-26
Wheat	65	40	75	60	125	80	60	0-165
Grain sorghums	10	10	5	10	10	15	15	0-26
Tame hay	(*e*) 25	(*g*) 15	(*g*) 15	(*c*) 10	(*g*) 25	(*c*) 25	(*c*) 15	(*c*) 15
Wild hay								
Other crops								
Pasture	75	76	85	60	166	105	65	180
Other land	10	10	10	10	10	10	10	16
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	6	7	6	6	7	8	8	9
Cows	5-9	3-13	5-12	(*h*) 5-8	5-11	5-10	4-10	(*l*) 7-15
Cows milked	3-8	2-8	4-8	4-6	3-10	3-8	2-8	3-10
Other cattle	6-9	3-13	5-12	2-6	7-15	(*i*) 3-9	(*j*) 8-15	9-15
Sows	1-3	2-8	2-5	1-5	2-6	2-7	(*k*) 2-6	6-12
Sheep								
Poultry	100-200	100-250	125-250	100-200	125-250	100-200	100-200	150-250
Per cent having tractors	12	10	33		33	15	8	33

(*a*) The 80-acre farms represent 14 per cent; the 120-acre farms, 4 per cent; the 160-acre farms, 17 per cent; the 200-acre farms, 11 per cent; the 240-acre farms, 13 per cent; the 280-acre farms, 6 per cent; the 320-acre farms, 17 per cent; and the 480-acre farms, 2 per cent of all farms.
(*b*) About 10 per cent of the farms are less than 80 acres.
(*c*) Mostly alfalfa.
(*d*) Twelve per cent had 25 head or more.
(*e*) Forty per cent alfalfa.
(*f*) Fifteen per cent had approximately 20 head.
(*g*) One-half alfalfa.
(*h*) One-fourth had 15 head or more.
(*i*) Fifteen per cent had approximately 25 head.
(*j*) One-third had 20 head or more.
(*k*) One-fourth had 15 head.
(*l*) One-third had approximately 30 head.

TABLE XI.—TYPICAL FARMING SYSTEMS IN THE BLUE STEM BELT OF KANSAS, AREA 5.
(Source: Special tabulations, 1925 Census.)

ITEM (a).	40-acre farms.	80-acre farms.	120-acre farms.	160-acre farms.					200-acre farms.
Typical farming systems	25-35 acres in crops most common.	30-50 acres in crops most common.	96-100 acres in crops most common.	30-50 acres in crops.	51-70 acres in crops.	71-90 acres in crops most common.	91-110 acres in crops.	111-130 acres in crops.	111-150 acres in crops most common.
Relative frequency of type	*Per cent* 60	*Per cent* 39	*Per cent* 20	*Per cent* 12	*Per cent* 15	*Per cent* 28	*Per cent* 25	*Per cent* 13	*Per cent* 36
All Crops.	*Acres* 30	*Acres* 40	*Acres* 100	*Acres* 40	*Acres* 60	*Acres* 80	*Acres* 100	*Acres* 120	*Acres* 130
Corn	15	20	55	20	30	40	45	50	50
Oats								5	
Barley								20	35
Wheat								20	20
Grain sorghums	6–15	10	20	15	15	20	25		
Flax									
Tame hay	10	(b) 10	(b) 25	(b) 5	(b) 15	(b) 10	(e) 30	(e) 25	(e) 25
Wild hay						10			
Other crops									
Pasture	0–10	35	20	115	90	70	50	30	70
Other land	3	5		5	10	10	10	10	
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	3	3	5	4	5	5	6	6	6
Cows	2–4	2–6	2–4	1–7	2–8	2–6	3–6	2–4	3 6
Cows milked	2 3	3–4	1–3	1–5	2–4	2–4	2–4	2–4	2–3
Other cattle	2–5	0–5	3 5	0–9	5–18	2–10	(c) 3–11	(d) 2–4	(f) 3 7
Sows	1	0–2	2 5	1–2	2–4	2–4	2–4	2–5	3–6
Sheep									
Poultry	40–150	50–100	100–200	100–150	100–200	100–200	100–200	100–200	160–250

TABLE XI.—*Continued.*

ITEM.	240-acre farms.				320-acre farms.				480-acre farms.
Typical farming systems	50-80 acres in crops most common.	81-110 acres in crops.	115-145 acres in crops.	150-190 acres in crops.	30-80 acres in crops.	81-120 acres in crops most common.	125-160 acres in crops.	161-200 acres in crops.	70-130 acres in crops most common.
Relative frequency of type	*Per cent* 30	*Per cent* 26	*Per cent* 26	*Per cent* 17	*Per cent* 23	*Per cent* 37	*Per cent* 21	*Per cent* 8	*Per cent* 45
All Crops.	*Acres* 65	*Acres* 100	*Acres* 125	*Acres* 160	*Acres* 60	*Acres* 100	*Acres* 140	*Acres* 180	*Acres* 100
Corn	35	50	60	50	30	50	60	80	60
Oats	5			10		10	20	15	
Barley									
Wheat		0–20	0–15	30				20	
Grain sorghums	10	20	30	20	15	15	20	20	0–20
Flax	15								
Tame hay Wild hay		20	25	50	15	25	40	45	30
Other crops									
Pasture	165	130	{115	70	250	{220	{180	{140	370
Other land	10	10		10	10				10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	6	6	7	8	7	8	8	8	8
Cows	5–10	5–7	5–8	6–8	(*g*) 4–8	(*g*) 3–10	10–20	5–10	(*g*) 3–8
Cows milked	2–4	3–5	2–5	4–6	3–7	3–5	3–8	2–7	1–5
Other cattle	6–18	(*g*) 2–5	(*g*) 3–12	(*g*) 9–11	(*g*) 7–11	(*h*) 8–20	(*i*) 9–25	(*g*) 6–15	30–60
Sows	2–4	2–5	2–5	3–6	2–4	2–4	2–5	3–6	3–4
Sheep									
Poultry	100–150	150–200	100–200	125–200	50–200	150–250	100–250	150–300	100–200

TABLE XI.—*Concluded.*

ITEM.	540-acre farms.		640-acre farms.		840-acre farms.			1280-acre farms.		4000-6000 acre farms.
Typical farming systems	75-118 acres in crops.	170-250 acres in crops most common.	70-130 acres in crops most common.	160-230 acres in crops.	80-130 acres in crops.	135-180 acres in crops.	200-290 acres in crops.	40-120 acres in crops.	130-220 acres in crops.	0-200 acres in crops.
Relative frequency of type	*Per cent* 37	*Per cent* 42	*Per cent* 40	*Per cent* 25	*Per cent* 25	*Per cent* 25	*Per cent* 28	*Per cent* 35	*Per cent* 43	*Per cent* 75
All Crops.	*Acres* 90	*Acres* 200	*Acres* 100	*Acres* 260	*Acres* 105	*Acres* 150	*Acres* 245	*Acres* 90	*Acres* 160	*Acres* 0-200
Corn	40	70	50	75	50	60	100	30	60	0-60
Oats		20		0-20		10	10		15	
Barley										
Wheat		35		0-70			20			
Grain sorghums	20	25	30	25	15	25	30	15	25	0-40
Flax										
Tame hay	(*b*) 30	50	(*b*) 20	60	40	55	85	45	60	0-100
Wild hay										
Other crops										
Pasture	450	340	530	{440	{735	{690	{765	{1190	{1120	{3800-6000
Other land										
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	8	9	10	10	10	12	12	12	15	12
Cows	20-40	25-40	12-20	15-20	25-60	6-20	9-50	10-15	(*l*) 2-10	5-25
Cows milked	2-3	3-5	4-6	3-5	3-4	3-4	3-5	3-6	2-4	2-4
Other cattle	20-40	25-40	25-50	(*j*) 6-20	30-75	50-125	35-125	(*k*) 10-20	(*m*) 50-150	300-1000
Sows	0-4	2-6	2-5	6-8	3-9	0-5	0-10	0-10	0-5	0-2
Sheep										
Poultry	100-200	200-300	100-200	150-275	200-400	50-150	200-400	100-200	100-200	40-100

(*a*) The 40-acre farms represent 3 per cent; the 80-acre farms, 11 per cent; the 120-acre farms, 11 per cent; the 160-acre farms, 22 per cent; the 200-acre farms, 7 per cent; the 240-acre farms, 5 per cent; the 320-acre farms, 15 per cent; the 480-acre farms, 4 per cent; the 640-acre farms, 4 per cent; the 840-acre farms, 4 per cent; the 1,280-acre farms, 2 per cent; and the 4,000-6,000 acre farms, 1 per cent of all farms.

(*b*) Mostly alfalfa.

(*c*) Fifteen per cent have 30 or more other cattle.

(*d*) Fifteen per cent have 30 head or more.

(*e*) About 50 per cent of the hay is tame and that is mostly alfalfa.

(*f*) Twelve per cent have 160 head or more.

(*g*) One-fourth have 20 head or more.

(*h*) Twenty-five per cent have 30 head or more.

(*i*) One-third have more than 25, running as high as 125 head.

(*j*) Ten per cent have 150 head or more.

(*k*) A few farms have 125 to 200 head.

(*l*) Twenty per cent have 60 head or more.

(*m*) Forty per cent have 1 to 4 head.

Four to six acres of pasture for each head of cattle are usually furnished, the average being 4.5 to 5 acres. Using these figures, a rough estimate can be made of the probable number of cattle grazed on the farms when the acreage of pasture is known.

Records were obtained from approximately 935 farms in representative townships in the Blue Stem belt and used as the basis for the farming systems shown in Table XI. As would be expected, a wide range in size of farm was found in this area. The 160-acre farm was the most common, comprising 22 per cent of farms of all sizes. Of the others the 80-, 120-, 200-, and 320-acre farms were next in importance. Large farms of 1,000 acres or more comprise only from 1 to 3 per cent of the number of all farms.

The farms of the different sizes were arrayed on the basis of their total acreage in crops, which is essentially the same distribution as would have been obtained had pasture been used as a basis, except that the order would be reversed. The farms with large pastures had low crop acreages and *vice versa.* Corn and hay acreages varied more widely than any other crops. Pasture varied inversely with them.

Table XI shows the prevailing organizations on the different sizes of farms in this area. On the smaller farms the live stock were about sufficient to take care of the pasture. It is on the larger farms that leasing is practiced. Yet even on some of these farms it will be noted that fairly large cow herds as well as of other cattle were kept.

TYPICAL FARMING SYSTEMS IN THE WHEAT BELT OF CENTRAL AND WESTERN KANSAS

The wheat belt includes Areas 6, 7, 9, 10, and 11 or practically the entire region west of the Blue Stem belt excepting a narrow strip along the northern boundary of the state from Norton county east and a small group of counties in the southwest. Although wheat is the dominant crop throughout this region, it is grown with greater or lesser intensity in local areas and on this basis the region is divided into five type-of-farming areas.

Area 6.—Approximately 575 records mere taken from representative townships in Area 6 and used as a basis for the typical farming systems shown in Table XII. The 160-, 220-, 240-, and the 320-acre farms were the most important sizes of farm in this area. Others comprise only approximately 5 per cent of all farms. The 160-acre farm was the most common size, comprising about 30 per cent of all farms.

In this area since wheat is the dominant crop the farms were arrayed on the basis of the acreage in this crop. Wider variations in acreage of this crop were found both on farms of the same and of different sizes than of any other crop. Thus on the 160-acre farms there were five distinct organizations having respectively none, 40 60, 80, 100, and 120 acres of wheat. On these same farms the corn acreage varied from 10 to 60 acres and the pasture from 12 to 80 acres. As the wheat acreage increased the corn and pasture acreages decreased and *vice versa.* The nature of the other crops and live stock in the different organizations may be seen by referring to Table XII.

On the 240-acre farms about two of every five farms followed an organization having 100 acres of wheat, 50 acres of corn, 15 acres of oats, 10 acres of sorghum, 15 acres of hay, and 40 acres of pasture. There were two other organizations with more and less, respectively, wheat, corn, and pasture. One, followed by one-fourth of the farmers, had 50 acres of wheat, 75 acres of corn, and 70 acres of pasture. The other, followed by one-third of the farmers, had 160 acres of Wheat and only 20 acres of corn and 20 acres of pasture.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 6.—Inasmuch as the farming systems shown for Area 6 in Table XII are based on census data for the crop year 1924, it is important to determine what changes, if any, have taken place since that time in order to ascertain how accurately these farming systems typify present organizations in the area. For this purpose data showing the size and organization of farms in representative townships were taken from the assessors' rolls. They are presented graphically in figure 36.

It is apparent from an examination of figure 27 that farms in this area have changed but little in size from 1924 to 1928. There was a slightly larger proportion of the farms 461 to 620 acres in size in 1928 than in 1924 but the difference was not great.

There has been a marked change in organization, however, as shown in the acreages of wheat for selected size of farms in representative townships. (See fig. 36.) Wheat is the predominant crop of the area and changes in its acreage reflect changes in the organization.

On the 160-acre farms (141-to 200-acre group) in 1924, about 80 per cent of the farmers had 100 acres or less in wheat, 61 to 100 acres being the most common acreage grown. In 1928, in this same group, only 49 per cent had 100 acres or less in wheat while 51 per

cent had more than this acreage. The most common acreage varied from 81 to 120 acres, or about 20 acres more than was grown in 1924. It will be necessary consequently to step up the wheat acreage shown in Table XII for the most common organizations about 20 acres in order that the organization be representative of present conditions in the area. This increase in the wheat acreage came at the expense of the corn and grain sorghum acreage which should be decreased by the same amount.

On the 740-acre farms (221- to 300-acre group) about 89 per cent had 160 acres or less of their farm area in wheat in 1924. the most

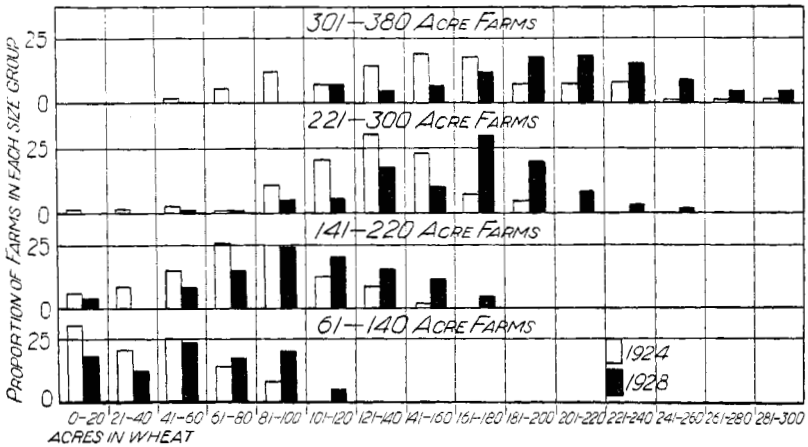


FIG. 36.—Proportion of farms of different sizes in Area 6 with specified acres of wheat in 1924 and 1928. There has been an upward shift in the acreage of wheat in this area since 1924, as indicated by an increase in the proportion of the farms having the larger acreages of wheat.

Source: Adapted from data from assessors' rolls of Kansas counties.

conmon acreage being from 120 to 140 acres. In 1928, only 38 per cent had 160 acres or less in wheat while 62 per cent had more, the most common acreage being 161 to 180 acres, or an increase of about 40 acres. If the organizations shown in Table XI1 are to be representative of present conditions the acreages of wheat must be increased. About, 10 per cent of the farmers had 41 to 120 acres of their farm area in wheat in 1928; 28 per cent had 121 to 160 acres; 50 per cent had 161 to 200 acres; and the remainder had 200 acres and more.

On the 320-acre farms (301- to 380-acre group) similar changes in the wheat acreage occurred. In 1924, 77 per cent of the farms had 180 acres or less in wheat while in 1928 only 30 per cent of

TABLE XII.—TYPICAL FARMING SYSTEMS IN AREA 6 (CENTRAL KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (*a*).	80-acre farms.	160-acre farms.						220-acre farms.
Typical farming systems	20-40 acres in wheat most common.	No wheat.	30-50 acres in wheat most common.	51-70 acres in wheat.	71-90 acres in wheat.	91-110 acres.	111-130 acres in wheat.	100-135 acres in wheat most common.
Relative frequency of type	*Per cent* 33	*Per cent* 6	*Per cent* 23	*Per cent* 20	*Per cent* 11	*Per cent* 17	*Per cent* 10	*Per cent* 38
All Crops.	*Acres* 65	*Acres* 70	*Acres* 105	*Acres* 115	*Acres* 120	*Acres* 130	*Acres* 143	*Acres* 180
Corn	20	60	40	30	15	10	10	30
Oats	5	.....	5	10	15	15	10	20
Barley	.....	.....	.....	.....	.....	.....	.....	.....
Wheat	30	.....	40	60	80	100	120	115
Grain sorghums	.....	.....	.....	5	5	.....	3	0-15
Tame hay (*b*)	10	10	20	10	5	5	.....	10
Wild hay	.....	.....	.....	.....	.....	.....	.....	.....
Other crops	.....	.....	.....	.....	.....	.....	.....	.....
Pasture	10	80	45	40	35	25	12	35
Other land	5	10	10	5	5	5	5	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	4	4	5	5	6	6	6	(*f*) 7
Cows (*h*)	2 4	2 4	2-8	3 4	3-7	2 5	1 3	3-7
Cows milked	2-4	2-4	2-5	2 4	3-5	2 4	1 3	2-5
Other cattle	0-3	4-6	(*e*) 4-8	3 8	4-7	2 5	2 3	(*e*) 4-5
Sows	.....	.....	.....	2 4	0-1	0 2	0 1	0-3
Sheep	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	50-150	40-150	100 200	50-200	100-200	100 200	100 150	100-150

TABLE XII.—*Concluded.*

ITEM.	240-acre farms.			280-acre farms.	320-acre farms.				400-acre farms.	480-acre farms.
Typical farming systems	35-65 acres in wheat.	70-125 acres in wheat most common.	140-200 acres in wheat.	47-85 acres in wheat most common.	35-65 acres in wheat.	80-120 acres in wheat.	140-180 acres in wheat.	185-240 acres in wheat most common.	100-150 acres in wheat most common.	220-acres in wheat most common.
Relative frequency of type	*Per cent* 25	*Per cent* 42	*Per cent* 33	*Per cent* 41	*Per cent* 8	*Per cent* 23	*Per cent* 25	*Per cent* 32	*Per cent* 33	*Per cent* 50
All Crops.	*Acres* 160	*Acres* 190	*Acres* 220	*Acres* 130	*Acres* 135	*Acres* 210	*Acres* 245	*Acres* 275	*Acres* 230	*Acres* 350
Corn	75	50	20	45	50	65	40	25	65	55
Oats	15	15	20	10	5	10	20	20	10	20
Barley										
Wheat	50	100	160	60	55	100	160	220	130	240
Grain sorghums	0-10	10	0-10	0 10	5	0 20	10	0-10	5 30	25
Tame hay (*b*)	15	15	10	10	20	{25	15	0-10	10	0-20
Wild hay										
Other crops										
Pasture	70	40	20	140	180	105	65	40	150	{130
Other land	10	10	5	10	5	5	10	5	20	
Live Stock.										
Horses	*Number* (*f*) 6	*Number* (*f*) 7	*Number* (*f*) 7	*Number* (*g*) 7	*Number* (*f*) 8	*Number* (*g*) 9	*Number* (*g*) 10	*Number* (*f*) 10	*Number* (*g*) 10	*Number* (*f*) 12
Cows (*h*)	2-6	3-7	2-6	3-6	2-10	2-10	4-10	4-7	6-15	5-8
Cows milked	2-5	2-5	2-4	2-4	1-4	1-4	3 8	3-5	4-6	4-5
Other cattle	(*d*) 15-35	(*e*) 2-8	2-4	10-50	15-50	(*d*) 10-20	3-8	3-7	10-35	7 15
Sows	0-2	0-4		1-4	0-5	0-10	1-2	0-3	0-4	0-4
Sheep										
Poultry	100-250	100-200	75-150	100-200	100 150	150 200	100 200	100-150	100 250	100 200

(*a*) The 80-acre farms represent 6 per cent; the 160-acre farms, 30 per cent; the 200-acre farms, 10 per cent; the 240-acre farms, 15 per cent; the 280-acre farms, 6 per cent; the 320-acre farms, 14 per cent; the 400-acre farms, 5 per cent; and the 480-acre farms, 2 per cent of all farms.
(*b*) Largely alfalfa.
(*c*) Approximately 40 per cent have 30 head or more.
(*d*) Fifteen per cent have 50 head or more.
(*e*) Ten per cent have 20 head or more.
(*f*) Fifty per cent or more have tractors.
(*g*) One-third have tractors.
(*h*) Cattle are mostly listed as beef; there are a few strictly dairy herds.

the same farms had this acreage or less, and 70 per cent had more. Thus there apparently has been an upward shift of about 60 acres in wheat as judged by the difference between the acreages for the modal groups in the two years, About 18 per cent of the 320-acre farms had from 100 to 160 acres in wheat in 1928; 49 per cent from 161 to 220 acres; and 33 per cent had 221 acres and more. On all of this size of farms the increase in the acreage of wheat has come at the expense of corn and grain sorghums, and in adjusting the organizations based on 1924 census shown in Table XII the acreage in these replaced enterprises must be adjusted downward.

Area 7.—Records of 323 farms were taken in selected townships in Area 7 and used as a basis for the typical farming systems shown in Table XIII. The 160- and 320-acre farms were the most important sizes, comprising 17 and 15 per cent, respectively of the farms of all sizes. The 240-acre farms were next in importance with 12 per cent of the farms, followed by the others each of which had 5 per cent or less of all farms.

On the 160-acre farms approximately two of every five had 63 acres in wheat, 25 acres in corn, 10 acres in oats, 8 acres of grain sorghums, and 45 acres of pasture and other land. There were two other organizations frequently found. One of these had 40 acres of wheat, 30 acres of corn, 10 acres of oats and grain sorghums, and 65 acres of pasture and other land, while the other had 95 acres of wheat, 20 acres of corn. 5 acres of oats, 10 acres of grain sorghums, and 30 acres of pasture and other land. Approximately 28 per cent of the farmers followed the first and 16 per cent the second of these organizations.

On the 320-acre farms similar variations were found. The greatest variation took place in the wheat acreage. Of the four organizations on this size of farm the one having 90 acres of wheat was the most common. The other three had 40, 130, and 185 acres of wheat, respectively. As the wheat acreage increased the pasture acreage decreased. There was not a great deal of variation in the other enterprises on these farms.

There were similar variations on the other sizes of farms. The nature of these may be ascertained by referring directly to Table XIII.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 7.—Changes which haw taken place in the size of farms in Area 7 since 1924 are shown in figure 27. There was a slightly smaller proportion of the farms of less than 140 acres in 1928 and

a somewhat larger proportion of the 141- to 300-acre farms for the same period, otherwise there was practically no change.

In figure 37 are shown the proportion of farms of selected sizes with varying acreages of wheat. Although this chart clearly indicates that there has been no pronounced shift in the acreage of

FIG. 37.—Proportion of farms of different sizes in Area 7 with specified acres of wheat in 1924 and 1928. This chart clearly indicates there was no pronounced change in the acreage of wheat in this area from 1924 to 1928.
Source: Adapted from data from assessors' rolls of Kansas counties.

wheat in this area, there nevertheless has been a slight increase on some of the farms. On the 320-acre farms (301- to 380-acre group), 88 per cent had 160 acres or less in wheat in 1924; in 1928 only 80 per cent of these farms had this acreage or less of wheat, the other 20 per cent having more. Likewise on the 221- to 300-acre farms, 90 per cent had 160 acres or less of wheat in 1924 while

TABLE XIII.—TYPICAL FARMING SYSTEMS IN AREA 7 (CENTRAL KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (*a*).	80-acre farms.		140 acre farms.	160-acre farms.			200-acre farms.	
Typical farming systems	20-40 acres in wheat.	50-80 acres in wheat most common.	40-80 acres in wheat most common.	25-50 acres in wheat.	55-80 acres in wheat most common.	82-130 acres in wheat.	40-70 acres in wheat most common.	85-130 acres in wheat.
Relative frequency of type	*Per cent* 33	*Per cent* 42	*Per cent* 53	*Per cent* 28	*Per cent* 43	*Per cent* 16	*Per cent* 50	*Per cent* 33
All Crops.	*Acres* 60	*Acres* 75	*Acres* 100	*Acres* 95	*Acres* 115	*Acres* 130	*Acres* 115	*Acres* 165
Corn	12	0–10	17	30	25	20	35	30
Oats	3	.....	3	10	10	5	10	10
Barley								
Wheat	30	70	65	40	65	95	55	120
Grain sorghums	10	0–15	10	10	8	10	10	5
Tame hay (*b*)	5	.....	5	5	0–15	.....	5	.....
Wild hay								
Other crops								
Pasture	15	5	35	60	40	30	75	25
Other land	5	.....	5	5	5		10	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	4	4	5	5	6	5	6	7
Cows	3 6	0–4	3–8	4–10	5–12	2 8	5–10	3 5
Cows milked	3 5	0–3	2–6	2–6	3 7	2 5	3–7	3–4
Other cattle	3–10	0–1	3–7	(*c*) 3 8	4 9	2 8	5–11	2 5
Sows	0–3	.....	.....	0 1	0 1	.....	0–4	0 3
Sheep								
Poultry	50–100	0–150	100–250	100 200	100 150	60 175	100–200	100 200
Per cent having tractors								

TABLE XIII.—*Continued.*

ITEM.	240-acre farms.			280-acre farms.		320-acre farms.			
Typical farming systems	35-70 acres in wheat.	75-110 acres in wheat most common.	120-160 acres in wheat.	40-70 acres in wheat most common.	80-125 acres in wheat.	30-60 acres in wheat.	70-115 acres in wheat most common.	120-150 acres in wheat.	170-200 acres in wheat.
Relative frequency of type	*Per cent* 26	*Per cent* 32	*Per cent* 19	*Per cent* 36	*Per cent* 32	*Per cent* 24	*Per cent* 34	*Per cent* 20	*Per cent* 14
All Crops.	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Corn	115	155	195	115	205	125	180	215	255
Oats	35	35	25	40	50	50	45	50	40
Barley	5	15	10	.....	10	10	20	5	10
Wheat	50	90	140	60	100	40	90	130	185
Grain sorghums	15	10	10	10	25	15	15	15	15
Tame hay (*b*)	10	5	10	5	20	10	10	15	5
Wild hay									
Other crops									
Pasture	115	80	40	155	65	185	130	95	60
Other land	10	5	5	10	10	10	10	10	5
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	8	8	8	7	8	8	8	8	10
Cows	10-13	5-12	5-10	4-10	5-9	(*e*) 5-15	6-15	6-12	3-10
Cows milked	3-8	3-7	3-6	2-6	2-6	3-6	3-10	3-8	6-14
Other cattle	6-15	5-12	5-10	7-15	(*d*) 2-5	(*f*) 10-30	10-18	(*g*) 5-15	5-12
Sows	0-2	1-3	0-1	0-4	0-1	0-1	1-2	0-2	0-2
Sheep									
Poultry	100-150	150-300	100-200	100-200	100-200	150-200	125-250	100-200	150-300
Per cent having tractors				25			12	10	40

TABLE XIII.—*Concluded.*

ITEM.	400-acre farms.			480-acre farms.		560-acre farms.		640-acre farms.
Typical farming systems	42-80 acres in wheat most common.	100-160 acres in wheat.	190-250 acres in wheat.	50-120 acres in wheat most common.	175-260 acres in wheat.	50-110 acres in wheat most common.	115-200 acres in wheat.	130-260 acres in wheat.
Relative frequency of type	*Per cent* 37	*Per cent* 33	*Per cent* 25	*Per cent* 40	*Per cent* 37	*Per cent* 46	*Per cent* 40	*Per cent*
All Crops.	*Acres* 145	*Acres* 250	*Acres* 310	*Acres* 180	*Acres* 325	*Acres* 220	*Acres* 285	*Acres* 220–415
Corn	50	70	50	65	65	75	75	60–120
Oats	10	10	10	10	20	25	20	10–25
Barley								
Wheat	60	145	225	80	225	80	145	130–260
Grain sorghums	20	17	10	15	15	20	25	15–35
Tame hay (*b*)	5	8	15	10		20	20	0–25
Wild hay								
Other crops								
Pasture	240	130	80	280	140	330	275	215–396
Other land	15	20	10	20	15	10	15	10–25
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	7	9	10	10	11	10	12	7–14
Cows	4–10	4–12	2–9	10–30	6–10	5–12	15–50	15–30
Cows milked	4–8	3–7	1–5	5–12	5–7	2–6	6–15	3–13
Other cattle	(*h*) 13–30	10–25	2–7	12–30	10–35	(*g*) 60–160	15–50	30–80
Sows	0–3	0–5	0–5	0–3	0–2	0–4	0–6	0–2
Sheep								
Poultry	100–150	150–300	100–200	150–300	150–300	75–150	150–275	125–300
Per cent having tractors		60	67	33	9	30	67	50

(*a*) The 80-acre farms represent 7 per cent; the 140-acre farms, 4 per cent; the 160-acre farms, 17 per cent; the 200-acre farms, 7 per cent; the 240-acre farms, 12 per cent; the 280-acre farms, 7 per cent; the 320-acre farms, 15 per cent; the 400-acre farms, 7 per cent; the 480-acre farms, 5 per cent; the 560-acre farms, 5 per cent; and the 640-acre farms, 2 per cent of all farms.

(*b*) Mostly alfalfa.

(*c*) Twenty-five per cent of these have 25 head or more.

(*d*) Thirty per cent have 30 head or more.

(*e*) Twenty-five per cent have 30 head or more.

(*f*) Thirty per cent have 30 head or more up to 179 head.

(*g*) Forty per cent have 20 head or more.

(*h*) One-third have less than 10 head.

only 78 per cent had this acreage or less in 1928. the remainder having more. On the other sizes of farms minor changes of the same nature have taken place. Since changes in organizations in this area have not been marked during this four-year period the farming systems shown in Table XIII are fairly typical of present conditions and only minor adjustments need be made in them.

Area 9.—Area 9 comprises seven counties located in the west central part of the state; namely, Rush, Pawnee, Edwards, Kiowa, Pratt, Stafford, and Barton. Approximately 400 records were taken from representative townships in this area and used as the basis for the typical farming systems shown in Table XIV.

In this area the half-section farm was the most common, comprising about 29 per cent of the farms of all sizes. The 160-, 240-, and 460-acre farms were next in importance in numbers. Each of the other sizes comprised less than 5 per cent of all farms.

On each of these different sizes there were found a number of rather distinct organizations. Thus on the 320-acre farms there were four organizations commonly followed. The chief difference in these organizations was in the acreages of wheat, corn, and pasture. As the wheat acreage increased the corn and pasture acreages decreased. Approximately two out of every five farmers had about 200 acres of wheat, 45 acres of corn, and 55 acres of pasture. Another fifth had about 250 acres of wheat, 25 acres of corn, and 23 acres of pasture. A slightly larger number had only 145 acres of wheat and 60 and 90 acres, respectively, of corn and pasture and the remainder had still less wheat (95 acres) and 85 and 105 acres, respectively, of corn and pasture.

The number of live stock found on the different farms varied but little. On the farms having a high acreage of wheat more horses were found. A larger per cent of these farms also had tractors.

There were similar variations on the 480-acre farms. Three organizations were commonly followed, the chief difference in them being in the acreages of wheat, corn, grain sorghums, and pasture. The most common organization, followed by about 40 per cent of the farmers, had 260 acres of wheat, 60 acres of corn, 20 acres of grain sorghums, and 95 acres of pasture. One of the other organizations had 190 acres in wheat, 95 acres in corn, 8 acres in grain sorghums, and 50 acres in pasture. These two organizations were followed by 20 and 27 per cent of the farmers, respectively.

TABLE XIV.—TYPICAL FARMING SYSTEMS IN AREA 9 (CENTRAL KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (*a*).	80-acre farms.	160-acre farms.			200-acre farms.		240-acre farms.		
Typical farming systems	80 acres of wheat most common.	35-70 acres of wheat.	80-107 acres of wheat most common.	110-150 acres of wheat.	95-140 acres of wheat.	145-195 acres of wheat.	50-90 acres of wheat.	95-130 acres of wheat most common.	150-200 acres of wheat.
Relative frequency of type	*Per cent* 70	*Per cent* 28	*Per cent* 40	*Per cent* 26	*Per cent* 50	*Per cent* 45	*Per cent* 26	*Per cent* 41	*Per cent* 35
All Crops.	*Acres* 80	*Acres* 115	*Acres* 130	*Acres* 142	*Acres* 170	*Acres* 185	*Acres* 160	*Acres* 175	*Acres* 205
Corn		40	25	0-12	50	0-10	55	45	25
Oats									
Barley									
Wheat	80	55	95	130	120	175	80	120	170
Flax									
Grain sorghums		15	5				15	5	5
Tame hay (*b*)		0-10	0-10	0-5		0-10	10	5	5
Wild hay									
Pasture		35	25	15	25	10	75	55	30
Other land		10	5	3	5	5	5	10	5
Per cent having tractors			25	20	40	70	8	6	50
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	3	5	6	6	6	5	7	7	8
Cows	0-4	3-7	3-5	1-3	0-4	1-4	3-8	3-7	3-7
Cows milked	0-3	2-5	3-5	1-3	0-4	1-3	3-6	3-7	2-6
Other cattle	0-4	1-7	2-6	0-3	0-5	0-3	5-10	3-7	1-5
Sows	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	
Sheep									
Poultry	0-100	50-100	100-150	100-125	100-200	50-100	75-150	100-200	75-150

TABLE XIV.—*Concluded.*

ITEM.	320-acre farms.				400-acre farms.			480-acre farms.			560-acre farms.	640-acre farms.
Typical farming systems	60-105 acres of wheat.	118-170 acres of wheat.	175-225 acres of wheat most common.	230-280 acres of wheat.	180-225 acres of wheat.	240-290 acres of wheat most common.	300-350 acres of wheat.	150-210 acres of wheat.	220-300 acres of wheat most common.	305-400 acres of wheat.	210-300 acres of wheat most common.	320-410 acres of wheat.
Relative frequency of type	*Per cent* 14	*Per cent* 25	*Per cent* 38	*Per cent* 20	*Per cent* 28	*Per cent* 36	*Per cent* 28	*Per cent* 20	*Per cent* 40	*Per cent* 27	*Per cent* 70	*Per cent* 70
All Crops.	*Acres* 190	*Acres* 220	*Acres* 255	*Acres* 285	*Acres* 270	*Acres* 360	*Acres* 380	*Acres* 335	*Acres* 370	*Acres* 425	*Acres* 405	*Acres* 460
Corn	85	60	45	25	45	75	30	95	60	50	100	70
Oats					10			30	10			
Barley												
Wheat	95	145	200	250	200	260	330	190	260	360	250	360
Flax												
Grain sorghums	10	10	5	5	10	15	12	8	20	5	15	0–15
Tame hay (*b*)	5	5	5	5	5	10	8	12	20	10	40	25
Wild hay												
Pasture	105	90	55	25	120	30	15	125	95	50	140	160
Other land	20	10	10	10	10	10	5	20	15	5	15	20
Per cent having tractors	12	20	35	70	25	50	70	33	60	95	95	100
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	7	9	9	10	9	11	12	9	12	12	13	14
Cows	3–8	4–8	3–8	2–8	5–12	4–10	4–7	0–5	4–6	5–10	3–9	4–12
Cows milked	2–5	2–8	2–6	2–6	3–8	3–6	2–6	0–5	3–6	4–7	3–7	3–5
Other cattle	2–6	3–8	2–8	2–8	5–15	3–12	7–12	0–8	4–9	5–12	3–10	6–12
Sows	0–3	0–2	0–3	0–1	0–2	0–3	0–2	0–1	0–1	0–1	0–2	0–2
Sheep												
Poultry	60–100	75–150	100–200	60–150	75–150	100–180	125–200	75–150	100–200	100–200	75–125	100–200

(*a*) The 80-acre farms represent 3 per cent; the 160-acre farms, 15 per cent; the 200-acre farms, 4 per cent; the 240-acre farms, 11 per cent; the 320-acre farms, 29 per cent; the 400-acre farms, 9 per cent; the 480-acre farms, 11 per cent; and the 560-acre farms, 27 per cent of all farms.

(*b*) Mostly alfalfa.

On the other sizes of farms similar variations in organizations were found. The nature of each of these as well as the number of farmers on each size of farm following them may be ascertained by referring to Table XIV.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 9.—As in the other two areas in the wheat belt which have already been discussed it is important to determine what shifts if any have taken place in this area since 1924 to know how much adjustment in the 1924 farming systems will have to be made so that they will be representative of present conditions.

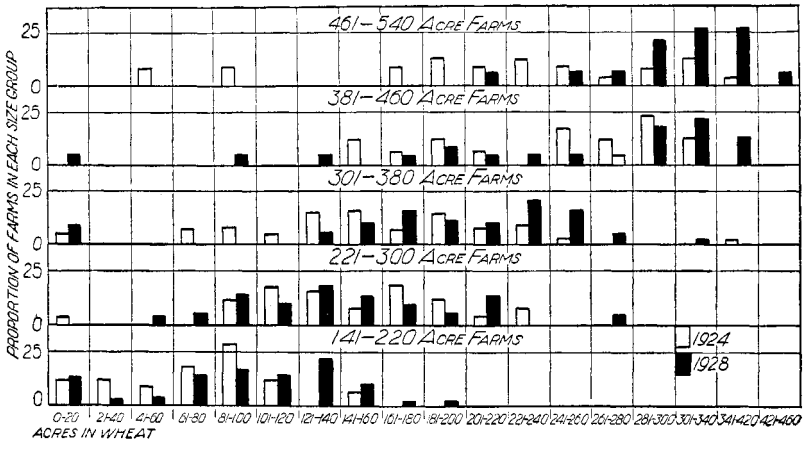


Fig. 38.—Proportion of farms of different sizes in Area 9 with specified acres of wheat in 1924 and 1928. The shift in the acreage of wheat in this area from 1924 to 1928 is quite pronounced, particularly on the larger sizes of farms. This is shown by a much larger proportion of the farms having larger acreages of wheat in 1928 than in 1924.

Source: Adapted from data from assessors' rolls of Kansas counties.

Such changes as have taken place in the organization of farms in this area so far as indicated by changes in the proportion of farms with specified acreages of wheat, are shown in figure 38. The situation is shown for five size groups of farms which are the dominant sizes in the area.

On the large farms (461 to 540 acres), 51 per cent had 240 acres or less of the farm area in wheat in 1924; in 1928 only 6 per cent had as small an acreage as this. Whereas 75 per cent or more had less than 280 acres of wheat in 1924, this situation had been practically reversed in 1928, 75 per cent of the farmers having more than this acreage of wheat. It will be necessary therefore to make rather

drastic revisions upward in the acreage of wheat in the typical organizations based on 1924 census data shown in Table XIV.

Figure 38 shows that there are three quite dominant organizations, one of these had 281 to 300 acres, the second 301 to 340 acres, and the third 341 to 420 acres of wheat. The increase in the wheat acreage has probably come largely at the expense of the acreage in pasture, hence the pasture acreage should be adjusted accordingly, that is, decreased as the wheat acreage is increased.

The nature of the shifts in the other sizes of farms may be ascertained from figure 40.

Area 10.—Typical farming systems in Area 10 are shown in Tables XV, XVI, XVII, and XVIII. Because of the wide range in conditions, four representative sub-areas were selected within the area so that the complete range in conditions would be shown. Sub-areas were selected in the northwestern. northeastern, southeastern, and southern parts of the area, respectively. The typical farming systems in each are as follows:

In the northwestern part of Area 10 there is a wide range in sizes of farms, varying from 160 to as much as 4,000 acres. The 320-, 640-, and 800-acre farms are the most common sizes found.

On the 320-acre farms the most common organization had 125 acres in crops, 40 acres of which were in corn, 30 acres in barley, 40 acres in grain sorghum, and 15 acres in hay. Approximately 6 of every 10 farmers followed this organization in 1924. The other important organization on this size of farm followed by the remainder of the farmers had 30 acres of corn, 0 to 40 acres of barley, 100 acres of wheat, 10 acres of grain sorghums, and 0 to 10 acres of hay.

On the 640-acre farms there were three organizations commonly followed in 1924, one having 35 to 70 acres of wheat, the second 110 to 200 acres of wheat, and the third 220 to 320 acres of wheat. The organizations having more wheat had less pasture. These organizations were followed by 32, 24, and 28 per cent, respectively, of the farmers on this size of farm.

There were simlilar variations on the 800-acre and other sizes of farms. The nature of these variations may be noted by referring to Table XV.

In the northeastern part of Area 10 the farms are not so large as in the northwestern part. Whereas the 640- and 800-acre farms were about as important as the 320-acre farms in the northwestern part of the area, in the northeastern part the 320-acre farm is quite

TABLE XV.—TYPICAL FARMING SYSTEMS IN NORTHWESTERN PART OF AREA 10 (WESTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	160-acre farms.		320-acre farms.		480-acre farms.	640-acre farms.			800-acre farms.		960-acre farms.	1280-acre farms.	2000-4000 acre farms (f).
Typical farming systems	No wheat.	100-160 acres of wheat most common.	No wheat most common.	60-120 acres of wheat most common.	100-185 acres of wheat most common.	35-70 acres of wheat most common.	110-200 acres of wheat.	220-320 acres of wheat.	100-190 acres of wheat.	250-350 acres of wheat most common.	100-180 acres of wheat most common.	280-400 acres of wheat most common.	300-1300 acres of wheat.
Relative frequency of type	*Per cent* 40	*Per cent* 60	*Per cent* 58	*Per cent* 38	*Per cent* 60	*Per cent* 32	*Per cent* 24	*Per cent* 28	*Per cent* 33	*Per cent* 39	*Per cent* 46	*Per cent* 46	*Per cent*
All Crops.	*Acres* 65	*Acres* 135	*Acres* 125	*Acres* 160	*Acres* 25	*Acres* 155	*Acres* 325	*Acres* 380	*Acres* 245	*Acres* 465	*Acres* 320	*Acres* 560	*Acres*
Corn	30	0–20	40	30	30	45	30	40	20	65	75	25	125 300
Oats													
Barley	30		30	0 40	0–25	15	50	40	45	60	45	75	60–120
Wheat		130		100	150	60	155	270	160	300	150	320	300 1300
Grain sorghums	0–25		40	10	0–25	30	60	30	20	25	40	25–100	30 90
Tame hay			15	0–10	0–30	5	30			5	10	35–120	0–15
Wild hay													
Other Crops										0–30			0–60
Pasture	90	20	180	150	145	465	300	250	(555	(335	(640	(720	(1070 3000
Other land	5	5	15	10	10	20	15	10	\	\	\	\	\
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	4	0 4	8	8	7	8	9	8	10	14	6	19	15–50
Cows	2 6		5–12	3–12	6–13	7–20	8–25	7–15	13–25	3–12	(d) 3 11	3–15	10–65
Cows milked	1 5		3–10	0–8	3–12	2–7	3–10	3–6	3 6	3 12	0–8	2 10	3 15
Other cattle			5–15	0 9	6–12	10–25	12–30	(b) 0 6	3–20	(e) 5 25	6 10	(e) 4 12	6 225
Sows	0–1		0–2	0 4	0–2	0–2		0–2	0 2	0 3			0–8
Sheep													
Poultry	30–75		75–200	75 150	100 200	75–150	125–250	100–200	80 275	100 250	30–100	75 250	60 250
Per cent having tractors				33	33		33	70	67	57	50	50	100

(a) The 160-acre farms represent 9 per cent; the 320-acre farms, 14 per cent; the 480-acre farms, 7 per cent; the 640-acre farms, 15 per cent; the 800-acre farms, 11 per cent; the 960-acre farms, 8 per cent; the 1,280-acre farms, 6 per cent; and the 2,000-4,000-acre farms, 6 per cent of all farms.

(b) One-third have 25 head and more.

(c) Two-sevenths have 28 cows.

(d) One-third of them have 25 head and more.

(e) One-half have from 35 to 60 head.

(f) Large farms are extremely variable in all respects. The figures are shown to illustrate the range in enterprises found.

dominant comprising 28 per cent of the farms of all sizes as compared with 12 and 8 per cent for the 600- and 800-acre farms, respectively.

On the 320-acre farms there were three organizations commonly followed in 1924, The most common of these had 100 to 160 acres in wheat and was followed on about 42 per cent of the farms. The other two varied from this, one having much less wheat (33 to 93 acres) and the other more wheat (163 to 235 acres).

On the 480-acre farms four common organizations were found, the principal difference in them being in the acreage of wheat and pasture. Those having high acreages in wheat had low acreages in pasture and vice versa. These different organizations had approximately 100, 180, 250, and 320 acres of wheat, respectively, and were followed by 13, 40, 33, and 13 per cent of the farmers.

On the 640-acre and other sizes of farms variations in organizations similar to these were found. These are shown in Table XVI.

The principal difference between the organizations in the northeastern as against those in the northwestern part of the area is in the acreage of wheat.

In Table XVII are shown the typical farming systems found in the southern part of Area 10. The 320-acre farm was the most common size. On this size of farm there were three common organizations in 1924. The principal differences in them were in the wheat, sorghum, and pasture acreages. The most common of these had no wheat, 75 acres of grain sorghums, and 215 acres in pasture; the second had 55 acres of wheat, 60 acres of grain sorghums, and 175 acres in pasture; and the third, 120 acres in wheat, 45 acres in grain sorghums, and 115 acres in pasture.

On the larger farms the acreages of the three crops varied in a similar way, the wheat acreage varying inversely with the pasture and grain sorghum acreage. On the 800-acre farms, of the three common organizations, one had 55 acres of wheat, 90 acres of grain sorghums, and 615 acres in pasture; the second had 160 acres of wheat, 90 acres of grain sorghums, and 500 acres of pasture; and the third, 270 acres of wheat, 100 acres of grain sorghums, and 430 acres in pasture. On the 1,120-acre farms there was the same tendency.

The principal difference in the farming systems in the southeast ern part of Area 10 and those in the southern part was in the relative acreages of wheat and grain sorghums grown, more wheat and less grain sorghums being found in the southeast. (Compare Tables

TABLE XVI.—TYPICAL FARMING SYSTEMS IN NORTHEASTERN PART OF AREA 10 (WESTERN KANSAS).
(Source: Special tabulations, 1925 Census.)

ITEM (a).	160-acre farms.			240-acre farms.	320-acre farms.			400-acre farms.
Typical farming systems	20-50 acres of wheat.	60-95 acres of wheat most common.	100-140 acres of wheat.	45-90 acres of wheat most common.	35-95 acres of wheat.	100-160 acres of wheat most common.	165-235 acres of wheat.	150-215 acres of wheat most common.
Relative frequency of type	*Per cent* 27	*Per cent* 33	*Per cent* 23	*Per cent* 70	*Per cent* 14	*Per cent* 42	*Per cent* 36	*Per cent* 70
All Crops.	*Acres* 90	*Acres* 105	*Acres* 125	*Acres* 115	*Acres* 145	*Acres* 190	*Acres* 245	*Acres* 255
Corn	25	8	0–12	25	40	20	20	20
Oats	10	0–10		0–20	15	10	10	20
Barley								
Wheat	40	80	110	65	70	140	200	190
Flax								
Grain sorghums	10	10	10	15	15	15	10	25
Tame hay	0–10	0–7					0–10	
Wild hay					0–15	5		
Pasture	65	45	30	115	150	115	65	135
Other land	5	10	5	10	25	15	10	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	5	5	4	5	7	8	9	9
Cows	4–8	3–8	0–4	5–8	4–8	6–12	5–12	7–15
Cows milked	2–5	2–4	0–4	4–7	2–7	3–8	3–8	5–8
Other cattle	3–8	2–6	0–4	5–8	3–8	5–15	4–12	5–15
Sows	0–1	0–2	0–1	0–1	0–5	0–2	0–3	0–2
Sheep	100–200	100–200	50–100	75–125	100–150	100–200	100–200	100–200
Poultry	33		20	15	18	16	20	33
Per cent having tractors								

TABLE XVI.—*Concluded.*

ITEM.	480-acre farms.				640-acre farms.			880-acre farms.			1280-acre farms.		
Typical farming systems	70-130 acres of wheat.	145-200 acres of wheat most common.	210-285 acres of wheat.	295-350 acres of wheat.	100-188 acres of wheat.	200-285 acres of wheat most common.	290-375 acres of wheat.	150-250 acres of wheat.	270-360 acres of wheat.		110-200 acres of wheat.	280-380 acres of wheat.	
Relative frequency of type	*Per cent* 13	*Per cent* 40	*Per cent* 33	*Per cent* 13	*Per cent* 17	*Per cent* 44	*Per cent* 28	*Per cent* 16	*Per cent* 30	*Per cent* 27	*Per cent* 33	*Per cent* 30	*Per cent* 20
All Crops.	*Acres* 180	*Acres* 245	*Acres* 325	*Acres* 385	*Acres* 245	*Acres* 320	*Acres* 400	*Acres* 310	*Acres* 420	*Acres* 515	*Acres* 305	*Acres* 530	*Acres* 670
Corn	40	30	35	30	60	40	30	50	40	50	75	80	70
Oats	15	20	20	20	15	15	20	20	35	15	15	30	60
Barley													
Wheat	100	180	250	320	150	240	320	200	310	400	150	350	480
Flax													
Grain sorghums	25	15	15	15	20	20	30	25	35	30	50	50	60
Tame hay													
Wild hay			0-10			0-10		15		0-15	15	20	
Pasture	280	200	140	80	395	310	230	570	460	365	975	750	610
Other land	20	35	15	15		10	10						
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	10	9	10	11	10	10	12	11	11	14	14	14	17
Cows	7-15	5-15	5-15	6-20	10-20	8-20	8-15	18-50	12-40	10-25	15-75	15-40	10-50
Cows milked	5-7	3-8	3-8	6-10	4-8	4-8	4-8	2-7	4-8	4-8	1-5	2-8	2-9
Other cattle	8-12	5-15	7-12	6-15	6-25	5-12	6-15	30-70	15-35	7-25	15-90	15-25	12-50
Sows	1-5	0-5	0-3	0-2	0-1	0-4	1-4	2-5	1-4	0-5	0-3	0-3	0-6
Sheep													
Poultry	100-200	100-200	100-225	100-150	100-200	100-200	100-200	100-125	150-300	100-200	100-200	75-200	50-150
Per cent having tractors	10	35	40	40	20	40	25	50	70	80	60	40	80

(*a*) The 160-acre farms represent 10.6 per cent; the 240-acre farms, 2.4 per cent; the 320-acre farms, 28 per cent; the 400-acre farms, 5 per cent; the 480-acre, farms 17.4 per cent; the 640-acre farms, 12 per cent; the 880-acre farms, 8 per cent; and the 1,280-acre farms, 5 per cent of all farms.

TABLE XVII.—TYPICAL FARMING SYSTEMS IN THE SOUTHERN PART OF AREA 10 (WESTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	160-acre farms.		320-acre farms.			400-acre farms.		480-acre farms.	
Typical farming systems	No wheat.	60-110 acres of wheat.	No wheat.	45-70 acres of wheat.	100-140 acres of wheat.	0-70 acres of wheat.	90-160 acres of wheat.	0-80 acres of wheat.	130-210 acres of wheat most common.
Relative frequency of type	*Per cent* 34	*Per cent* 33	*Per cent* 37	*Per cent* 20	*Per cent* 31	*Per cent* 40	*Per cent* 45	*Per cent* 38	*Per cent* 50
All Crops.	*Acres* 70	*Acres* 85	*Acres* 100	*Acres* 140	*Acres* 195	*Acres* 165	*Acres* 225	*Acres* 150	*Acres* 255
Corn	10	.....	25	25	15	20	15	15	25
Oats	.....	.....	.....	0-15	15	.....	15	.....	.....
Barley	.....	.....	.....		.....	10		.....	.....
Wheat	.....	80	.....	55	120	40	125	50	160
Flax	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grain sorghums	60	0-20	75	60	45	95	70	85	70
Tame hay	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wild hay	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pasture	85	70	215	175	115	230	170	325	215
Other land	5	5	5	5	10	5	5	5	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	5	5	6	6	8	7	10	7	10
Cows	2-6	0-6	5-15	4-9	3-8	10 18	8-15	8-20	5 10
Cows milked	1-5	0-5	3-7	4-7	2-7	4 8	4 7	4 8	3-7
Other cattle	1-4	0-4	3-8	6 9	2-7	5-15	8-15	8-15	5-12
Sows	0-1	0-1	0-2	0-2	.....	0 1	0 2	0 2	0-3
Sheep	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	50-100	50-100	100-200	100-150	80-120	100-200	75-175	100-200	100-200
Per cent having tractors	.....	.....	8	.....	20	.....	12	.....	25

TABLE XVII.—*Concluded.*

ITEM.	640-acre farms.		800-acre farms.			1120-acre farms.		
Typical farming systems	No wheat.	90-160 acres of wheat.	30-80 acres of wheat.	100-185 acres of wheat.	215-300 acres of wheat.	No wheat.	50-150 acres of wheat.	250-380 acres of wheat.
Relative frequency of type	*Per cent* 40	*Per cent* 30	*Per cent* 35	*Per cent* 35	*Per cent* 20	*Per cent* 40	*Per cent* 30	*Per cent* 20
All Crops.	*Acres* 155	*Acres* 235	*Acres* 175	*Acres* 300	*Acres* 370	*Acres* 260	*Acres* 260	*Acres* 485
Corn	20	20	30	25	.....	20	20	20
Oats	5	15	.....	15	.....	10	20	20
Barley			.....		.....			
Wheat	.....	120	55	160	270	.....	100	290
Flax	.....	.....	.....	.....	.....	.....	.....	.....
Grain sorghums	120	80	90	90	100	200	120	155
Tame hay	10	.....	.....	.....	.....		.....	.....
Wild hay		.....	.....	10	.....	30	.....	.....
Pasture	480	395	615	500	430	850	845	635
Other land	5	10	10	20		10	15	
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	11	10	12	13	14	11	12	17
Cows	8-30	15-30	30-70	30-60	6-12	35-65	30-60	15-60
Cows milked	4-8	6-10	1-5	4-10	3-8	2-8	5-10	6-12
Other cattle	5-15	12-18	10-20	8-25	6-12	(*b*) 20-50	20-50	8-40
Sows	1-2	0-1	0-7	1-4	1-3	0-4	1-2	1-4
Sheep	.....	.....	.....	.....	.....	.....	.....	.....
Poultry	100-150	150-200	75-150	100-200	100-125	50-150	125-200	50-200
Per cent having tractors	16	.....	.....	30	40	.....	15	40

(*a*) The 160-acre farms represent 10 per cent; the 320-acre farms, 18 per cent; the 400-acre farms, 9 per cent; the 480-acre farms, 8 per cent; the 640-acre farms, 7 per cent; the 800-acre farms, 10 per cent; and the 1,120-acre farms, 10 per cent of all farms.

(*b*) A few farms have 100 or more other cattle.

TABLE XVIII.—TYPICAL FARMING SYSTEMS IN SOUTHEASTERN PART OF AREA 10 (WESTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	160-acre farms.		320-acre farms.			400-acre farms.		480-acre farms.		
Typical farming systems	50-110 acres of wheat.	140-180 acres of wheat.	80-150 acres of wheat.	160-240 acres of wheat.	245-330 acres of wheat.	165-220 acres of wheat.	270-375 acres of wheat.	120-200 acres of wheat.	210-300 acres of wheat.	330-440 acres of wheat.
Relative frequency of type	*Per cent* 50	*Per cent* 33	*Per cent* 27	*Per cent* 31	*Per cent* 35	*Per cent* 46	*Per cent* 54	*Per cent* 17	*Per cent* 46	*Per cent* 30
All Crops.	*Acres* 85	*Acres* 160	*Acres* 170	*Acres* 230	*Acres* 300	*Acres* 275	*Acres* 335	*Acres* 240	*Acres* 340	*Acres* 410
Corn						15			10	10
Oats										
Barley			20			25	0–20	20	30	10
Wheat	80	160	110	230	285	200	320	180	260	360
Flax										
Grain sorghums	0–20		40	30	15	35	15	40	40	30
Tame hay										
Wild hay										
Pasture	70		140	80	20	125	60	230	130	60
Other land	5		10	10				10	10	10
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	5	5	7	8	8	9	9	8	10	8
Cows	2–6		5–8	0–6	0 3	4–8	2 7	5–12	4–9	2 8
Cows milked	1 5		2–5	0 6	0-3	3–6	2–7	4–7	3–6	2–5
Other cattle	1-4		0–5	0-4	0 1	5–10	0 7	3 10	3–8	2–9
Sows	0–1		0–3	0 1				0–2	0–2	0–1
Sheep										
Poultry	50–100		75-150	50–75	0–50	200 300	200–300	50–80	75–200	125–200
Per cent having tractors	30	70		25	50	15	85	22	30	75

TABLE XVIII.—*Concluded.*

ITEM.	640-acre farms.			800-acre farms.			1120-acre farms.		
Typical farming systems	215-300 acres of wheat.	315-400 acres of wheat.	420-540 acres of wheat.	260-360 acres of wheat.	370-470 acres of wheat.	480-600 acres of wheat.	170-260 acres of wheat.	330-488 acres of wheat.	535-700 acres of wheat.
Relative frequency of type	*Per cent* 35	*Per cent* 30	*Per cent* 30	*Per cent* 21	*Per cent* 40	*Per cent* 22	*Per cent* 20	*Per cent* 35	*Per cent* 45
All Crops.	*Acres* 360	*Acres* 430	*Acres* 540	*Acres* 415	*Acres* 530	*Acres* 570	*Acres* 360	*Acres* 565	*Acres* 720
Corn									
Oats									
Barley	30	30		50	30	20	60	60	50
Wheat	280	360	480	300	425	520	225	380	600
Flax									
Grain sorghums	50	40	60	65	75	30	75	125	70
Tame hay									
Wild hay									
Pasture									
Other land	270 10	200 10	90 10	375 10	270	220 10	720 40	545 10	400
Live Stock.									
Horses	*Number* 10	*Number* 12	*Number* 11	*Number* 12	*Number* 14	*Number* 16	*Number* 12	*Number* 15	*Number* 20
Cows	4-8	4-8	2-6	3-20	5-9	3-6	12-16	15-50	(*b*) 4-20
Cows milked	2-5	3-7	0-6	2-6	4-7	2-5	8-12	2-8	3-6
Other cattle	4-8	4-8	0-5	3-15	3-8	3-10	12-20	(*b*) 5-25	(*b*) 10-30
Sows	0-1	0-2	0-2	0-3	0-1	0-1		0-1	0-2
Sheep									
Poultry									
Per cent having tractors	100-200 50	100-150 43	50-150 90	50-100 40	75-150 60	50-150 75	75-200	50-150 75	100-200 100

(*a*) The 160-acre farms represent 9 per cent; the 320-acre farms, 17 per cent; the 400-acre farms, 4 per cent; the 480-acre farms, 17 per cent; the 640-acre farms, 14 per cent; the 800-acre farms, 11 per cent; and the 1,120-acre farms, 7 per cent of all farms.

(*b*) Some have as many as 120 head or more.

XVII and XVIII.) This is to be accounted for by the fact that the sub-area selected in the southern part of the area was more sandy than was true of the sub-area in the southeast. The fact that sorghum does better than wheat on sandy land has resulted in a larger acreage of this crop. Another factor which also may have had an influence is the extent of winter killing of wheat. Local areas frequently suffer more severely from winter killing than do other localities that are not far distant. Since grain sorghums are crops which usually replace winterkilled wheat in this area, the acreages of these crops may have been larger the particular year for which the data apply. The nature of the typical farming systems found in the southeastern area may be obtained by referring directly to Table XVIII.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 10.—The change in size of farms taking place in Area 10 from 1924 to 1928 is shown in figure 27. The situation is shown for two representative sub-areas in the area, one in the northern part and the other in the southern part.

In the southern part of the area there has been a decrease in the

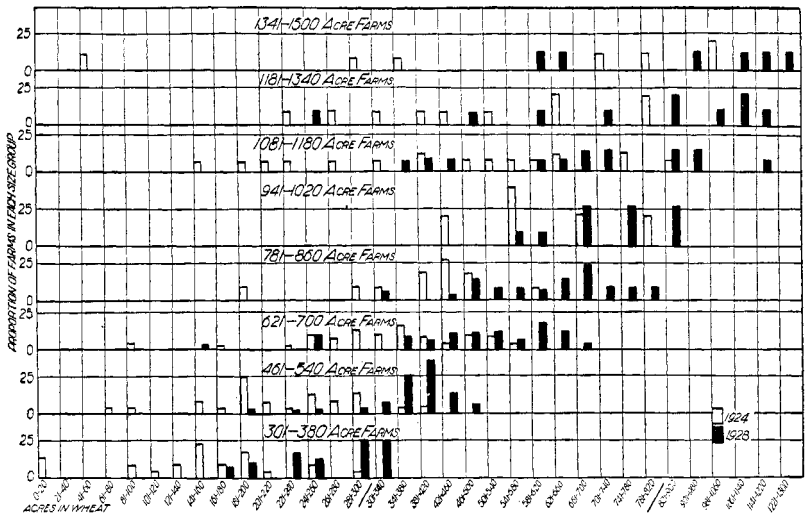


FIG. 39.—Proportion of farms of different sizes in the southern part of Area 10 with specified acres of wheat in 1924 and 1928. The pronounced upward shift in the wheat acreage in this part of Area 10 is clearly indicated. This increase has not been confined to any one size of farm but has been quite general for all sizes.

Source: Adapted from data from assessors' rolls of Kansas counties.

proportion of the farms of 160 and of 320 acres in size, also in the 640-acre farms and in the farms of 941 acres and more, but a large increase in the farms 781 to 940 acres in size. In the northern part of the area similar changes have taken place except that there was an increase in the 141- to 300-acre group.

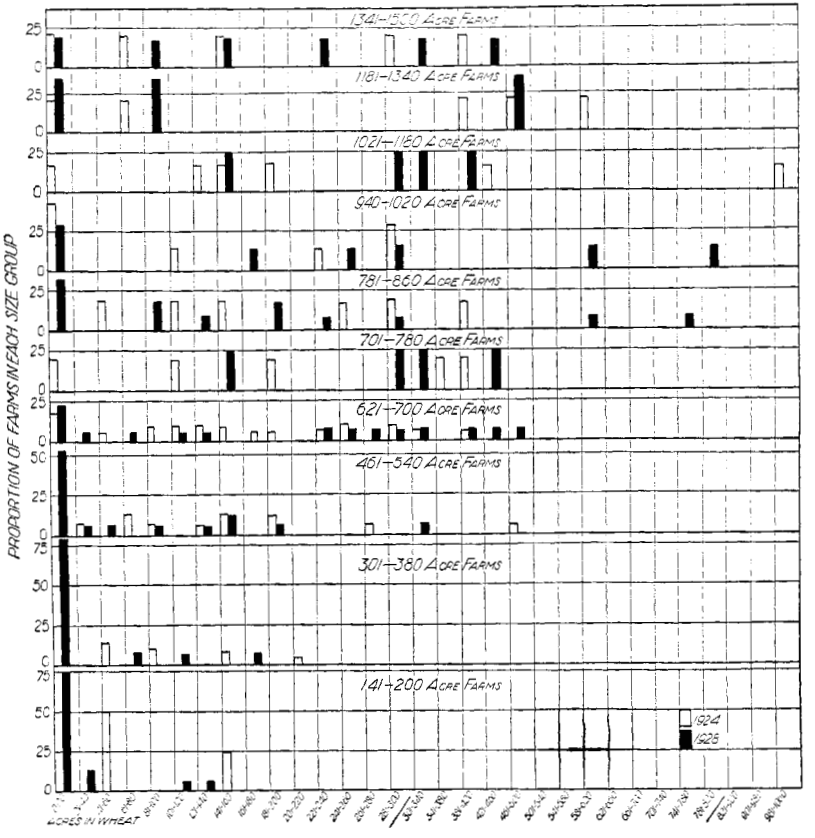


FIG. 40.—Proportion of farms of different sizes in the northern part of Area 10 with specified acres of wheat in 1924 and 1928. There has been a less pronounced shift in the acreage of wheat in the northern part of Area 10 than in the southern part. Compare figures 41 and 42.

Source: Adapted from data from assessors' rolls of Kansas counties.

In figures 39 and 40 are shown the proportion of the farms with specified acreages of wheat for selected sizes of farms in the two sub-areas in Area 10. An examination of these charts will show that there has been a rather pronounced upward shift in the acreage of wheat in this area. For example, on the 300- to 380-acre farms

in the southern part of the area, 48 per cent had from 141 to 300 acres of wheat in 1924, while in 1928 only 17 per cent had this acreage. On the other hand more than one-half (54 per cent) had from 281 to 340 acres of wheat in 1928. Forty-two per cent of the 640-acre farms had from 281 to 380 acres of wheat in 1924, while in 1928 only 8 per cent of the farms had this acreage of wheat. On the other hand in 1928, 45 per cent of these farms had more than 500 acres of wheat. Likewise for the other sizes of farms changes of a similar nature had taken place.

In the northern part of the area the change in wheat acreage has not been nearly so pronounced, yet some change has taken place. Thus on the 640-acre farms 90 per cent in 1924 had 300 acres or less of their area in wheat, while in 1928 only 76 per cent of them had this acreage or less of wheat; or in other words there had been some upward change in the wheat acreage. To say the same thing in another way, only 10 per cent of the farms had more than 300 acres of their area in wheat in 1924, while in 1928, 24 per cent of them had this much wheat. Changes of a similar nature occurred on the other sizes of farms.

The shifts in the acreage of wheat since 1924 make adjustments necessary in the typical farming systems based on 1924 census data shown in Tables XV, XVI, XVII, and XVIII. Just what adjustments to make for each size of farm may be determined with reasonable accuracy by taking the proportion of the farms with specified acreages of wheat in 1928 and comparing them with the typical groups of the same size in 1924 and increasing the acreage of wheat accordingly.

Changes in the wheat acreage in this area have come about at the expense of the pasture, grain sorghum, or corn and barley acreage, since these are the principal enterprises in the area. Hence any adjustments upward in the wheat acreage must take into consideration downward adjustments in one or more of these other enterprises.

Area 11.—Area 11 comprises Cheyenne, Sherman, Rawlins, Thomas, Decatur, Sheridan, and Graham counties in the extreme northwestern part of the state. Approximately 290 records were taken in representative townships in this area and used as the basis for the typical farming systems shown in Table XIX.

The half-section farm is the most common size, comprising approximately 19 per cent of all farms. The 480- and 640-acre farms are next in numbers, comprising 14 and 13 per cent, respectively, of

the farms of all sizes. Other important sizes are the 800-, 960-, 1,120-, and 160-acre farms.

There were three common organizations found on the 320-acre farms in 1924. One of these had no wheat, 85 acres of corn, 20 acres of barley, 10 acres of sorghum, and 195 acres of pasture; another had 100 acres of wheat, 50 acres of corn, 20 acres of barley, 10 acres of sorghum, and 130 acres of pasture; and the third had 180 acres of wheat, 30 acres of corn, 20 acres of barley, 10 acres of sorghum, and 70 acres of pasture.

On the 480-acre farms similar variations were found; of the three common organizations one had 100 acres of wheat, another 185 acres, and the third 285 acres. The other enterprises were practically constant, except the pasture acreage which varied inversely with the wheat acreage.

Likewise on the 640-acre farms, of the three organizations one had 140 acres of wheat, a second 245 acres, and the third 320 acres. The other enterprises were fairly constant except the pasture which varied inversely with the wheat acreage.

The nature of the variations in organizations on the other sizes of farms may be ascertained by referring to Table XIX.

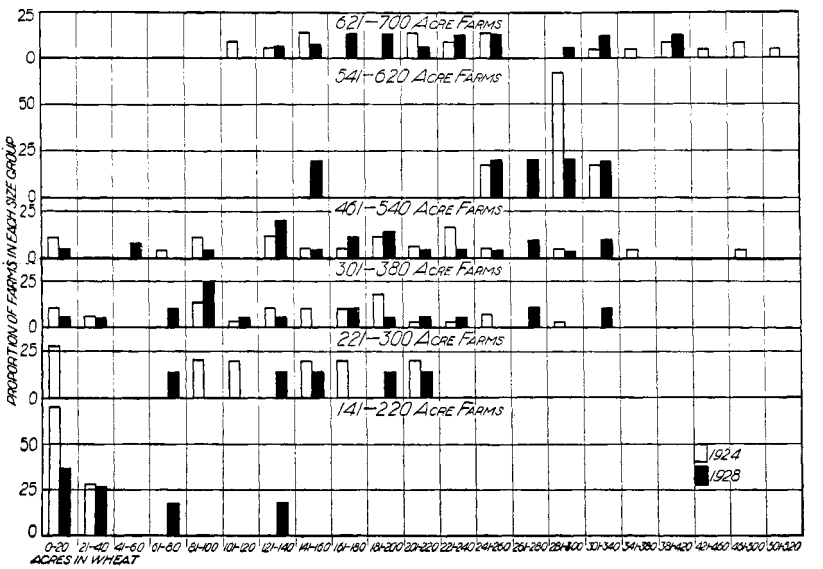


FIG. 41.—Proportion of farms of different sizes in Area 11 with specified acres of wheat in 1924 and 1928. No marked shifts in the wheat acreage occurred on the different sizes of farms in this area as shown by a comparison of the proportion of the farms of each size with specified acreages for the years 1924 and 1928.

Source: Adapted from data from assessors' rolls of Kansas counties.

TABLE XIX.—TYPICAL FARMING SYSTEMS IN AREA 11 (WESTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	320-acre farms.			400-acre farms.		480-acre farms.		
Typical farming systems	No wheat.	60-130 acres of wheat.	145-220 acres of wheat.	60-135 acres of wheat.	160-240 acres of wheat.	70-140 acres of wheat.	155-210 acres of wheat.	230-320 acres of wheat.
Relative frequency of type	*Per cent* 30	*Per cent* 22	*Per cent* 37	*Per cent* 25	*Per cent* 45	*Per cent* 21	*Per cent* 40	*Per cent* 30
All Crops.	*Acres* 115	*Acres* 180	*Acres* 240	*Acres* 190	*Acres* 265	*Acres* 170	*Acres* 260	*Acres* 355
Corn	85	50	30	50	40	45	45	40
Oats								
Barley	20	20	20	20	15	0-30	20	20
Wheat		100	180	100	200	100	185	285
Flax								
Grain sorghums	10	10	10	20	10	20	10	10
Tame hay								
Wild hay								
Pasture	195	130	70	200	125	300	210	110
Other land	10	10	10	10	10	10	10	15
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	9	9	9	12	14	9	9	10
Cows	4-6	6-9	2-8	4-8	2-7	2-7	6-15	4-7
Cows milked	2-6	2-6	2-5	3-7	1-3	2-6	2-7	1-5
Other cattle	3-8	4-9	4-10	4-15	1-5	2-8	3-10	3-8
Sows	0-5	1-3	0-3	2-10	0-3	0-1	0-4	0-2
Sheep								
Poultry	75-150	100-200	75-150	200-300	75-200	100-200	75-150	100-175
Per cent having tractors	20	15	35		40	8	33	40

TABLE XIX.—*Concluded.*

ITEM.	640-acre farms.			800-acre farms.		960-acre farms.	1120-acre farms.	
Typical farming systems	80-170 acres of wheat.	200-290 acres of wheat.	300-385 acres of wheat.	260-340 acres of wheat.	360-435 acres of wheat.	270-330 acres of wheat.	225-340 acres of wheat.	400-600 acres of wheat.
Relative frequency of type	*Per cent* 18	*Per cent* 30	*Per cent* 25	*Per cent* 55	*Per cent* 33	*Per cent* 50	*Per cent* 30	*Per cent* 30
All Crops.	*Acres* 280	*Acres* 355	*Acres* 435	*Acres* 440	*Acres* 535	*Acres* 540	*Acres* 465	*Acres* 640
Corn	80	60	80	75	75	150	120	60
Oats								
Barley	30	25	20	40	25	60	30	50
Wheat	140	245	320	300	400	300	290	500
Flax								
Grain sorghums	30	25	15	20	30	30	20	20
Tame hay								
Wild hay				5			0-20	10
Pasture	340	270	185	345	240	405	635	460
Other land	20	15	20	15	25	15	20	20
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	12	14	14	17	20	20	19	17
Cows	6-10	5-9	4-8	10-20	10-15	(*b*) 13-25	10-20	7-15
Cows milked	2-5	2-7	2-6	1-3	2-7	2-4	2-5	2-5
Other cattle	10-20	4-6	7-20	10-20	7-15	6-15	11-25	16-30
Sows	2-7	1-6	1-4	2-8	2-4	3-7	2-10	3-7
Sheep								
Poultry	100-150	100-200	60-150	100-200	100-200	150-300	100-200	150-200
Per cent having tractors	20	25	55	75	80	50	50	100

(*a*) The 160-acre farms represent 7 per cent; the 320-acre farms, 18.6 per cent; the 400-acre farms, 8 per cent; the 480-acre farms, 14 per cent; the 640-acre farms, 13 per cent; the 800-acre farms, 7 per cent; the 960-acre farms, 6 per cent; and the 1,120-acre farms, 9 per cent of all farms.

(*b*) Some farms have 300 head or more.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 11.—Figure 41 show the proportion of farms of different sizes in Area 11 growing specified acreages of wheat for the years 1924 to 1928. An examination of this figure shows that there has been no pronounced change in the acreage of wheat on these farms as judged by a comparison of the acreage grown in the two years. The largest shift seems to have taken place on the smaller farms, particularly on the farms of 141 to 200 acres in size. Whereas none of the farms of this size had more than 40 acres of wheat in 1924, by 1928, 35 per cent of them had more than this acreage. On the 640-acre farms, the largest size group shown, 38 per cent of the farms had more than 300 acres in wheat in 1924 while in 1928 only 26 per cent had this acreage. No satisfactory explanation of the larger shift on the smaller farms suggests itself. With the increasing use of the combine in the section with the possibility of handling larger acreages of wheat, it would be reasonable to expect larger shifts in acreage of wheat to occur on the larger farms where the combines are more likely to be used, but according to these data such did not take place.

In view of the relatively small shifts in the wheat acreage in this area it will not be necessary to make any marked adjustments in the typical organizations in Table XIX based on 1924 census data.

Area 12.—Area 12 comprises all of Greeley, Hamilton, Stanton, Kearny, and Wichita counties and part of Wallace, Logan, Finney, Grant, and Morton counties located in the southwestern part of the state. This area is more of a live stock and grazing area than a small grain area. The grain sorghums are the most important crop grown. Some broom corn is grown, particularly in the southern part of the area.

In Table XX are shown the more important farming systems found on the different sizes of farms in 1924. The 320-acre farm was the most common size in the area, comprising about one-fourth of the farms of all sizes in 1924. There were three organizations commonly followed on these farms. The chief difference in them was in the acreage of grain sorghums. The acreage of these crops varied from 10 acres on the first organization to 45 acres on the second and 120 acres on the third. There was but little wheat found on any of these farms.

On the 480-acre farms there were two common organizations. One of these had 20 acres of corn and 65 acres of grain sorghums.

TABLE XX.—TYPICAL FARMING SYSTEMS IN AREA 12 (WESTERN KANSAS).

(Source: Special tabulations, 1925 Census.)

ITEM (a).	160-acre farms.	240-acre farms.	320-acre farms.			480-acre farms.		640-acre farms.	800-acre farms (c).
Typical farming systems	50 acres of sorghum. No wheat.	80 acres of sorghum. No wheat.	0-20 acres of sorghum.	30-60 acres of sorghum.	75-150 acres of sorghum.	40-75 acres of sorghum.	120 acres of sorghum.	30 acres of sorghum. 40 acres of wheat.	75-130 acres of sorghum.
Relative frequency of type	*Per cent* 80	*Per cent* 75	*Per cent* 30	*Per cent* 33	*Per cent* 13	*Per cent* 50	*Per cent* 40	*Per cent* 85	*Per cent* .....
All Crops.	*Acres* 95	*Acres* 145	*Acres* 25	*Acres* 85	*Acres* 150	*Acres* 105	*Acres* 180	*Acres* 115	*Acres* 185
Corn	15	10	0-15	15	10	20	20	25	15
Oats									
Barley	0-20								
Wheat				0-20				20	
Flax				0-30				40	
Grain sorghums	50	85	10	45	120	65	120	30	110
Tame hay									
Wild hay									
Broom corn									
Pasture	25	50	0-20	15	0-60	20	40		60
Other land	60 5	190 5	290 5	230 5	170	{375	{300	{525	{615
Live Stock.	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses	8	9	8	10	13	12	16	15	13
Cows	(b) 3-12	(b) 9-12	5-15	(b) 7-20	(b) 10-25	(b) 8-20	10-20	15-60	(b) 10-20
Cows milked	2-5	3-5	2-5	3-7	2-5	2-7	3-6	2-7	2-6
Other cattle	(b) 3-15	6-12	(b) 3-15	(b) 2-20	(b) 11-30	4-20	6-15	15-40	10-15
Sows	0-2	0-2	0-2	0-4		0-1	0-2	0-3	0-3
Sheep									
Poultry	25-100	100	50-100	50-100	75-150	50-125	75-125	75-150	50-100
Per cent having tractors	8		7	7			25	40	30

(a) The 160-acre farms represent 15 per cent; the 240-acre farms, 5 per cent; the 320-acre farms, 25 per cent; the 480-acre farms, 13 per cent; the 640-acre farms, 8 per cent; the 800-acre farms, 7 per cent of all farms.

(b) Some have 30 head or more.

(c) About 13 per cent of the farms contain more than 1,000 acres but they are so variable in size that no attempt has been made to group them.

The other had the same acreage of corn but had 120 acres of grain sorghums.

On the other sizes of farms variations of a similar nature are to be noted. On all of these farms the pasture acreage was high. The number of cattle kept varied considerably and as a consequence it is not easy to determine modal groups. Most of the farms had the numbers shown but on many of them a much larger number was kept as indicated by the footnote at the bottom of the table.

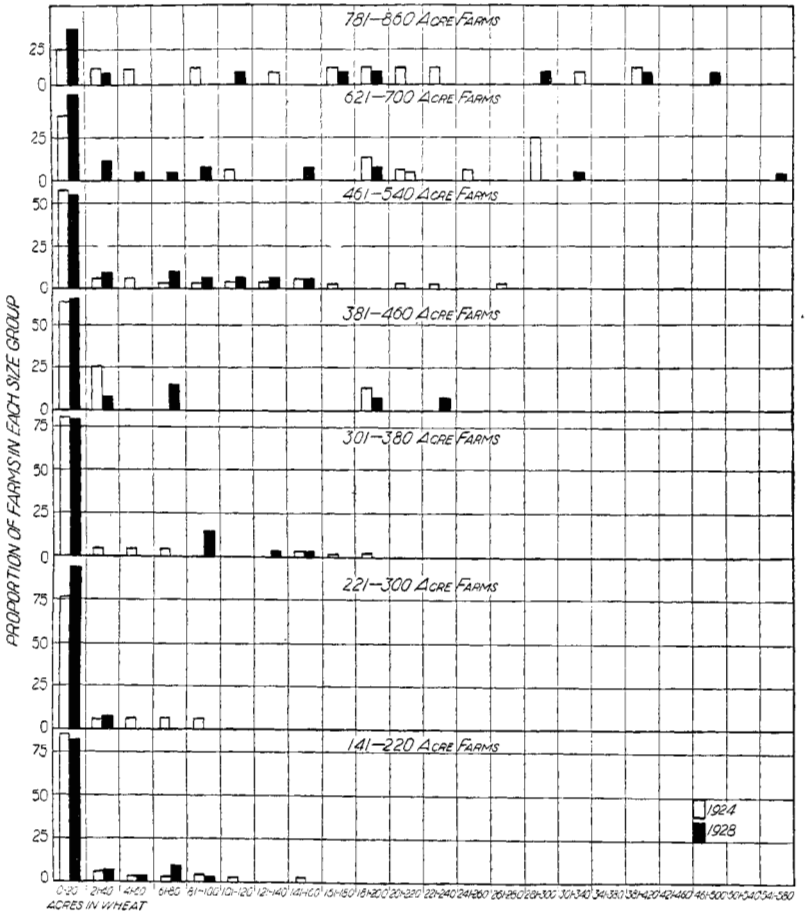


FIG. 42.—Proportion of farms of different sizes in Area 12 with specified acres of wheat in 1924 and 1928. The acreage of wheat has shifted somewhat in this area since 1924 but the majority of the farms still have rather small acreages. On the large farms the increases have been much greater.

Source: Adapted from data from assessors' rolls of Kansas counties.

Changes in Size and Organization of Farms from 1924 to 1928 in Area 12.—Figure 42 shows the relative proportion of the farms of different sizes with different acreages of wheat for the years 1924 and 1928 in Area 12. There has been some increase in the acreage of wheat since 1924. This area is really a live-stock and grazing area but recent developments in wheat production have resulted in an increased acreage of this crop. The principal increase probably has taken place on the larger farms where the combine is most widely used. However, most of the farmers still grow relatively small acreages as shown in figure 42.

Figure 42 is based only on certain selected townships in this area. It may be that there are other townships which are more strictly wheat townships and in them possibly a greater upward shift in acreage of wheat has taken place.