# THE DIVERSIFIED FARM

## FOREWORD

The conclusions of this bulletin are based upon records of farm operations in Texas. Specialists of the Extension Service, working with the farmers, made careful records of all their expenditures and all receipts; therefore, the earnings exhibited in the case of each farm may be accepted as correct.

This bulletin is not an expression of a theory of farm management; it is, a photograph of actual farming in Texas. It applies the acid test of experience to the several types of farming described.

The results establish beyond question the wisdom of farming under well matured plans of diversification as compared with the wisdom of hit-or-miss farming, and especially one crop cotton farming, even at the high prices of cotton that have prevailed during the past two years.

The outstanding fact of these records, covering two years, is that diversified agriculture in the South means success on the average of years; is an insurance against disaster due to fluctuations in the price of cotton.

Diversified agriculture does not mean abandonment of cotton; it means a system of farming that utilizes the idle time of the cotton farmer and enables him to grow other crops for sustenance and for profit without growing substantially less cotton.

# THE DIVERSIFIED FARM

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## CHAPTER I.

It is a well recognized fact that some farmers are better managers than others.   This variation in managerial ability exists in every community where farming is done, as farmers are found everywhere who are prosperous, while many of their neighbors find it difficult to make a bare living.   Various reasons are given to account for the successes and to explain the failures.   Good luck or misfortune, good health or sickness, long hours of hard work or laziness are among the reasons given by many people.   But while it is true that misfortune often overtakes many a well-planned undertaking, it is also true that the prosperous farmer is successful because he plans his farm business in accordance with the few fundamental principles which underly the successful management of a farm.   These principles stand out well when a careful comparison is made between the methods of the successful farmer and those of his less successful neighbor.

Such comparisons show that the farmers who are earning most for their year's work are more efficient in four respects than the farmers who are earning smaller incomes:

1.   They are putting in each year more hours of productive labor.
2.   They are cultivating more acres of crops per man.
3.   They are caring per man for more livestock.
4.   Their horses and equipment are kept employed to   a   greater extent.

This efficiency in farm operation is made possible by diversification. The fact that diversification makes greater profit possible will be demonstrated in Chapter II.   Planning the year's work for maximum profits will be discussed in Chapter III.   Efficiency in managing individual enterprises will be discussed in Chapter IV.   Charts showing the distribution of man labor on important crops are given at the close of the bulletin.   The remainder of this Chapter will be given to the presentation of the principles involved in the seasonable distribution of labor and the methods employed in securing and in compiling data upon which this treatise is based.

The more important factors which affect the farmer's earnings are shown in Table I.   In this table the farms are arranged in five groups. Farms on which the earnings are from $1.00 to $500.00 are placed in Group No. 1., from $500.00 to $1,000.00 in Group No. 2, from $1,000.00 to $1,500.00 in Group No. 3, from $1,500.00 to $2,000.00 in Group No. 4, and over $2,000.00 in Group No. 5.

# TABLE 1
## SOME SUCCESSFUL AND LESS SUCCESSFUL FARMS
(Averages taken from carefully collected records on 92 Texas farms for the year 1916)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Group | Number Farms in Groups | Farmer's Earnings | Hours of Productive Labor per yr. per man | Acres in crops per man | Value of livestock cared for per man | Hours of labor per yr. per horse |
| 1 | 12 | $307 | 2,103 | 31 | $558 | 515 |
| 2 | 23 | $760 | 2,432 | 48 | $651 | 561 |
| 3 | 16 | $1,261 | 2,671 | 54 | $761 | 609 |
| 4 | 20 | $1,759 | 2,763 | 55 | $822 | 747 |
| 5 | 21 | $2,843 | 3,173 | 64 | 852 | 760 |

The Phrase **Farmer's Earnings** as used at the head of column 3 and in other places in this bulletin means THE AMOUNT THE FARMER RECEIVES FOR HIS YEAR'S WORK AND MANAGERIAL ABILITY ABOVE INTEREST ON THE CAPITAL HE EMPLOYS AND ALL OTHER ITEMS OF FARM EXPENSES, INCLUDING A REASONABLE WAGE FOR THE WORK DONE BY THE OTHER MEMBERS OF HIS FAMILY.

It will be observed that the 12 farmers in Group 1 earned an average of $307 a year and that the average earnings of each group increases until the 21 farmers in Group 5 average $2,843.

The term **Productive Labor** at the head of Column 4 may be defined as labor put on anything that brings in money such as crops, live stock, fruit and so forth. The productive labor as summarized in this column ranges from an average of 2103 hours, or 210 ten-hour days in Group 1, to 3173 hours, or 310 days, in Groupe 5: that is, 50 per cent more of profitable employment is being found on their farms by the farmers of Group 5 than by those of Group 1. Column 5 shows that the farmers of Group 5 are cultivating twice as many acres per man employed as are the farmers of Group I. Column 6 indicates that 53 per cent more live stock is kept, and Column 7 that the work stock is employed 47 per cent more. The only magic in this increased efficiency is the magic of a well planned year's work.

## METHODS OF SECURING AND COMPILING THE DATA.

During the year 1915 visits were made to 87 farms in Red River, Anderson, Comanche, and Bexar Counties, and records covering the labor and financial transactions on each farm enterprise for the year were taken. In 1916, similar records were taken on 126 farms in the following counties: Anderson, Atascosa, Bexar, Brazos, Collin, Comanche, Coryell, Dallas, Falls, Freestone, Hunt, Harris, Kerr and Tarrant. This was done in cooperation with the local county demonstration agents. Table No. II gives the number of farms studied in each county and the county agents cooperating in the investigation.

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| County | Number of Records | | County Agent |
| --- | --- | --- | --- |
| | 1915 | 1916 | |
| Atascosa | .. | 13 | G. P. McLelland |
| Anderson | 25 | 4 | H. Gentry |
| Brazos | .. | 12 | C. L. Beason |
| Bexar | 25 | 8 | G. W. Hand |
| Comanche | 21 | 23 | D. F. Eaton |
| Collin | .. | 4 | L. F. Arnold |
| Coryell | .. | 5 | R. P. Elrod |
| Dallas | .. | 11 | C. O. Moser |
| | | | R. A. Hall |
| Falls | .. | 4 | N. C. Chaney |
| Freestone | .. | 3 | W. S. Symonds |
| Harris | .. | 23 | W. L. Stallings |
| Hunt | .. | 7 | J. H. Erickson |
| Kerr | .. | 5 | K. G. Baker |
| Tarrant | .. | 4 | H. M. Means |
| | | | W. R. Nisbet |
| Red River | 16 | | Wm. McMaster |

Representative farmers were chosen, each of whom was willing to spend from three to ten hours with the Farm Management Specialist in filling out a business record covering all of the activities of his farm for the preceding year.

Many farmers were found who keep financial records of sales and purchases; there were very few who did not remember how many hogs, cows, horses, sheep, chickens, etc., they had sold during the year and just what each lot brought. If the farmer's memory of a transaction chanced to be a little indefinite his wife and children were ready and accurate references. Averages from figures thus obtained on numbers of farms have proven to be very accurate, indeed.

The year's business was recorded and analyzed by enterprises. Each crop, for example, was charged with seed, rent, use of crop equipment, horse labor, fertilizers, and special expenses; such as, twine, crates, bags, etc., and was credited with sales, produce fed on the farm or food used in the home. As every farmer knows how many acres a day he can plow, plant, cultivate or harvest and at what seasons this work must be done, it was possible to get an accurate estimate of the amount of time put on each enterprise. The crops were charged with horse labor at the rate of 10 cents an hour as this was the average cost of horse labor for the farms visited. The horse account was credited with a like amount. Adjustments were made in regard to manure utilized. Interest

Adjustment were made in regard to manure utilized. Interest was charged at the rate of 6 per cent on the average inventoried value of livestock, on livestock equipment, and on crop equipment; money paid out for hired labor was entered as a general farm expense, and a charge was made to cover interest, depreciation and upkeep on general farm equipment such as buggies, engines ,shop outfit, etc. and on the home and other buildings that were not used for some specific farm enterprise. The charges to cover these and other miscellaneous Each class of live stock was charged with feed, with special equipment and with other expenses and was credited with sales, produce consumed on the farm and increase in inventoried values at the end of the year.

farm expenses of a general nature are called **overhead,** and are not distributed to the various enterprises. They are charged against the combination of enterprises as a whole. In conclusion, all expenses are charged against the particular enterprise for which they were incurred, excepting only overhead, hired labor, and the farmer's own 'time. Overhead and hired labor are charged against the total earnings of the farm. The remainder, which is called Farmer's Earnings, is regarded as the farmer's pay for his year's work.

## CHAPTER II.

### WHY DIVERSIFICATION PAYS.

The best-paying farms are diversified farms, but diversification is not the mere multiplication of farm enterprises. There are fundamental, scientific and economic principles involved. To define and to illustrate these principles is the purpose of this chapter. All the illustrations used are taken from actual farms, and they have an added significance in that they represent definite types of farming that are found everywhere in the State. The principles underlying diversity may be stated under seven heads.

1. By growing several crops the farmer may plant them in rotation in a given field and thus better control weeds, insects, and plant diseases.

2. By growing a legume in the rotation, and by raising livestock, soil fertility may not only be maintained but it may be increased.

3. By growing several crops a farmer is better able to escape the disasters that come from unseasonable weather, from periodic out breaks of insect pests, and from fluctuations in market prices.

4. By having farm products to market at several seasons of the year a farmer is able to escape high credit prices.

5. When livestock, especially cattle, are made a part of the plan of diversification, the natural growth in the size of the herds materially helps the farmer in the accumulation of wealth.

6. Diversification makes farm life more attractive.

7. The proper seasonal distribution of labor enables a farmer to utilize his own labor to a greater advantage and to economize in horse labor and equipment costs.

The first and second of these points are extensively dealt with in publications on the science of agriculture. The third, fourth, fifth, and sixth belong in the field of Farm Management but are so nearly self evident that they will not be discussed in this brief bulletin. The seventh constitutes the most fundamental of the farmers problems and its discussion will consume the major portion of this bulletin.

The growing of several crops and several kinds of livestock enables a farmer to employ himself, his boys, his work stock, and his equipment more uniformly throughout the various seasons of the year. He has remunerative employment at seasons when the one-crop farmer is partly or totally idle. He is also able to cut down the stress of work at the

seasons of the year when the one-crop farmer must work to the very limit of human endurance to care for his crop. This principle of an even demand for man labor, for horse labor, and for farm equipment is called SEASONAL DISTRIBUTION OF LABOR. It is the farmer's most important problem. The degree to which he solves it and applies it to his farming operations will be very largely the degree to which he attains financial success. The operation of this principle is unmistakably shown in Table No. 1. Its application is the test of diversification.

The remainder of this chapter will be devoted to the discussion of six farms that are typical of the various degrees of diversification. A one-crop cotton farm of the less efficient type will first be considered. Such farms are too common in many parts of the State. Following this, farms of varying degrees of diversity will be discussed. And last a well managed dairy farm, representing a maximum of diversity will be analyzed. These farms are represented by charts, which give both in figures and in a graphic way the hours of man labor per month. They show periods of high demand for labor and equipment and periods of low demand, and the resulting Farmer's Earnings.

FARM NUMBER 1.
A ONE-CROP FARM IN CENTRAL TEXAS
Figures based on 1916 Survey Records
25 ACRES OF COTTON
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $200 |
| Man Hours Per Month | 39 | 39 | 39 | 52 | 169 | 145 | 39 | 13 | 234 | 260 | 130 | 39 | |
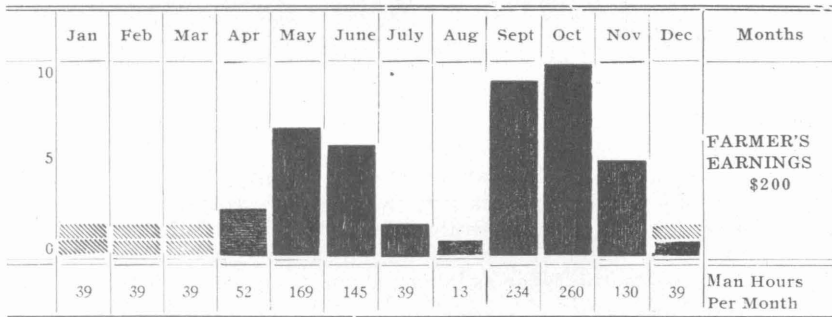
Labor fixed as to time.
Labor not fixed as to time.

Farm No. 1 consists of 25 acres. It is a one-man cotton farm. It is found to some etxent in nearly every part of the state and it is typical of the bottom-land plantation cotton patch. The question arises as to whether one man can not work more cotton than this. It may be answered as follows: One farmer doing all the work himself will find the number of acres of cotton he can care for limited by the number of acres he can pick in September and October. To pick each acre of cotton, about 9 1-2 hours an acre are required in September. This work increases to 10 1-2 hours an acre in October. If we assume there is no loss of time from rain or other causes during October and that the farmer averages ten hours a day in the field, he can attend unaided to the picking of 25 acres. If the far-

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mer's wife helps him in the field the two can pick more than 25 acres, but the farm then becomes something more than a one-man farm. If they have a family of children and keep them out of school to pick cotton the farm will expand from a one man farm to a family-sized farm and more acres may be planted.

To give a basis of comparison between a one-crop farm and a diversified farm it is desirable to discuss all crops and combinations of crops with a view to what one man can care for during the limiting season or the limiting month. The limiting month is the month during which the largest amount of labor is required to care for the crop. It determines the number of acres of the crop that can be handled. The limiting month for cotton is October. The limiting month for corn as it is ordinarily handled in Texas, is September, and so on with the other crops and with the various classes of live stock.

Farmers understand the limiting months for crops and while they do not consciously follow any mathematical formula in determining the amount of crops they can care for, the conclusions they arrive at may be reached in the following manner: There are on the average twenty-six working days in a month. If we assume that the farmer wishes to plan his work so as to average ten hours per day he will expect to work 10 times 26 or 260 hours a month. October is the limiting month on cotton. Ten and four-tenths hours of time is required in October to care for the picking of an acre of cotton. A farmer can, therefore, care for as many acres of cotton in October as ten and four tenths is contained in 260 which is 25. Twenty five acres of cotton then is what one man can care for by limiting the total amount of work in the limiting month to two hundred and sixty hours. (For a typical black land cotton farm see chart 1, page 16).

There are three important reasons why the one-crop cotton farmer did not prosper: First, he was moderately busy in May and June. In September and October he was very busy picking cotton, but his teams and equipment were comparatively idle. There was little work of any kind to be done in December, January, February, March, and August. If we define productive labor as labor on something that brings in money, he did only 1,200 hours of productive labor during the year. His horses and equipment were idle over half the time. He plowed his land with two horses and a walking plow because he could not afford to keep an extra horse and a disk or sulky plow just to prepare 25 acres of land.

Second, a sum for overhead expense amounting to about $350.00 had to be set aside before there was any real profit for labor. A farmer needs a house to live in, a windmill, a shop outfit, a buggy, a telephone and other conveniences regardless of whether he works 25 acres or 50 acres, regardless of whether he works for 120 days in the year or for 300 days in the year. These fixed expenses of farm operation are called farm overhead. The greater the volume of business done with a given amount of overhead expense, the greater will be the farmer's profit at the end of the year.

Third, year by year, bit by bit, this one crop farmer is disposing of

those plant food elements which are most needed and least abundant, while those elements which are abundant become less and less available as the organic matter is exhausted under such a cropping system.

<div align="center">

**FARM NUMBER 2.**
THE FIRST STEP TOWARD DIVERSIFICATION
Figures as reported by a Texas Farmer for his farm in 1916
AS THE DEMAND FOR LABOR IS DISTRIBUTED MORE EVENLY THROUGHOUT
THE YEAR THE FARMER'S EARNINGS INCREASE.
(What one man can care for)

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| 13 1-2 Acres of Cotton | 5 Acres of Sorghum | 1 Cow |
| 34 Acres of Corn and Cowpeas | 3 Horses | 25 Hens |



| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $739.00 |
| Man hours per month | 104 | 91 | 130 | 162 | 221 | 195 | 117 | 65 | 234 | 260 | 156 | 104 | |
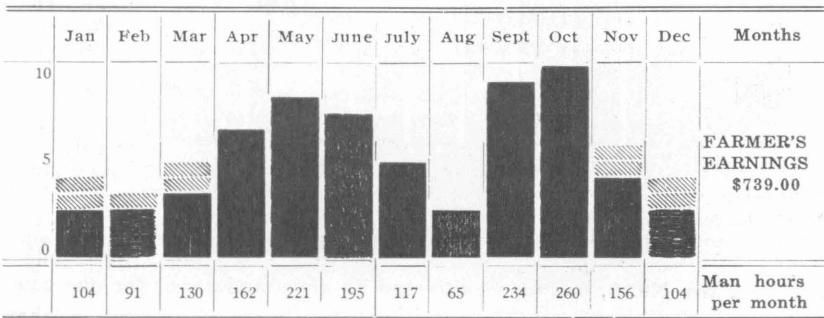
Labor fixed as to time.
Labor not fixed as to time.

On this farm one man cultivated 52 acres of crops and cared for one cow and 25 hens, as compared with only 25 acres of crops on Farm No. 1.

He did a little over 1,800 hours of productive man labor during the year as compared with only 1,200 hours on the one-crop farm. He did 600 hours or 60 ten-hour days more work and received $539 more net returns than did the one-crop farmer. This is $9.00 a day for the extra time. The demand for horse labor was such that he found it profitable to keep an extra horse and to use a three-horse team in the preparation of his land. The amount of crops cared for increased; the total overhead cost remained almost constant. This farmer is better able to maintain the fertility of the soil than is the operator of Farm No. 1. He rotates his crops, adds nitrogen by growing a legume, and supplies the soil with organic matter.

<div align="center">9</div>

## A DIVERSIFIED FARM

Figures as reported by a Texas Farmer for his farm in 1916

THOSE FARMERS WHO SO SYSTEMATIZE THEIR BUSINESS AS TO HAVE AN EVEN DEMAND FOR LABOR THROUGHOUT THE YEAR MAKE THE LARGEST PROFITS.

(What one man can care for)

| 10 Acres of Cotton | 5 Acres of Sorghum | 3 Horses |
| 20 Acres of Corn and Cowpeas | 4 Acres of Sudan Grass | 1 Cow |
| 10 Acres of Milo | 4 Acres of Peanuts | 30 Hogs |
| 1 Acre of Sweet Potatoes | | 60 Hens |



| Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|-----|-----|-----|-----|-----|------|------|-----|------|-----|-----|-----|--------|
| | | | | | | | | | | | | FARMER'S EARNINGS $967.00 |
| 156 | 143 | 156 | 208 | 260 | 247 | 182 | 156 | 247 | 234 | 195 | 156 | Man hours per month |

██ Labor fixed as to time.
▒▒ Labor not fixed as to time.
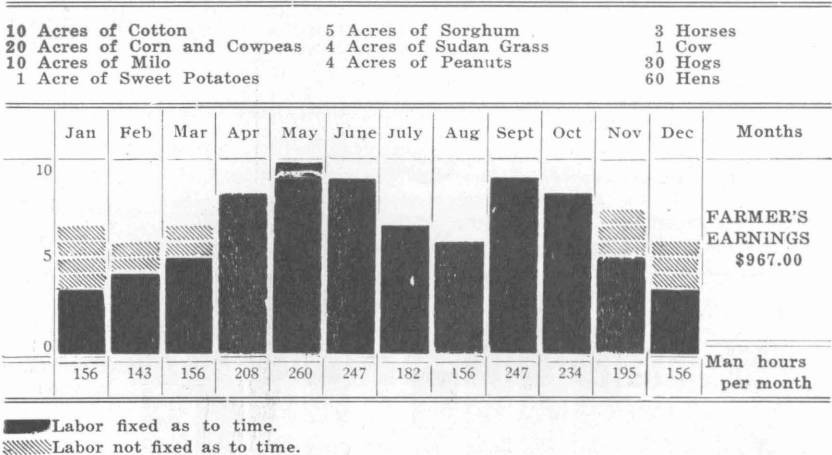
On Farm No. 3, one man cultivated 54 acres and cared for one cow, 30 hogs, and 60 hens. He put in about 2,400 hours of productive labor during the year. His horses and equipment were seldom idle. The total over-head costs were about the same as on Farm No. 1.

Farmer No. 3, grows leguminous crops and supplies the soil with organic matter. By adding phosphorous, and in rare cases potassium and lime, he can gradually increase the productivity of his soil. On Farm No. 1, it is necessary or will ultimately become necessary, (1) to buy prepared commercial fertilizer in increased quantities year by year, (2) to change the cropping system, or (3) to abandon the farm.

Farms, 1, 2, and 3, are small farms. Each operator, by exchange-ing work with his neighbors, is able to care for all the crops and live stock. Farm Number 1, is a one-crop farm. The operator makes $200.00. On farm number 2, the operator is diversifying to some extent. He made $739.00. Farm number 3, may be called a diversified farm, al-though the operator is not completely using his available time. He made a net income of $967.00. This shows what is possible on a farm where little or no labor is hired. Let us now examine three farms on which labor is hired to a considerable amount and the business is managed on a large scale. Will it pay to diversify under such conditions?

**FARM NUMBER 4.**

A PROSPEROUS NORTH TEXAS COTTON FARM IN 1916.

| 115 Acres of Cotton | 4 Acres of Sorghum | 4 Mules | 2 Hogs |
| 4 Acres of Corn | 1-4 Acre of Garden | 2 Cows | 35 Hens |

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | FARMER'S EARNINGS $1,950.00 |
| 15 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| | 182 | 164 | 169 | 247 | 481 | 424 | 190 | 130 | 1560 | 1560 | 702 | 182 | Man hours per month |
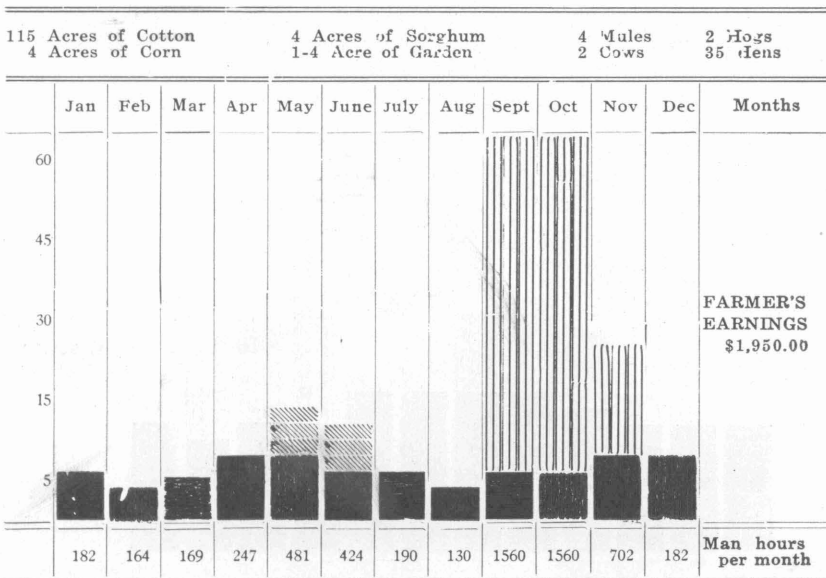
‖‖‖ Hired labor.

Total acres in crops, 123 1-4.

It is true that the more capital and labor a man manages the greater opportunity he has to make large profits. Merely increasing the acreage on a one-crop farm does not, however, eliminate the economic error of the system.

Farmer No. 4, kept his children out of school to pick cotton. The wife went to the cotton field. An undesirable class of itinerant labor was brought into the neighborhood. They became a burden to the community when the picking season was over. There was no chance for crop rotation and the maintenance of soil fertility. There was not enough money coming in from time to time to pay the current expenses. The farm was run on credit. If the cotton had failed the farmer would have had nothing to "fall back on" in a financial way.

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## FARM NUMBER 5.

### A NORTH TEXAS FARM WITH LESS COTTON AND MORE FEED.

| 60 Acres of Cotton | 11 Acres of Sorghum for Silage | 5 Horses |
| 8 Acres of Corn | 7 Acres of Feterita | 17 Stock Cattle |
| 12 Acres of Oats | 1-4 Acre of Sweet Potatoes | 5 Hogs |
| 4 Acres of Peanuts | 1-2 Acre of Garden | 75 Hens |

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | FARMER'S EARNINGS $2,925.00 |
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| | 208 | 208 | 208 | 247 | 546 | 364 | 260 | 260 | 650 | 650 | 312 | 208 | Man hours per month |

||| Itinerant labor hired
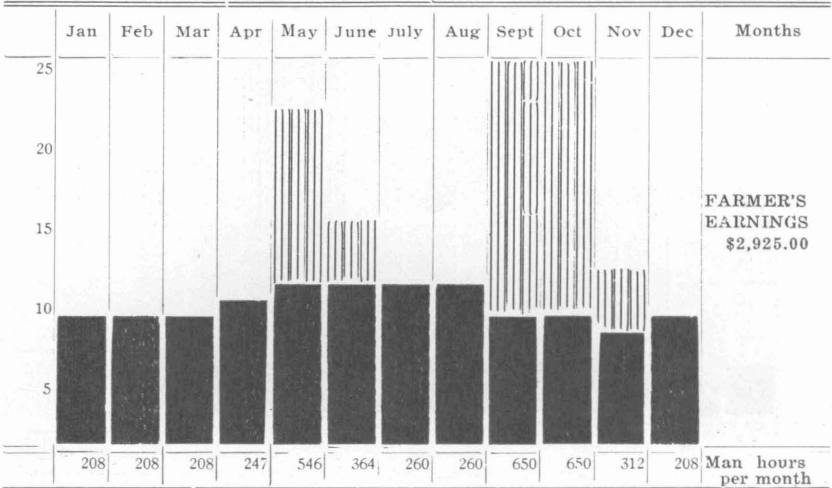
Total acres in crop 102 3-4

Farmer No. 5, is growing less cotton, more of other crops and is caring for considerable livestock. On this farm, men, teams, and equipment were seldom idle. The temptation to keep the children out of school to work in the cotton field was not so great, less itinerant labor was brought in to be supported by the community, credit was not so essential, the risk of crop failure was not so great, and the fertility of the soil is maintained. The Farmer's Earnings speaks for itself.

## FARM NUMBER 6.

### A NORTH TEXAS DAIRY FARM WITH SOME COTTON.

30 Acres of Cotton     15 Acres of Sorghum for Silage   5 Horses
45 Acres of Corn       10 Acres of Sorghum for Hay    20 Dairy Cows
25 Acres of Oats       1 1-2 Acres of Millet for Hay     8 Hogs
24 Acres of Wheat      1-4 Arce Garden               150 Hens

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $3,250 |
| | 416 | 416 | 416 | 416 | 572 | 572 | 520 | 52( | 624 | 624 | 468 | 416 | Man hours per month |
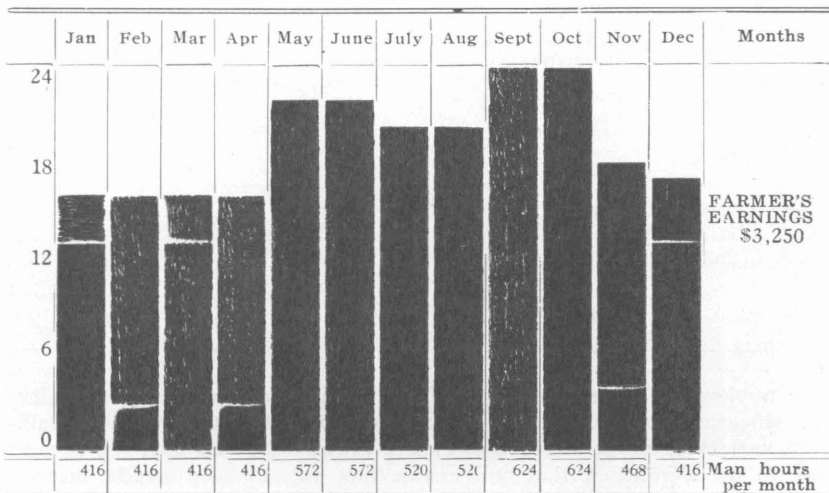
One man was hired by the year.
The boys helped when not in school.
Additional labor was hired when needed.
Total acres in crop, 150 3-4.

On farm No. 6, one man was hired by the year. The boys helped when not in school. Additional labor was hired as needed, there were comparatively no periods of idleness for men, teams, or equipment; a regular hand took the place of itinerant labor. Sales were made regularly to meet bills as they became due. Had one crop failed the entire year's work would not have been a loss. A definite rotation was followed and crop yields compared favorably with any in the community. The farmer's income, above 6 per cent interest on the money invested and all farm expenses, was $3,250.00.

A comparison of these six farms (See table No. III) shows that diversification pays, because a farmer who diversifies can so plan his years work as to take care of more acres of crops and more live stock than a farmer who confines himself to one or two crops.

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| SMALL FARMS | Type of Farm | Acres in Crops | | Value of Live Stock other than work stock cared for per Man |
| | | Per Man | Total | |
|---|---|---|---|---|
| Farm Number 1 | One-Crop Farm | 25 | 25 | 0 |
| Farm Number 2 | First Step Toward Diversification | 52 1-2 | 52 1-2 | $100 |
| Farm Number 3 | Well Diversified Farm | 54 | 54 | $495 |
| LARGE FARMS | | | | |
| Farm Number 4 | Cotton Farm | 50 | 123 1-4 | $78 |
| Farm Number 5 | Diversified Farm | 68 | 102 3-4 | $543 |
| Farm Number 6 | Dairy Farm | 57 | 150 3-4 | $760 |

In view of these facts and of the principles underlying diversity, diversification may be defined as that type of farming in which a sufficient variety of crops and live stock are grown: 1. So that the farmer may follow a rotation that will enable him (a) to keep weeds, insects, and plant disases under control, (b) to maintain the fertility of the soil; 2. So that he may have something to sell at each season of the year and thus escape ruinous credit costs; 3. So that a bad season may not find him without anything to sell; and 4. So that he may utilize to the fullest extent his time, his work stock, and his equipment.

## CHAPTER III.

### Planning the Year's Work.

In Chapter II diversification was defined, the principles underlying it were enumerated, and by a comparison of six typical farms ranging from a one-crop to a well-diversified farm its financial advantages were set forth. In this chapter the problem of planning a year's work is discussed.

So to plan his year's work as to yield him a maximum yearly return, the farmer needs to know the relative profitableness of the various farm enterprises that are adapted to his soil and climate. With these facts and with his experience as to the seasonal requirements for labor, it is possible for him to determine the combination of enterprises that is most likely to return him most for his year's work.

THE USE OF FARM ACCOUNTS.—Farmers who do not keep accounts will find Table IV., page 15 a guide to relative profitableness. For the method by which these figures were obtained see page 4.

RELATIVE PROFITABLENESS OF FARM ENTERPRISES AS SHOWN BY AVERAGE FIGURES TAKEN FROM FARM MANAGEMENT SURVEY RECORDS IN Anderson, Atascosa, Bexar, Brazos, Collin, Comanche, Coryell, Dallas, Falls, Harris Tarrant, Kerr, and Red River Counties.

FOR THE YEAR 1916.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Enterprise | Number of Farms Reporting | Total Number of Acres | Returns per Acre for Man Labor | Man Hrs of Labor per Acre | Returns per Hour for Man Labor |
| Sorghum for Silage | 6 | 80 | $25.92 | 32 | 81c |
| Small Grain (Oats and Wheat) | 67 | 2444 | 7.80 | 13 | 60c |
| Sorghum for Hay | 58 | 337 | 17.40 | 29 1-2 | 59c |
| Sweet Potatoes | 28 | 53 | 44.24 | 79 | 56c |
| Peanuts | 36 | 564 | 18.24 | 38 | 48c |
| Cotton | 75 | 2882 | 22.00 | 48 | 46c |
| Grain Sorghum | 24 | 196 | 11.88 | 27 | 44c |
| Corn | 104 | 2200 | 8.40 | 20 | 42c |
| Barley | 7 | 36 | 3.60 | 9 | 40c |
| Millett | 7 | 45 | 1.90 | 10 | 18c |
| Blackeyed Peas | 20 | 240 | 6.37 | 49 | 13c |
| Poultry | | | | | 46c |
| Hogs | | | | | 34c |
| Cattle | | | | | 29c |

FOR THE YEAR 1915.

| | | | | | |
|---|---|---|---|---|---|
| Sweet Potatoes | 9 | 10 | $77.77 | 77 | $1.01 |
| Bermuda Grass | 4 | 63 | 18.72 | 26 | 72c |
| Sorghum for Hay | 52 | 458 | 10.73 | 29 | 37c |
| Peanuts | 19 | 173 | 11.60 | 40 | 29c |
| Cotton | 46 | 1429 | 10.08 | 42 | 24c |
| Corn and Cowpeas | 15 | 213 | 7.13 | 31 | 23c |
| Corn | 66 | 1690 | 5.06 | 23 | 22c |
| Barley | 2 | 50 | 1.98 | 9 | 22c |
| Grain Sorghum | 26 | 288 | 4.93 | 29 | 17c |
| Poultry | | | | | 37c |
| Cattle | | | | | 24c |
| Hogs | | | | | 16c |

In using this table and in planning the year's work one should bear in mind that the object is not to figure in advance the exact profits for the next twelve months, but rather to determine the combination of enterprises that is most likely to give maximum profits. A wrong emphasis is often placed on accounts. They look to the future and not to the past. It is well for a farmer to know what he made last year, but such knowledge becomes exceedingly valuable when it helps him in planning what crops he will grow next year, and how much of each crop, what livestock he will keep and how much. The problem is how to fit these enterprises together so as to give the greatest returns for next year. The profit expected from each enterprise must be an estimate as the time of harvest is in the future. The estimate, however, may be based on past experience, and if this experience be made certain by a system of accounts the farmer has a most valuable guide.

PLANNING THE YEAR'S WORK.—Using the estimates given in Table IV. as a guide, we find that a farmer by planting 60 acres of cotton and by hiring such labor as he is unable to do himself, would earn $766 for his year's work. This conclusion is arrived at in Financial Statement Number 1., of Chart Number 1.

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | FARMER'S EARNINGS $766.00 |
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| | 96 | 96 | 96 | 126 | 402 | 360 | 96 | 30 | 558 | 624 | 312 | 96 | Man hours per month |
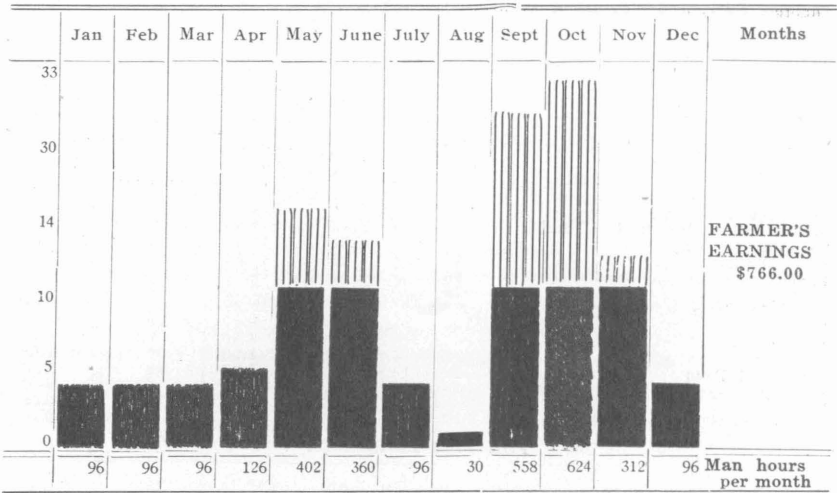
Hired labor.

## FINANCIAL STATEMENT NUMBER 1.

60 acres of cotton at $ 22.00 an acre would return.... $1,320.00
Hired labor necessary $204.00
Overhead expense.... $350.00        554.00
_____

FARMER'S EARNINGS ................. $ 766.00

On such a farm are periods of comparative idleness for men, teams, and equipment, and it is necessary to hire labor in the spring and fall, the busiest seasons of the farm year.

The farmer meets this requirement by hiring transient labor to an amount equivalent to 100 days. Last year it was hard to secure hands to pick cotton. This year the labor scarcity is a problem of grave importance to the farmer and to the nation. No man can tell what the labor situation may be next year and later.

In 1916 the one-crop farmer growing nothing but cotton and DOING ALL OF THE WORK HIMSELF earned only $200 (See Farm Number 1, page 7). He, his teams, and his equipment were idle over half the time. By growing 60 acres of cotton and by hiring additional labor as needed, he could have earned $766, as we have just shown in Chart No. 1 and in Financial Statement No. 1. By diversifying he might have earned more.

In view of the labor problem and the possibilities of diversification let us see how the small farmer may increase his profits without hiring labor, and from what combination of enterprises he may reasonably
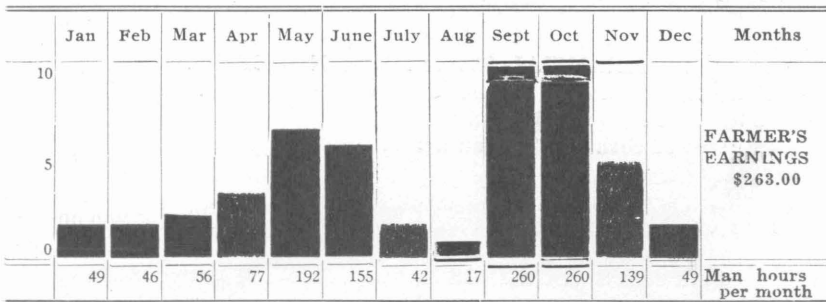
16

expect the greatest returns. Let us first see what a combination of corn and cotton will do in the way of bringing increased returns. Then let us add other crops until a combination has been found that will yield maximum returns.

The diversifying farmer would reason pretty much as follows: Corn is a crop that partially competes with cotton for labor. (See Charts 8 and 14 pages 25 and 28.) On cotton there is some idle time in September, the month of maximum labor on corn, October the month of maximum work on cotton, is a comparatively idle period for corn and, furthermore, corn is planted earlier in the spring than is cotton. For these reasons 8 acres of corn may be worked at times when the cotton requires little attention. The addition of 8 acres of corn would, therefore, make necessary a reduction in cotton of only 1-5 of an acre, an amount which is neglible from a practical standpoint. The following table will show that this combination is more profitable than cotton alone, when no more is grown than can be cared for by one man:

8 acres of corn at $8.40 an acre will return .......... $67.20
1-5 acre less cotton at $22.00 is ...................... 4.40
This combination gives an increased profit over cotton
   alone of ................................... $62.80

The distribution of man labor on the combination of corn and cotton is shown in Chart No. 2, and a financial statement of the amount the combination will return follows the chart.

**CHART NUMBER 2.**
DISTRIBUTION OF MAN LABOR ON 24 4-5 ACRES
OF COTTON AND 8 ACRES OF CORN
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | FARMER'S EARNINGS $263.00 |
| 0 | | | | | | | | | | | | | |
| | 49 | 46 | 56 | 77 | 192 | 155 | 42 | 17 | 260 | 260 | 139 | 49 | Man hours per month |

**Financial Statement Number 2.**

24 4-5 acres of cotton at $22.00 an acre will return..... $545.60
8 acres of corn at $8.40 an acre will return............ 67.20

                                                          $613.40
Less overhead expense ........................... 350.00

        FARMER'S EARNINGS ...................... $263.40

17

This combination would give the farmer 1,342 hours of productive work, and a return of $263.00.
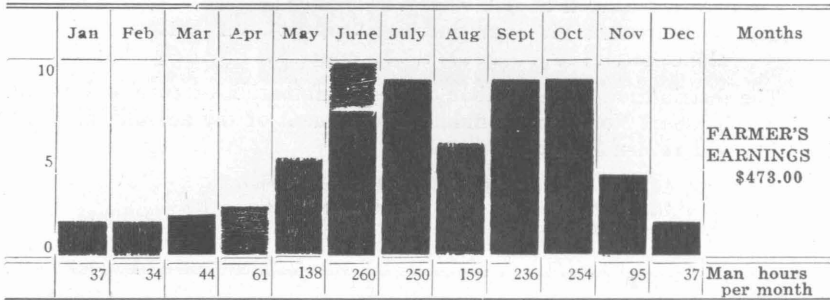
As there is still idle time in June, July, and August as shown by Chart two, 49 acres of fall sown small grain might be grown. (For seasonal distribution of labor on small grains see Chart Number 9, page 33). This would make necessary a reduction of the cotton to 17 acres. Such a combination would increase the returns by $210.60 as follows:

49 acres of small grain at $7.80 an acre would yield....$382.20
7 4-5 acres less cotton at $22.00 an acre would be...... 171.60

The increased profit for the year's work over previous
combination is ....................................$210.60

The seasonal distribution of labor on a combination of cotton, corn, and small grain which one man could care for without hiring additional labor is given in Chart 3.

**CHART NUMBER 3.**
DISTRIBUTION OF MAN LABOR ON 49 ACRES OF SMALL GRAIN, 17 ACRES OF COTTON AND 8 ACRES OF CORN.
(What one man can care for)



| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | FARMER'S EARNINGS $473.00 |
| 0 | | | | | | | | | | | | | |
| | 37 | 34 | 44 | 61 | 138 | 260 | 250 | 159 | 236 | 254 | 95 | 37 | Man hours per month |

### FINANCIAL STATEMENT NUMBER 3.
17 acres of cotton at $22.00 an acre.................$374.00
8 acres of corn at $8.40 an acre ................... 67.20
49 acres of corn at $7.80 an acre ................. 382.20

                                                      $823.40
Less overhead expense .......................... 350.00

FARMER'S EARNINGS .....................$473.40

This combination furnishes 1600 hours of productive labor during the year for which the farmer earns $473.00.

An examination of Chart 3 will show that une is fully and July, September, and October are almost entirely occupied, but there are still comparatively idle periods in August and in the winter months. As grain sorghum requires a maximum amount of labor in August (See Chart Number 10, page 26) 16 acres may be grown if the small grain in combination number 3 be reduced from 49 acres to 42 acres and the cotton from 17 to 14 acres. This would give a combination which would exceed the previous one in profitableness by $69.40 as shown on page 19.
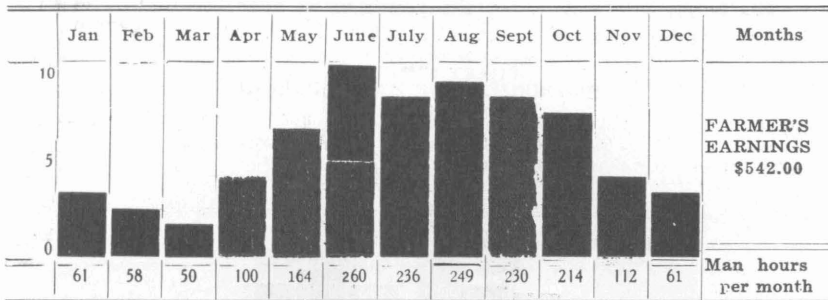
18

16 acres of grain sorghum added at $11.88 an acre would
return ..........................................$190.00
3 acres less cotton and 7 acres less small grain means
a reduction of only .............................. 120.60

The increased profit over the previous combination is...$ 69.40

### CHART NUMBER 4.
DISTRIBUTION OF MAN LABOR ON 16 ACRES GRAIN SORGHUM, 42 ACRES
SMALL GRAIN, 14 ACRES COTTON, AND 8 ACRES CORN.
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | FARMER'S EARNINGS $542.00 |
| 5 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| | 61 | 58 | 50 | 100 | 164 | 260 | 236 | 249 | 230 | 214 | 112 | 61 | Man hours per month |

## FINANCIAL STATEMENT NUMBER 4.

14 acres of cotton at $22.00 .......................$308.00
8 acres of corn at $8.40 .......................... 67.20
42 acres of small grain at $7.80 .................. 327.60
16 acres of grain sorghums at $11.88 .............. 190.00

$892.80
Less overhead expense ............................. 350.00

FARMER'S EARNINGS .....................$542.80

This combination furnishes 1800 hours of productive labor during the
year and returns $542.00.

An examination of Chart No. 4 will show that the summer is well
occupied but that there is opportunity to add other enterprises in the winter
and spring months. The addition of some live stock will bring added re-
turns. A flock of poultry may be kept on which the maximum amount
of work comes in March and April when the chickens are being hatched.
A herd of hogs that requires little work in the summer months while on pas-
ture may be cared for and the pasture crop may be planted in April cr
May. This livestock and the pasture together with a cow or two to fur-
nish milk and butter for home consumption may be added by reducing the
small grain from 42 to 20 acres and the cotton from 14 to 12 acres. The
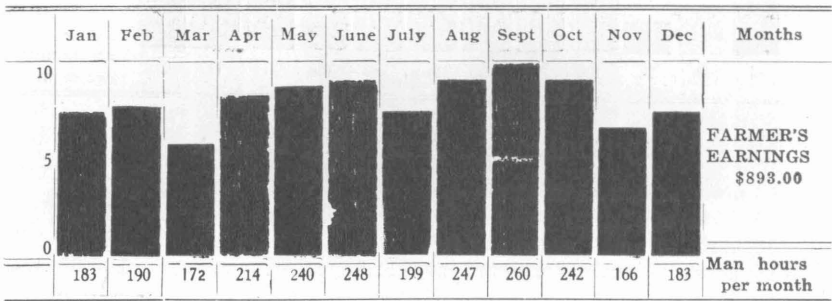results of these changes are as follows:

19

30 hogs and 4 acres of Sudan grass for pasture will
return ........................................$371.00
75 hens will return ............................ 124.20
1 milch cow will return ........................ 70.60

  TOTAL ....................................$565.80
22 acres less small grain at $7.80 an acre..$171.60
2 acres less cotton at $22.00 an acre...... 44.00

                                    $215.60    $215.60

The increase of profit for the year's work over the prev-
ious combination is ............................$350.20

**CHART NUMBER 5.**
DISTRIBUTION OF MAN LABOR ON

30 Hogs            4 Acres Sudan Pasture        8 Acres Corn and Cowpeas
75 Hens           16 Acres Grain Sorghum       12 Acres Cotton
1 Milch Cow       20 Acres Small Grain
                  (What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | FARMER'S EARNINGS $893.00 |
| 0 | | | | | | | | | | | | | |
| | 183 | 190 | 172 | 214 | 240 | 248 | 199 | 247 | 260 | 242 | 166 | 183 | Man hours per month |

## FINANCIAL STATEMENT.

12 acres of cotton at $22.00 an acre .................$264.00
8 acres of corn and cowpeas ...................... 67.20
20 acres of small grain at $7.80 an acre ............. 156.00
16 acres of grain sorghum at $11.88 ................ 190.00
4 acres of Sudan grass and 30 hogs .................371.00
75 hens ......................................... 124.20
1 milch cow ..................................... 70.60

                                                $1,243.00
Less overhead expense of...................... 350.00

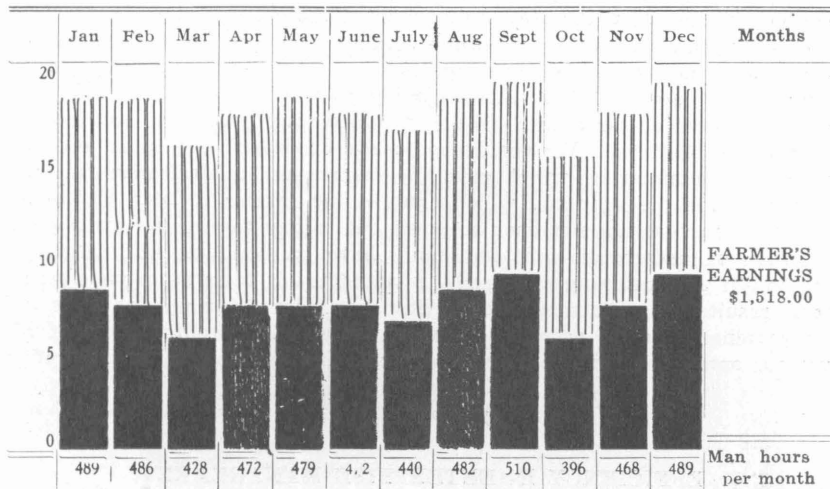  FARMER'S EARNINGS .....................$  893.00

The distribution of labor as shown by Chart number 5 is compar-
atively even throughout the year. The chart represents a one-man farm
well organized. By hiring a regular hand for the year, by adding cattle to
his business, by growing less grain, and sufficient silage for feed, and by

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increasing the number of hogs kept, the operator might effect a combination by which he would earn $1,518.00. His acreage need not be increased. Such a combination is shown in chart No. 6.

### CHART NUMBER 6.
DISTRIBUTION OF MAN LABOR ON

| 20 Dairy Cows | 20 Acres Sorghum for Silage | 5 Acres Cotton |
|---|---|---|
| 40 Hogs | 6 Acres Sudan Pasture | 8 Acres Corn |
| 75 Hens | 5 Acres Barley Pasture | 16 Acres Grain Sorghum |
| | (What two men can care for) | |



| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

FARMER'S
EARNINGS
$1,518.00

| 489 | 486 | 428 | 472 | 479 | 4,2 | 440 | 482 | 510 | 396 | 468 | 489 | Man hours per month |

Hired Labor

## FINANCIAL STATEMENT NUMBER 6.

| | |
|---|---|
| 20 dairy cows and 20 acres of sorghum for silage.....$1,324.80 | |
| 40 hogs, 6 acres Sudan grass and 5 acres barley pasture | 501.50 |
| 75 hens ........................................ | 124.20 |
| 5 acres of cotton at $22.00 an acre .............. | 110.00 |
| 8 acres of corn at $8.40 an acre ................. | 67.20 |
| 16 acres grain sorghum at $11.88 an acre ........... | 190.00 |
| | $2,317.70 |
| Paid for hired labor ................$450.00 | |
| Overhead expense .................. 350.00 | 800.00 |
| FARMER' EARNINGS ...........................$1,517.70 | |

CONCLUSION.—In Chapter II it was demonstrated by a comparison of six farms that diversified farming is much more profitable than single-crop farming. In Chapter III, the question of combining farm enterprises

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to give maximum profits has been discussed. In combining enterprises for maximum profits a farmer should know the relative profitableness of the enterprises which are adapted to his farm (See "The Use of Farm Accounts," page 14). He should know, also, the seasonal demand for labor on these enterprises. Farmers know the seasonal labor demand on enterprises with which they are experienced. For the use of farmers who wish to consider enterprises with which they have not had experience we give in the back of this bulletin such labor distribution charts as we have available at this time.

A farmer may reorganize his cropping system for greater profit as we have reorganized the cropping system of the cotton farm, Chapter III. Starting with the amount of cotton one man could care for and using average returns as reported on one hundred and twenty-six farms in 1916 we first added 8 acres of corn. This combination showed an increased profit of $62.80 over cotton alone. We next added small grain and obtained an increase of $210.00. We continued to add crops and live stock until we reached a combination which gave the farmer and a hired man full employment for the year and which enabled the farmer to earn $1,518.00.

The purpose has not been to point out to any farmer the exact combination of enterprises that he should have on his farm but to give a method of so combining enterprises adapted to his farm as to yield maximum results. Any farmer by observing the seasonal demand for labor and by keeping sufficient accounts to show the relative profitableness of his various enterprises will be able to plan combinations for maximum profits.

## CHAPTER IV.

### EFFICIENCY IN ENTERPRISE MANAGEMENT.

The planning of the year's work so as to have a combination of enterprises that will yield maximum returns is the farmer's most important Farm Management problem, but along with it goes the efficient management of livestock and of crops.

HORSES.—The cost of horse labor is an important item for the consideration of the farmer.

On 54 farms out of 94 the average cost of horse labor in 1916 was 7 cents an hour.

On 29 of these 94 farms the average cost of horse labor was 12 cents an hour

On 11 of these 94 farms the average cost of horse labor was 20 cents an hour.

Successful farmers are reducing their cost of horse labor in three ways:

First:—By choosing cropping systems that will cause an even demand for labor throughout the year and by keeping only such horses as are actually needed to do the farm work. This fact is shown by the following figures taken from 118 survey records: The average cost of horse labor on diversified farms where the average Farmer's Earnings was over $2,000.00, was 9 cents an hour. On less diversified farms where the

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average Farmer's Earnings was below $1,000.00 the cost of horse labor was 12 cents an hour. On one-crop farms the cost of horse labor was 15 cents an hour.

Second.—By economical feeding. On farms where pasture was furnished for work stock the average cost of feed per horse was $56.00; the average cost of horse labor was 11 cents an hour. On farms where no pasture was furnished for the work stock, the average cost of feed per horse was $67.00; the average cost of horse labor was 14 cents an hour.

Third.—By working brood mares and raising colts. Our records show that the average cost of horse labor on farms where colts were raised was 7 cents an hour, on farms where no colts were raised the average cost of horse labor was 12 cents an hour.

CATTLE: Feeding balanced rations, breeding up the herds with bulls of high producing strains and the prevention of disease, tend to make cattle on the farm more profitable and the Farmer's Earnings greater. (For further references see Extension Bulletin, B-4 on "The Dairy Cow").

HOGS: Farmers who feed economical and well balanced rations usually make money on hogs; farmers who raise hogs in a pen on "corn and water" often lose money on them.

102 survey reports given by farmers raising hogs in various parts of Texas show the following results:

Hogs raised on pasture:

Average returns per man hour of labor...    .50
Average net **profit** per farm............$123.00

Hogs raised with no pasture:

No returns for man labor................Loss
Average **loss** per farm.................$18.00

The following crops are being profitably hogged off in Texas: Small grain, Sudan grass, cowpeas, peanuts, and Bermuda grass. Native pasture is being used where available.

POULTRY: Of 118 farmers in various parts of the State, whose farm records we secured in 1916, 112 kept poultry.

Of the 112 flocks only 8 show a loss.

The average return for labor was 46 cents an hour.

The average net profit per farm was $100.00.

A small flock of poultry on a general farm converts waste feed into profit.

By giving the hens balanced rations at the proper seasons, by producing infertile eggs, by marketing these eggs cooperatively, and by the prevention of diseases, farmers may make the poultry a source of profit even greater than the average figures show.

CROPS: The most successful farmers secure crop yields a little above the average.

One hundred and two 1916 farm management survey records show the following results:

**Averages for Farms where the Farmer's Earnings was over $2,000.00.**

Yield of corn, 21 bushels per acre.

Yield of cotton, .43 bales per acre.
**Averages for Farms where the Farmer's Earnings was less than $1,000.00**
Yield of corn, 17 bushels per acre.
Yield of cotton, .23 bales per acre.

The increased crop yields on the more profitable farms were brought about by (1) early fall breaking; (2) the maintainance of soil fertility by the addition of organic matter, by the growth of leguminous crops, by the addition of those chemical elements necessary to plant growth which were deficient in the soil, and by terracing the land to prevent erosion; (3) the use of good seed and proper methods of planting; (4) proper cultivation to start the young plants quickly, to kill weeds and to maintain the soil mosture; (5) the use of chemicals and the adoption of tillage methods and other farm practices that tend to eliminate losses caused by insect pests and plant diseases.

The diversified farmer who makes each enterprise return a maximum profit earns most for his year's work. A poor paying enterprise, is to the diversified farm, what a "boarder cow" is to the herd of high producing dairy cows. The diversifying farmer may keep a record on his different farm enterprises, eliminating or adjusting those that are not profitable just as the dairyman keeps a record on his herd to eliminate the poor producing cows.      Appendix

# SEASONAL DISTRIBUTION OF MAN LAFOR ON A NUMBER OF IMPORTANT CROPS AS GROWN IN TEXAS IN 1916.

**CHART NUMBER 7.**
DISTRIBUTION OF MAN LABOR ON 37 ACRES OF PEANUTS
(What one man can care for—labor of threshing not included)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | FARMER'S EARNINGS $324.00 |
| 5 | | | | | | | | | | | | | |
| | 52 | 52 | 52 | 39 | 182 | 260 | 145 | 39 | 221 | 221 | 78 | 52 | Man hours per month 37 acres |
| | 1.4 | 1.4 | 1.4 | 1 | 5 | 7 | 4 | 1 | 6 | 6 | 2.1 | 1.4 | Man hours per month 1 acre |
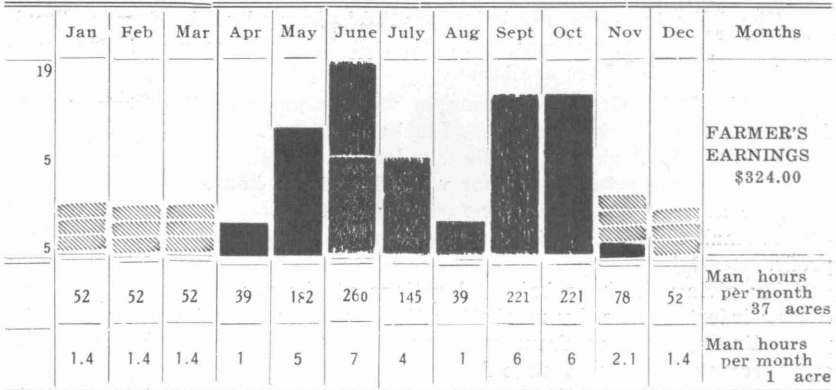
▀▀▀Labor fixed as to time.

▨▨▨Labor not fixed as to time.

LABOR RETURNS PER ACRE $18.24

(The distribution of labor was determined by averaging reports given by 28 farmers in Anderson, Brazos, Freestone, and Harris Counties.)

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## CHART NUMBER 8.

### DISTRIBUTION OF MAN LABOR ON 70 ACRES OF CORN.
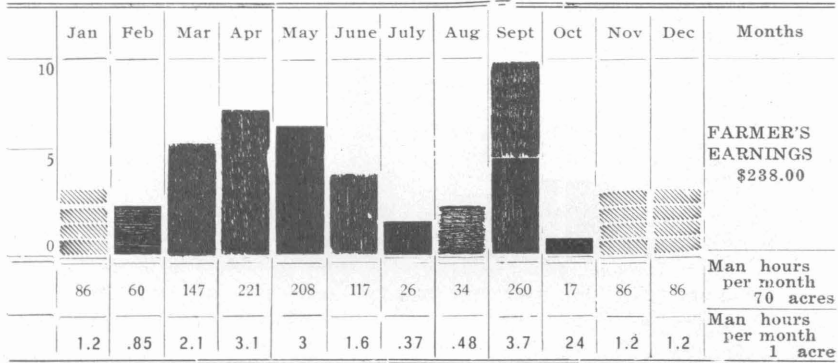
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 86 | 60 | 147 | 221 | 208 | 117 | 26 | 34 | 260 | 17 | 86 | 86 | Man hours per month 70 acres |
| | 1.2 | .85 | 2.1 | 3.1 | 3 | 1.6 | .37 | .48 | 3.7 | 24 | 1.2 | 1.2 | Man hours per month 1 acre |

FARMER'S EARNINGS $238.00
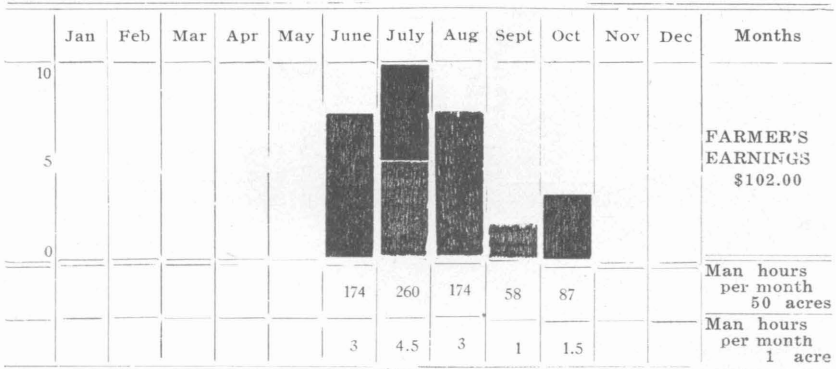
■■■■Labor fixed as to time.

▨▨▨Labor not fixed as to time.

### LABOR RETURNS PER ACRE $8.40.
Man hours of labor per acre 20—Returns per hour for man labor 42 cents.

(The distribution of labor was determined by averaging reports given by 28 farmers in Anderson, Atascosa, Bexar, Brazos, Collin, Comanche, Coryell, Dallas, Falls, Freestone, Hunt, Harris, Tarrant and Kerr Counties.)


## CHART NUMBER 9.

### DISTRIBUTION OF MAN LABOR ON 58 ACRES OF FALL-SOWN SMALL GRAIN

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 174 | 260 | 174 | 58 | 87 | | | Man hours per month 50 acres |
| | | | | | | 3 | 4.5 | 3 | 1 | 1.5 | | | Man hours per month 1 acre |

FARMER'S EARNINGS $102.00
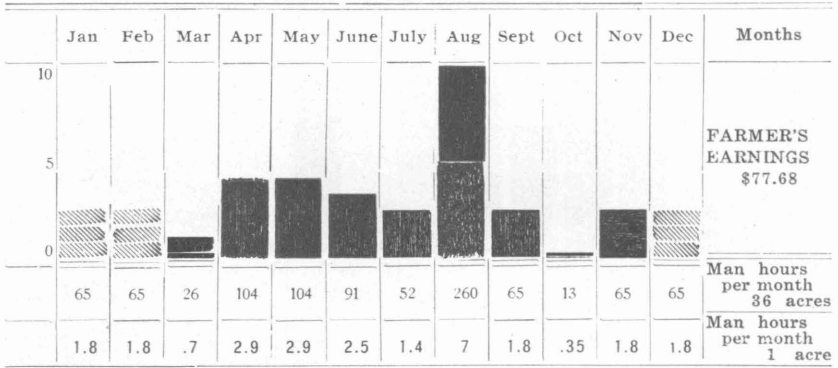
### LABOR RETURNS PER ACRE $7.80.
Man hours of labor per acre 13—Returns per hour for man labor 60 cents.

DISTRIBUTION OF MAN LABOR ON 58 ACRES OF FALL-SOWN SMALL GRAIN
(The distribution of labor was determined by averaging reports on 565 acres of small grain given by 10 farmers in Comanche, Dallas, Hunt and Tarrant Counties.)

## DISTRIBUTION OF MAN LABOR ON 36 ACRES OF GRAIN SORGHUM

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $77.68 |
| | 65 | 65 | 26 | 104 | 104 | 91 | 52 | 260 | 65 | 13 | 65 | 65 | Man hours per month 36 acres |
| | 1.8 | 1.8 | .7 | 2.9 | 2.9 | 2.5 | 1.4 | 7 | 1.8 | .35 | 1.8 | 1.8 | Man hours per month 1 acre |

Labor fixed as to time.
Labor not fixed as to time.
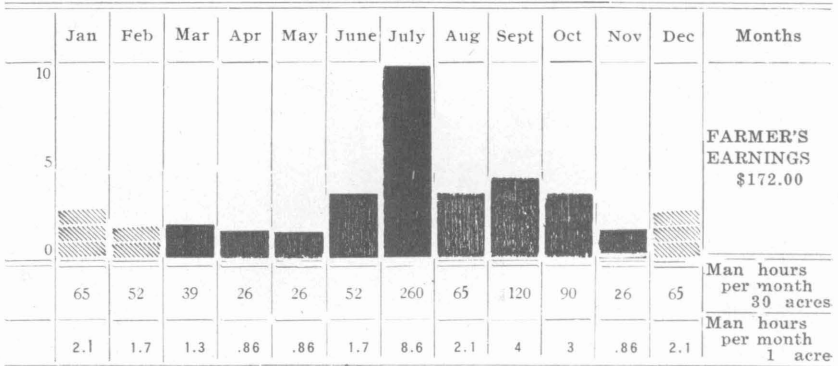
### LABOR RETURNS PER ACRE $11.88

Man hours of labor per acre 27—Returns per hour for man labor 44 cents.

(The distribution of labor was determined by averaging reports as given by 21 farmers in Atascosa, Comanche, Collin, Coryell, Dallas and Hunt Counties)

## DISTRIBUTION OF MAN LABOR ON 30 ACRES OF SORGHUM FOR HAY

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $172.00 |
| | 65 | 52 | 39 | 26 | 26 | 52 | 260 | 65 | 120 | 90 | 26 | 65 | Man hours per month 30 acres |
| | 2.1 | 1.7 | 1.3 | .86 | .86 | 1.7 | 8.6 | 2.1 | 4 | 3 | .86 | 2.1 | Man hours per month 1 acre |

Labor fixed as to time.
Labor not fixed as to time.

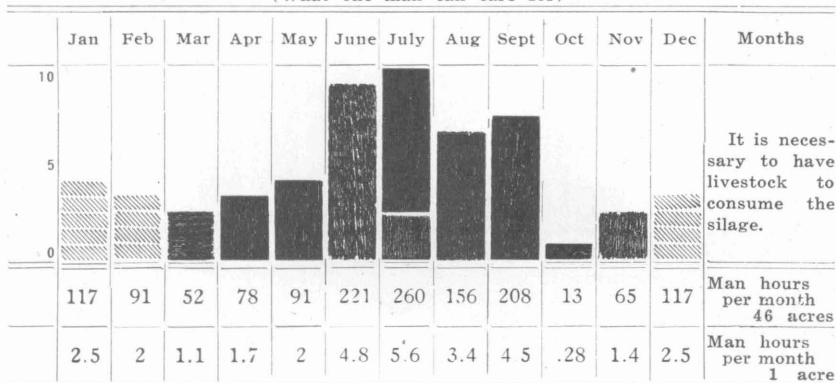### LABOR RETURNS PER ACRE $17.40

Man hours of labor per acre 29 1-2—Returns per hour for man labor 59 cents.

(The distribution of labor was determined by averaging reports given by 12 farmers in Anderson, Comanche, Dallas, Hunt, and Kerr Counties on their sorghum crop for 1916)

## CHART NUMBER 12.

### DISTRIBUTION OF MAN LABOR ON 46 ACRES OF SORGHUM FOR SILAGE

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | It is necessary to have livestock to consume the silage. |
| | 117 | 91 | 52 | 78 | 91 | 221 | 260 | 156 | 208 | 13 | 65 | 117 | Man hours per month 46 acres |
| | 2.5 | 2 | 1.1 | 1.7 | 2 | 4.8 | 5.6 | 3.4 | 4 5 | .28 | 1.4 | 2.5 | Man hours per month 1 acre |

Labor fixed as to time.

Labor not fixed as to time.

### LABOR RETURNS PER ACRE $25.92

Man hours of labor per acre 32—Returns per hour for man labor 81 cents.

(The distribution of labor was determined by averaging reports given by 6 farmers in Bexar, Comanche, Hunt and Harris Counties on their 1916 crops)

## CHART NUMBER 13.

### DISTRIBUTION OF MAN LABOR ON 25 ACRES OF COTTON IN SOUTH TEXAS

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $190.50 |
| | 26 | 26 | 39 | 52 | 182 | 156 | 39 | 143 | 260 | 169 | 52 | 26 | Man hours per month 25 acres |
| | 1 | 1 | 1.5 | 2 | 7.3 | 6 2 | 1.5 | 5.7 | 10.4 | 6.7 | 2 | 1 | Man hours per month 1 acre |

Labor fixed as to time.

Labor not fixed as to time.
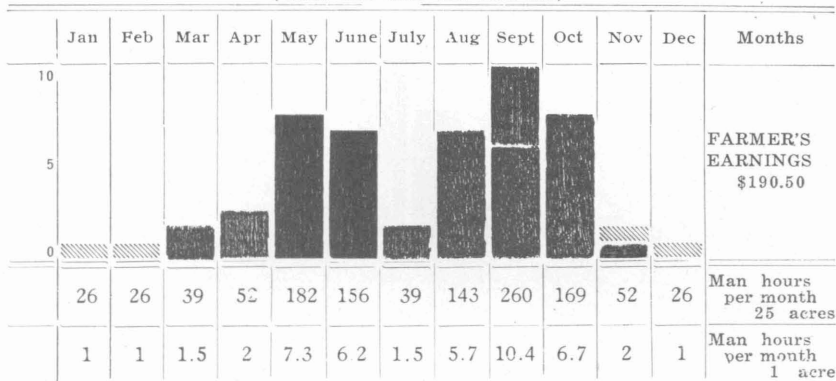
### LABOR RETURNS PER ACRE $21.62.

Man hours of labor per acre 47—Returns per hour for man labor 46 cents.

(The distribution of labor was determined by averaging reports given by 30 farmers in Atascosa, Brazos, Bexar, Harris and Kerr Counties.)

## CHART NUMBER 14.

### DISTRIBUTION OF MAN LABOR ON 25 ACRES OF COTTON IN NORTH TEXAS
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FARMER'S EARNINGS $200.00 |
| | 39 | 39 | 39 | 52 | 169 | 145 | 39 | 13 | 234 | 260 | 130 | 39 | Man hours per month 25 acres |
| | 1.6 | 1.6 | 1.6 | 2.1 | 6.7 | 6 | 1.6 | .5 | 9.3 | 10.4 | 5.2 | 1.6 | Man hours per month 1 acre |

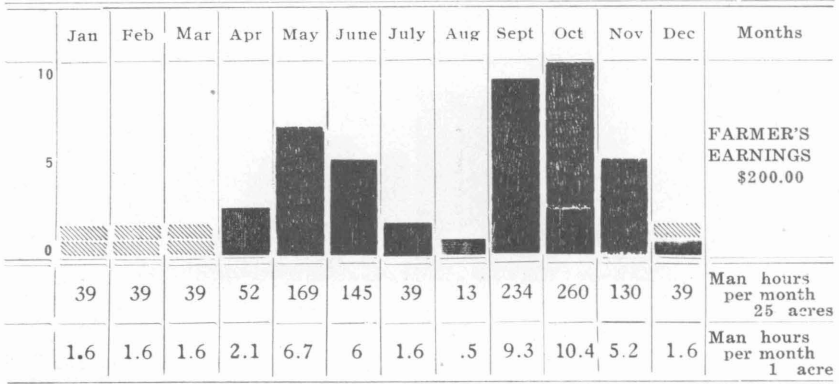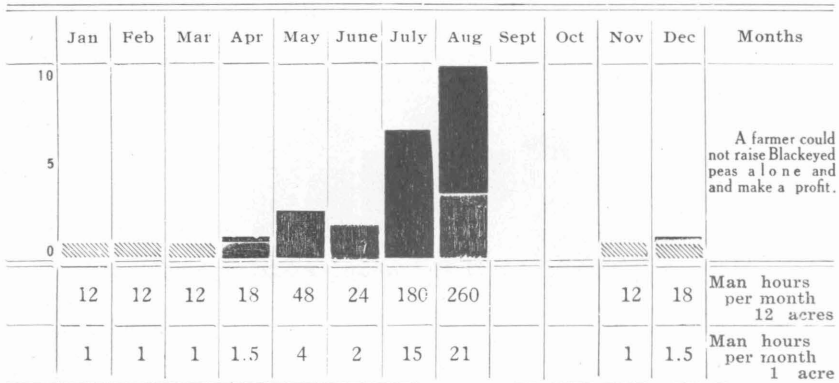▆▆▆Labor fixed as to time.

░░░░Labor not fixed as to time.

### LABOR RETURNS PER ACRE $22.00.

Man hours of labor per acre 48—Returns per hour for man labor 46 cents.

(The distribution of man labor was determined by averaging reports given by 13 farmers in Collin, Dallas, and Hunt Counties on their crops for 1916.)

### CHART NUMBER 15.
### DISTRIBUTION OF MAN LABOR ON 12 ACRES OF BLACKEYED PEAS
(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | A farmer could not raise Blackeyed peas a l o n e and and make a profit. |
| | 12 | 12 | 12 | 18 | 48 | 24 | 180 | 260 | | | 12 | 18 | Man hours per month 12 acres |
| | 1 | 1 | 1 | 1.5 | 4 | 2 | 15 | 21 | | | 1 | 1.5 | Man hours per month 1 acre |

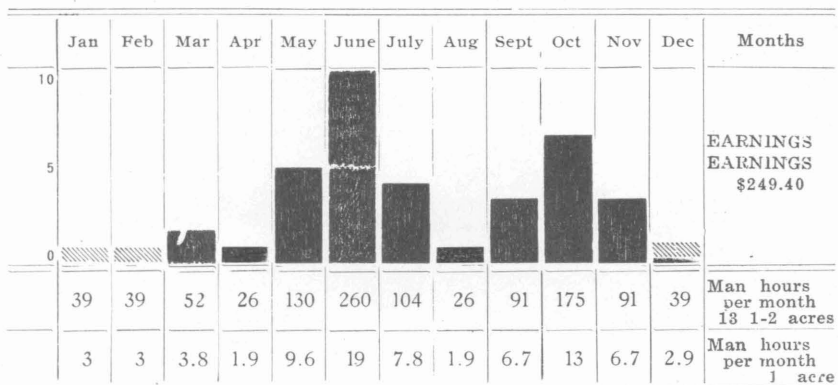▆▆▆Labor fixed as to time.

░░░░Labor not fixed as to time.

### LABOR RETURNS PER ACRE $6.37.
Man hours of labor per acre 49—Returns per hour for man labor 13 cents.

(The distribution of man labor was determined by averaging reports given by 20 Henderson County farmers on approximately 240 acres of blackeyed peas as grown for from 3 to 5 years preceding the year 1917).

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## DISTRIBUTION OF MAN LABOR ON 13 1-2 ACRES OF SWEET POTATOES

(What one man can care for)

| | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | EARNINGS EARNINGS $249.40 |
| | 39 | 39 | 52 | 26 | 130 | 260 | 104 | 26 | 91 | 175 | 91 | 39 | Man hours per month 13 1-2 acres |
| | 3 | 3 | 3.8 | 1.9 | 9.6 | 19 | 7.8 | 1.9 | 6.7 | 13 | 6.7 | 2.9 | Man hours per month 1 acre |

▮▮▮▮Labor fixed as to time.

▨▨▨Labor not fixed as to time.

### LABOR RETURNS PER ACRE $44.40.

Man hours of labor per acre 79—Returns per hour for man labor 56 cents.

(The distribution of labor was determined by averaging reports given on 22 farms in Anderson, Atascosa, Brazos, Comanche and Harris Counties.)