

# An Economic Evaluation of Wage Rates and Incentive Agreements for Full-Time Hired Labor on Oklahoma Farms

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# An Economic Evaluation of Wage Rates And Incentive Agreements for Full-Time Hired Labor on Oklahoma Farms

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## Introduction

A revolutionary change has occurred in the combination of inputs used in the U.S. agricultural industry during the past two decades. While the quantity of capital used has increased significantly since 1950, the quantity of labor has decreased by more than 50 percent. In Oklahoma, the number of farm workers has decreased from 255,000 persons in 1950 to 126,000 in 1970.<sup>1</sup> During this same period of time the average agriculture wage rate in Oklahoma increased from \$0.62 to \$1.39 per hour.<sup>2</sup>

The labor skills required in farming have changed from physical energy and brute power to the more highly skilled labor which can operate machinery and make management decisions. Modern agriculture requires individuals who have technical skills in mechanics, agronomy, animal science and the other areas of agricultural production as well. Hired labor must perform the mechanical and biological operations in their proper sequence and solve the day-to-day problems to guarantee timely and efficient operation of the farm.

## The Problem

Many of the farm workers who are leaving agriculture are the young and more productive segment of the working force.<sup>3</sup> These are the individuals who are capable of learning a skill and contributing the most to agricultural production for years to come. If farm operators hope

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<sup>1</sup>Oklahoma Crop and Livestock Reporting Service, *1964 and 1971 Oklahoma Agriculture Annual Report*, ed. Harold R. Rector (Oklahoma City, 1964, 1971), p. 175 and p. 8-93.

<sup>2</sup>Oklahoma Crop and Livestock Reporting Service, *1964 and 1971 Oklahoma Agriculture Annual Report*, ed. Harold R. Rector (Oklahoma City, 1964 and 1971), p. 175 and p. 8-93.

<sup>3</sup>Varden Fuller, "Farm Manpower Policy," *Farm Labor in the United States*, ed. C. E. Bishop (New York, 1967), p. 97.

to compete with industry for skilled labor, they will have to offer competitive wages and provide labor programs that will attract and hold productive full-time help. In many cases industry provides better working conditions, more uniform working hours, insurance policies, paid vacations and many other benefits that may make working in agriculture relatively unattractive.

To compete with industry, farmers are turning to new compensation and motivation programs in order to attract qualified labor. One of the more widely used and successful programs is the incentive agreement. As productive full-time labor becomes more difficult to locate and retain, an incentive agreement will become more valuable.

## **Objectives**

The general purpose of this study was to identify the major characteristics of the Oklahoma farm labor force and describe the incentive agreements currently being used. This information may be useful to other operators interested in implementing programs to attract, motivate and retain skilled farm labor. The specific objectives were:

1. To describe the skill levels and other characteristics of farm workers;
2. To describe the major types of incentive agreements being used on Oklahoma farms; and
3. To identify the major determinants of farm labor wages.

## **The Survey**

### **Survey and Questionnaire Design**

The data for this study were obtained by personal interviews with a representative sample of Oklahoma farm operators hiring full-time labor. All employees who had an incentive program with one of the operators in the sample were also interviewed.

As the first step in selecting the sample, the state was divided into four areas reflecting different types of agricultural environments. Census data were used to identify two or three counties in each area containing a large number of farms hiring full-time labor. (Figure 1) The areas and the eleven counties selected were: Northeast area — Mayes and Muskogee; Southeast area — Pittsburg, Johnston and Pottawatomie; Southwest area — Grady, Tillman and Washita; Northwest area — Garfield, Woodward and Texas. A list of all farmers who hire full time labor was not available making it impossible to select a random sample. Therefore county extension directors and area farm management specialists in



- Highly Skilled (select breeding stock, develop rations)
- 3. Mechanic
  - Skilled (change oil, replace plugs and points)
  - Highly Skilled (replace rings, grind valves, set time, adjust tap-pets, weld)
- 4. Managerial Ability
  - Skilled with Managerial Ability (responsible for making decisions in place of operator)
  - Not Skilled with Managerial Ability (unable to make decisions in place of the operator)

Employees who were working under incentive agreements were interviewed to acquire information on personal characteristics, formal education, work experience, preference for agricultural employment, importance of perquisites, and the employee's opinion of the incentive program. The questionnaires are presented in Appendix A.

### Characteristics of the Sample Farms and the Operators

A summary of the geographic location and enterprise type (according to census farm classification procedures) of the sample farms is provided in Table 1. Table 2 provides a similar summary by geographic location and the type of farm for the 173 sample employees.

The size of the sample farms were measured in three ways: the number of acres operated, the average value of nonland assets, and average gross sales. The average number of acres in the sample farms was 2,614, much larger than the 616 acre average size of all class 1-5 farms in the state as reported in the 1969 census.<sup>4</sup> The average size by area ranged

<sup>4</sup> Class 1-5 farms are those having agricultural product sales of \$2,500, or more per year; see 1969 Census of Agriculture Volume 1, Area Reports, Part 36, Oklahoma, p. 3.

**Table 1 Distribution of Sample Farms by Location and Farm Type**

Area of State	Number of Farms					
	Area Total	Type of Farm <sup>1</sup>				
		Livestock	Crop	Cotton	Dairy	General
Northeast	15	6	3	4	1	1
Southeast	17	12	-	-	2	3
Southwest	49	21	5	4	4	15
Northwest	26	17	7	-	2	-
Total	107	56	15	8	9	19
% of Total		52	14	8	8	18

<sup>1</sup> In general, a farm was classified as a particular type if the value of its sales of the product or group of products equaled 50 percent or more of the total value of all farm products sold during the year.

**Table 2 Distribution of Sample Employees By Location and Farm Type**

Area of State	Number of Employees Interviewed					
	Area Total	Type of Farm <sup>1</sup>				
		Livestock	Crop	Cotton	Dairy	General
Northeast	24	8	3	9	3	1
Southeast	29	20	--	--	4	5
Southwest	69	36	5	5	5	18
Northwest	51	32	15	--	4	--
Total	173	96	23	14	16	24
% of Total	--	55	13	8	9	14

<sup>1</sup> In general, a farm was classified as a particular type if the value of its sales of the product or group of products equaled 50 percent or more of the total value of all farm products sold during the year.

from 1,698 acres in the Southwest to 4,080 acres in the Northwest. The average value of assets (excluding the value of land) was \$139,840. The average by area ranged from \$87,756 in the Southwest to \$208,189 in the Northwest. The gross sales of the sample farms ranged from less than \$20,000 to more than \$750,000. Thirty-four of the farms average between \$25,000 and \$50,000 gross sales. Only six farms had sales over \$250,000 and seven had sales less than \$25,000. All of the 107 operators interviewed employed at least one full time worker. Only 15 of these operators were using some form of a labor incentive program.

The operators were asked to indicate the highest level of formal education completed, the amount of agricultural experience they have had and their age. Eighty-four of the 107 farm operators interviewed had completed high school. Of the 84 who graduated from high school, 48 attended college. Twenty-nine of the operators who attended college received their B.S. degrees and 12 completed more than four years of college. The average operator experience in agriculture was 26.7 years with a range from 1 to 56 years. The average age of the operators was 50.8 years. This is very close to the average age (51.7) of all operators of Oklahoma farms selling \$2,500 or more of agricultural products as reported in the 1969 census.<sup>5</sup>

## Selected Characteristics of Employees

### Skill Level

Each employer rated the skill level of his employees in the areas of crop, livestock, mechanic and managerial skills. Skill ratings were determined for a total of 173 employees. Since each employee was rated in each of his areas of responsibility, some were rated in more than one

<sup>5</sup> Op. Cit. p. 4.

skill area. For example, if an employee was responsible for maintenance of equipment and feeding livestock then he was rated in both the mechanic and livestock skill areas.

Table 3 summarizes the employee skill ratings. The second column of Table 3 indicates the proportion of the total employees in each skill area that was rated in the various skill levels. The third column of Table 3 gives the percent of the total number of employees in the total sample rated in each level of the various skill areas. In the sample, 15 percent of the employees were highly skilled in crops, 14 percent in livestock, 15 percent in mechanics and 32 percent had managerial ability.

To obtain an overall evaluation of farm labor skills, each employee was assigned the highest skill rating he received, irrespective of area. Thus, if an employee was semiskilled in crops, highly skilled in livestock and had managerial ability, he was assigned the managerial skill level which was considered the highest of the three. On this basis, 9 percent of the employees were semiskilled, 47 percent skilled, 12 percent highly skilled and 32 percent had managerial skill.

### Amount of Responsibility

The employers were asked to indicate the number of days each employee would be given full responsibility for the farm or his par-

**Table 3 The Number of Employees by Skill Ratings**

Skill Area and Skill Level	Number of Employees	Percent of Skill Area Total	Percent of Total Employees
<b>Crops</b>			
Semiskilled	46	35	27
Skilled	61	46	35
Highly Skilled	26	19	15
Total	133	100	77
<b>Livestock</b>			
Semiskilled	70	48	40
Skilled	52	35	30
Highly Skilled	25	17	14
Total	147	100	84
<b>Mechanic</b>			
Skilled	121	82	70
Highly Skilled	26	18	15
Total	147	100	85
<b>Managerial</b>			
Not Skilled	118	68	68
Skilled	55	32	32
Total	173	100	100



**Table 4 Distribution of Employees by Days of Responsibility and Skill Level**

Skill Level	Number of Days Employee Could be Trusted with Farm					
	None	1-7	8-14	15-30	Over 30 But Not Indefinitely	Indefinitely
Semiskilled	6	8	0	2	0	0
Skilled	20	35	20	4	0	2
Highly Skilled	3	7	4	4	1	2
Managerial	0	5	16	8	1	25

ticular enterprise. Table 4 summarizes the distribution of employees according to days of responsibility and skill level. It can be seen that as the skill level increases so does the number of days the employer would trust the employee with the operation. There were no semiskilled employees that would be trusted indefinitely with the farm, and there were no employees with managerial skills that would not be trusted for at least a few days.

**Amount of Labor Provided**

The average number of days worked per week and the average number of hours worked per day were used to determine the amount of labor provided by the employees. Table 5 summarizes the hours of labor provided by area of the state and type of farm. The number of days and hours worked were estimated by the employer considering both the summer and winter work loads. The number of days worked per week ranged from 5.2 days in the Southwest area of the state to 5.7 days in the Northwest. The hours worked per day averaged 8.6 for the Southeast area compared to a high of 9.7 hours in the Northwest. Using a 50-week work year, an individual in the Northwest averaged 502.5 hours more work than an individual in the Southwest.

Looking at the amount of labor provided according to the type of farm, the crop and cotton farms averaged 5.1 days per week while the dairy farms averaged 6.1 days per week. The livestock operations averaged 9.2 hours per day and the general farm averaged 9.3 hours per day. Again using a 50-week work year, an individual on a livestock farm averaged 260.5 hours more work per year than an individual on a crop or cotton farm.

**Wages Received**

The total wage received by an employee is composed of four parts; the base wage, perquisites (non-cash benefits), bonus and incentive pay-

**Table 5 Labor Provided by Employees by Area of State and Type of Farm**

	Average Days Worked Per Week	Average Hours Worked Per Day	Total Hours Provided <sup>1</sup>
<b>Area of State</b>			
Northeast	5.3	8.7	2305.5
Southeast	5.5	8.6	2365.0
Southwest	5.2	8.7	2262.0
Northwest	5.7	9.7	2764.5
<b>Type of Farm</b>			
Crop	5.1	8.9	2269.5
Livestock	5.5	9.2	2530.0
Cotton	5.1	8.9	2269.5
Dairy	6.1	7.5	2287.5
General	5.2	9.3	2418.0

<sup>1</sup> Assumes a 50-week work year.

ments. The employer provided information on the base wage and estimated the value of perquisites (or non-cash benefits provided to the employee). Housing was the perquisite which was provided most often. The average value of housing benefits ranged from a low of \$45.52 per month in the Southwest area to a high of \$70.71 per month in the Northwest. This benefit was received by 106 (63 percent) of the employees. Other perquisites provided by many of the employers included transportation, utilities, meat or dairy products, insurance and payment of the employee's part of Social Security.

The bonus payment was also estimated by the employer. A bonus was frequently given as a Christmas or year's end gift. Most employers commented that the reasons for giving a bonus included the employee's performance and his willingness to work overtime. Some bonuses were given after harvest as a means of rewarding the employee for staying on the job. The average value of incentive payments were given by the operator or determined from the description of the program.

A summary of the wages paid to the sample employees is presented in Table 6. The total wage is separated into the four components and is listed by area of the state and type of farm. The average total wage appears to be substantially higher in the Northwest area of the state. In addition, employees on crop farms receive a higher total wage in comparison to employees on other types of farms.

### **Labor Incentive Programs**

The basic intent of a labor incentive program is to compensate the worker based directly on his productivity in a particular enterprise or in

**Table 6 Composition of Employee Income by Area of State and Farm Type**

	Average Value of Those Employees Receiving the Wage Component				
	Base	Perquisites	Bonus	Incentive	Total Wage
<b>Area of State</b>					
<b>Northeast</b>					
Number	24	18	12	2	24
Average (\$)	4,006	752	363	1,500	5,062
<b>Southeast</b>					
Number	29	21	14	3	29
Average (\$)	4,159	1,263	187	1,300	5,371
<b>Southwest</b>					
Number	63	59	12	8	63
Average (\$)	4,050	909	167	1,468	5,119
<b>Northwest</b>					
Number	51	47	17	4	51
Average (\$)	5,387	1,227	450	2,588	6,871
<b>Type of Farm</b>					
<b>Crop</b>					
Number	22	21	7	3	22
Average (\$)	4,765	1,239	636	1,923	6,443
<b>Livestock</b>					
Number	91	78	29	7	91
Average (\$)	4,502	1,030	184	2,229	5,662
<b>Dairy</b>					
Number	16	18	7	3	16
Average (\$)	4,631	1,295	233	1,333	5,997
<b>Cotton</b>					
Number	14	11	5	1	14
Average (\$)	3,939	896	694	650	4,937
<b>General</b>					
Number	24	22	7	3	24
Average (\$)	3,964	1,006	234	1,192	5,252

the entire farming operation. The purpose of using such an agreement is to attract, motivate and retain skilled farm labor.

A number of principles that should be considered in the development of a labor incentive program have been discussed in the literature. The principles listed below are basic and can be used to evaluate the effectiveness of any type of labor incentive program.<sup>6</sup>

1. The program should be simple and easily understood by the employee. There is a danger that oversimplification may lead to

<sup>6</sup> Paul Weightman, "Financial Incentive Plans for Farm Labor in New York State" (unpub. Ph.D. dissertation, Cornell University, 1966) pp. 195-196.

uneconomical practices, but a point of reasonable balance is needed.

2. The program should be based on factors largely within the employee's control. This may be hard to attain, but some degree of control is necessary.
3. The program should aim at rewarding work that is in the best interests of the employer. A good program is designed so that outstanding performance benefits both the employer and employee.
4. The program should provide a cash return large enough to provide a motivation for improved performance. Individuals in industry have found that 15-20 percent of an employee's wage should be in the form of an incentive payment if an incentive program is to encourage better performance.<sup>7</sup>
5. The incentive payment should be made promptly or as soon after the completion of the work as possible.
6. The incentive program should be written, contain provisions for arbitration of misunderstanding and indicate the duration of the program. Written copies of the program which are provided to both parties will help minimize misunderstanding from the beginning.
7. The incentive program should set forth employee responsibilities and be administered equitably.
8. The incentive payment should not be considered as a substitute for competitive base wages and good labor relations.

These eight principles provide useful criteria to evaluate the incentive programs being used by Oklahoma farmers.

### **Characteristics of Farms and Employees With Incentive Programs**

The labor arrangement being used by an operator was required to possess at least three characteristics before it was classified as an incentive program. First, the arrangement must have provided payment in addition to the base wage and perquisites. Second, the employee must have been aware of the program before the season. Third, the employee must have understood that the manner in which he performed his job would influence the size of payment.<sup>8</sup>

In the sample of 173 employees, a total of 17 were employed under some type of incentive arrangement. Complete information on personal characteristics was available for only 13 of these employees. The total

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<sup>7</sup> Phil Carroll, *Better Wage Incentives* (New York, 1957), p. 29; Van Dusen Kennedy, *Union Policy and Incentive Wage Methods* (New York, 1945), p. 221.

<sup>8</sup> W. Harry Schaffer, George L. Casler and Robert S. Smith, "Incentive Payment Plans for Hired Men," New York State College of Agriculture (Ithaca, 1959), p. 1.

acreage controlled by farms or ranches where incentive programs were used averaged 2,559 acres. These farms had an average yearly gross sales of \$98,333 and an average nonland capital investment of \$136,533. The amount of labor (both operator and employee) used by these farms averaged 2.5 man years.

The employers using incentive programs averaged 49.3 years of age. These individuals had farmed an average of 26 years and had hired full-time labor for 20.4 years. Some employers were involved in non-farm businesses, although they averaged spending 88.7 percent of their time with the farm operation. The level of formal education for the employers averaged 13.4 years.

The employees on incentive programs averaged 40.8 years of age. They had worked on a farm an average of 26.2 years and had been with the present employer 7.8 years. The 13 employees averaged working 2368 hours per year. The amount of formal education received by the average employee on an incentive arrangement was 9.5 years. With respect to their skill ratings, five of the thirteen employees were rated as skilled, two as highly skilled, and six as managerially skilled.

## **Types of Incentive Programs**

The incentive programs identified using the previously discussed criteria were grouped into four basic types; a production incentive, a crop incentive, a livestock incentive and a percentage of income incentive.

**Production Incentive.** Production incentives provide a means of rewarding an employee for performance which increases production or sales of an enterprise. The incentive payment should be based upon a measure of production that will insure an increase in net income of the entire farm operation rather than an increase in one enterprise at the expense of others. Production incentives are frequently used to make growth or expansion in an enterprise more acceptable to the employee.

Four employees were on production incentive programs. The average total wage of employees with production incentives was \$9,277.50 per year. This included an average base wage of \$5,917.50, average perquisites of \$2,085, average bonuses of \$50 and an average incentive payment of \$1,225 (Figure 2). On a percentage basis, 63.0 percent of the total wage was base wages, 23.0 percent was perquisites, 0.5 percent was bonuses, and 13.5 percent was incentive payments. For the four employees the incentive payment ranged from a low of 8 percent to a high of 17 percent of the total wage.

**Livestock Incentives.** A livestock incentive program gives an employee the opportunity to raise a limited number of livestock and re-

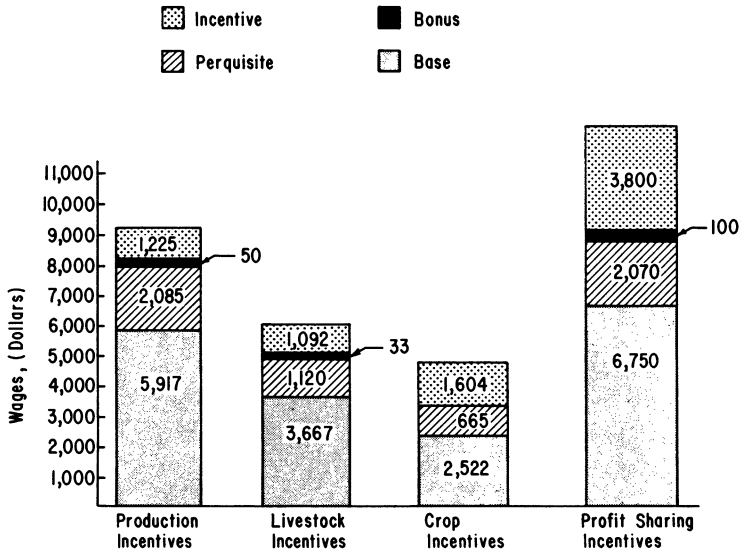


Figure 2. The Composition of Total Wage For Employees on Labor Incentive Agreements

ceive a share or all of the income from the sale of those livestock. This is sometimes referred to as an equity accumulation program designed to retain a good employee. The program may require the employee to purchase the livestock and pay a minimal fee for grass and feed. Alternatively, the employee may receive the animals as the incentive, with all operating costs paid by the employer.

Three employees were on livestock incentive programs. The average total wage of these employees was \$5,912. This was composed of an average base wage of \$3,667, average perquisites of \$1,120, average bonuses of \$33 and an average incentive payment of \$1,092 (Figure 2). On a percentage basis, 62.0 percent of the total wage was the base wage, 19.0 percent was perquisites, 0.5 percent was bonuses, and 18.5 percent was incentive payments. For the three employees the size of the incentive payment ranged from a low of 15 percent to a high of 23 percent of the total wage.

**Crop Incentives.** A crop incentive program gives an employee the opportunity to grow a specified acreage of crops and receive a share or all of the income from the sale of those crops. Crop incentives usually require the employee to pay for some part of the operating expenses; he also receives some part of the income and government payment. The

employee may grow the same crop on the same acreage or the program may allow him to select a crop and choose one of several alternative locations specified by the employer.

Four employees in the Oklahoma survey were on crop incentive programs. The average total wage of these employees was \$4,791. Components of the total wage included: \$2,522 average base wages, \$665 average perquisites, and \$1,604 average incentive payment (Figure 2). On a percentage basis, 53 percent of the total wage was in the form of base wages, 14 percent was perquisites, and 33 percent was incentive payments. The size of the incentive payment ranged from 18 percent to 46 percent of the total wage.

**Percentage of Income Incentives.** With this incentive program the employee receives a percentage of the farm income. Gross income or net income may be used to calculate the payment. This program can be used with an enterprise or the whole farm if the payment is based on profits. The program usually considers all operating expenses as costs when determining profits. However, taxes, depreciation and operator salaries may not always be treated as operating expenses.

The average total wage for the two employees on percentage of income incentive programs was \$12,720. The total wage included a \$6,750 base wage, \$2,070 average value of perquisites, \$100 bonuses, and an average incentive payment of \$3,800 (Figure 2). Of the total wage 53 percent was base wage, 16 percent was the value of perquisites, 0.7 percent was bonuses, and 30 percent was incentive payments.

## **Characteristics Associated with Incentive Programs**

The small number of observations on the use of incentive programs prevented statistical tests which would have indicated the significant variables associated with a particular type program. However, the information obtained does suggest hypotheses that merit further study. The data indicates that farms using production incentives had the largest amount of capital investment while farms using percentage of income incentives had the largest amount of gross income. Farms with crop incentives required the least amount of labor from each employee while farms with percentage of income incentives required the greatest amount of labor. The percentage of income incentives were utilized by the oldest, the most experienced with labor, and the best educated employers.

Employees with livestock incentives had been employed by the present employer for the longest period of time. They also had spent the most time working on farms and had the least amount of formal education. Employees with production incentives had been with the present employer the shortest time. Employees with percentage of income incen-

tives were the youngest, best educated, and possessed the highest skills of the incentive groups. Employees with crop incentives had the lowest total wage of the four groups. Livestock incentive employees received the lowest incentive payment. The employees receiving a percentage of income incentive received the largest incentive payment and total wage.

Only 60 percent of the employers felt the incentive program being used was increasing production or reducing costs, while 92 percent of the employees felt it encouraged them to work more efficiently. Over 90 percent of both employees and employers felt that the program rewarded the employee for better work. All of the employers felt an incentive program increased the chances of retaining an employee, and 84 percent of the employees indicated that such a program made it less likely that they would change jobs.

### **Estimating the Profitability of an Incentive Program**

**The Partial Budgeting Procedure.** The profitability of a labor incentive agreement depends on its combined effect on productivity and costs. Partial budgeting can be used to estimate the effect of an incentive agreement on profitability. Only those items of income and expense that change as a result of using the incentive agreement are considered, making the computations relatively simple.

The seven parts of the partial budgeting format and an explanation of the entries to be made in each part are given in Figure 3. The additional receipts and reduced expenses include the items that increase income and thus make adoption of the labor incentive agreement more profitable. Summing the entries in these two parts gives total credits attributed to the agreement. The reduced receipts and additional expenses include the items that reduce income and make adoption of the labor incentive agreement less profitable. The sum of the entries in these two parts equal total debits. Subtracting total debits from total credits gives the difference. If the difference is positive, adoption of the labor incentive agreement is expected to increase the net returns of the business. A negative difference indicates the agreement will decrease net returns.

**An Example.** The application of the partial budgeting procedure to a situation involving one enterprise is summarized in Figure 4. Assume a dairy operator has one employee presently milking 100 cows. The average production per cow is 120 hundredweight of milk each year, which is sold for \$6.00 a hundredweight. The employer feels that over the next few years the employee could be instrumental in raising the herd average to 130 hundredweight per year and increasing the herd size to 125 cows. The employer is considering offering the employee a production incen-



**Additional Receipts**

Those items of additional gross receipts expected when an incentive plan is used are listed here. The increased production per unit (e.g. per cow or acre), additional units to be included in the plan (e.g. more cows or acres) and higher selling prices due to a better quality product are possible sources of additional receipts resulting from adoption of a labor incentive agreement.

**Reduced Expenses**

Items of cost that will be avoided or reduced when an incentive plan is used are listed here. Reduced expenditures for additional hired labor during busy seasons, more efficient feed use, lower veterinary bills and reduced repair costs are possible sources of reduced expenses resulting from the adoption of a labor incentive agreement.

**Total Credits**

This is the sum of all items of ADDITIONAL RECEIPTS and REDUCED EXPENSES.

**Reduced Receipts**

Those items of income that will be reduced or no longer received when a labor incentive agreement is adopted are listed here. Additional livestock production under a labor incentive agreement may require hay and grain formerly sold to be fed on the farm. Likewise, specialization may result in the elimination of some enterprises and hence of some sources of gross receipts.

**Additional Expenses**

Items of additional cost that will be required when an incentive plan is used are listed here. The incentive payments and the cost of additional non-labor inputs required under the incentive agreement, such as feed, are possible sources of additional expense.

**Total Debits**

This is the sum of all items of REDUCED RECEIPTS and ADDITIONAL EXPENSE.

**Difference**

This is TOTAL CREDITS minus TOTAL DEBITS. A positive (negative) DIFFERENCE indicates adoption of the labor incentive agreement is expected to increase (decrease) the net return of the farming operation.

**Figure 3. Evaluating an Incentive Program With Partial Budgeting**

tive of \$.50 per cwt. to be paid monthly on total production over the present annual average of 12,000 hundredweight (100 x 120 cwt.). The employer is interested in determining the incentive payment the employee will receive if the goals are met as well as his own gain from the program.

A typical dairy budget is used to estimate costs and returns of the dairy enterprise. The additional receipts from the increased production

<b>Additional Receipts</b>	
4250 cwt. of milk per month @ \$6.00	\$25,500.00
<b>Reduced Expenses</b>	
None	
<b>Total Credits</b> -----	<b>25,500.00</b>
<b>Reduced Receipts</b>	
None	
<b>Additional Expenses</b>	
Incentive Payment: 4250 cwt. x \$.50	\$2,125.00
Overhead Costs: \$145.05 per cow x 25 cows	3,626.25
Variable Costs: 4250 cwt. x 3.15	13,387.50
<b>Total Debits</b> -----	<b>19,138.75</b>
<b>Difference</b> -----	<b>\$6,361.25</b>

Figure 4. Evaluating a Production Incentive

and herd size would be 4,250 hundredweight per year ((100 cows x 10 cwt) + (25 cows x 130 cwt.)). There are no reduced costs assumed so total credits would be \$25,500 per year. Additional costs are the incentive payment and expenses involved with more cows and higher production. The incentive payment will be \$2,125.00 (4,250 cwt. x \$.50). Additional expenses include the overhead costs of 25 additional cows estimated by the farmer to be \$3,626.25 per year and a variable cost of \$3.15 per hundredweight for additional milk. Since the change does not affect other enterprises, there are no reduced receipts.

Completing the calculations indicates the difference is \$6,361.25. The estimated total credits exceed the estimated total debits by \$6,361.25. Thus the employer has estimated that introducing the incentive program will result in average monthly incentive payments to the employee of \$177.08 (2125.00 ÷ 12 months) and an increase in the employer's net returns of \$6,361.25 per year. Normally, the employer will want to go through the calculations several times using different values for production levels, the price of milk and feed costs before deciding on the desirability of the program and on the level of incentive to offer.

The partial budgeting procedure can also be used to evaluate other types of incentive programs. Evaluation of a percentage of income is usually more complex than the above illustration because all enterprises affect net farm income. Consequently the effect of a labor incentive agreement on the costs and returns of each enterprise must be considered in the evaluation.

Crop and livestock incentives can also be analyzed with the same basic concepts. With these incentive programs the operator incurs two kinds of costs, the direct cost of inputs used on the employee's enterprise and the opportunity cost of not receiving any profits from those units which the employee operates. The additional receipts of these programs are also the result of increased labor productivity.

## Determinants of Farm Labor Wages

The final objective of this study was to identify and analyze the major determinants of farm labor wages. It was hypothesized that the employee's total wage is a function of employee skill level, type of farm, capital intensity of the farm, hours worked, type of incentive program, gross farm income per hour of labor and area of the state. A step-wise least squares regression analysis was utilized to determine which of these variables significantly affected employee wages. In selecting the final regression equations, the sign and significance of the coefficients were the primary considerations. Also considered was the precision of the estimates which was evaluated using the adjusted R<sup>2</sup>, F-ratio and standard error of the estimate.

### Wages of Employees Without Incentive Programs

The regression equation selected to estimate the wages of the 150 employees without incentive programs included nine independent variables. The estimated regression equation is:<sup>9</sup>

$$\begin{aligned} \hat{Y} = & 837.259 + 56.510X_4 + 19.779X_7 + 576.385X_{10} + 735.328X_{13} \\ & (578.952)^d \quad (10.687)^a \quad (8.112)^b \quad (310.917)^c \quad (304.344)^b \\ & + 854.310X_{15} + 1076.533X_{16} + 1810.858X_{17} + 948.612X_{20} \\ & (372.004)^b \quad (464.138)^b \quad (399.620)^a \quad (347.172)^a \end{aligned} \quad (1)$$

where:

$\hat{Y}$  = employee total annual wages,

$X_4$  = average hours employee worked per week,

$X_7$  = gross income of farm per hour of total operator plus hired labor (dollars),

$X_{10}$  = Northeast area of the state (0,1),

<sup>9</sup> The standard errors are given in parentheses and the significance levels ( $\alpha$ ) of the coefficients are denoted by : a if  $\alpha \leq 0.01$ ; b if  $0.01 < \alpha \leq 0.05$ ; c if  $0.05 < \alpha \leq 0.10$ ; d if  $0.10 < \alpha \leq 0.20$  and e if  $0.20 < \alpha \leq 0.30$ . Similar notations are used with the other equations presented later:

$X_{13}$  = Northwest area of the state (0,1),

$X_{15}$  = skilled skill level (0,1),

$X_{16}$  = highly skilled skill level (0,1),

$X_{17}$  = managerial skill level (0,1),

$X_{20}$  = crop farm (0,1).

This equation has an adjusted  $R^2$  of 0.4560 with the F-ratio significant at the 0.001 probability level. The  $R^2$  value indicates that the variables included in the equation explain 45.60 percent of the variation in the income of employees without incentive programs. The standard error of the estimate is 1209.5288 or 22 percent of the mean response ( $\bar{Y}$ ). Because dummy variables are included in the equation, the intercept term includes the effect of the Southwest area of the state, semiskilled skill level and livestock farm on employee wages.

The coefficients of the variables which represent hours worked per week ( $X_4$ ), managerial ability ( $X_{17}$ ), and crop farm ( $X_{20}$ ) are statistically significant at the 0.01 level. The positive signs of  $X_4$  and  $X_{17}$  support the hypotheses that additional hours of work and managerial ability increase the employee's wages. If an employee works 50-hour weeks instead of 40-hour weeks he can expect an average increase in total wages of \$565.10. Employees with managerial ability can expect average total wages that are \$1,810.86 greater than semi-skilled employees. According to the equation an employee working on a crop farm will have \$948.61 higher wages than if he worked on a livestock farm.

Variables which are significant at the 0.05 level include gross income per hour of labor ( $X_7$ ), Northwest area of the state ( $X_{13}$ ), skilled skill level ( $X_{15}$ ), and highly skilled skill level ( $X_{16}$ ). The positive signs on variables  $X_7$ ,  $X_{15}$  and  $X_{16}$  support the hypotheses that a farm with high gross income can afford to pay employees larger wages, and a higher level of skill will mean increased income for the employee. The coefficient for  $X_7$  indicates that for every dollar increase in gross income per hour of labor used on the farm, an employee will receive \$19.78 increase in total wages.

Variables  $X_{15}$  and  $X_{16}$  indicate that an employee who is considered skilled will receive \$854.31 more in total wages than the semiskilled employee and an employee who is highly skilled will receive \$1076.53 more than the semiskilled employee. The regression analysis also indicates that total income of employees in the Northwest area of the state ( $X_{13}$ ) is \$735.33 larger than the income of employees in the Southwest. The dummy variable representing the Northeast area of the state ( $X_{10}$ ) is significant at the 0.10 level. The regression coefficient indicates that

wages of an employee in the Northeast area of the state are \$576.38 larger than if the same employee is working in the Southwest.

Equation (1) was used to estimate total wages of employees without incentive programs for alternative skill levels by area of the state. The results are summarized in Table 7. The estimated wages range from \$4,084 to \$7,194 depending upon the employee's skill level, hours worked per week, and area of the state.

It is particularly interesting to note that the wages for the three skill levels are substantially different than the wages of semiskilled employees. A skilled employee's wages are \$854.31 above the semiskilled employee. The wages of highly skilled employees are \$222.22 greater than skilled employees, and managerial ability commands \$734.33 additional wages over highly skilled employees.

### Wages of Employees With Incentive Programs

The regression equation selected to estimate the wages of the 17 employees with incentive programs includes five independent variables.<sup>10</sup> The estimated regression equation is:

$$\begin{aligned} \hat{Y} = & 4632.960 + 1393.658X_{11} + 2640.366X_{16} + 3849.357X_{24} \\ & (478.613)^a \quad (783.951)^c \quad (818.810)^a \quad (826.541)^a \quad (2) \\ & + 1517.650X_{26} + 7390.122X_{27} \\ & (751.196)^c \quad (977.441)^a \end{aligned}$$

where:

- $\hat{Y}$  = Employee total annual wages
- $X_{13}$  = Northwest area of the state (0,1),
- $X_{16}$  = Highly skilled skill level (0,1),
- $X_{24}$  = Production incentive program (0,1),
- $X_{26}$  = Livestock incentive program (0,1),
- $X_{27}$  = Percentage of income incentive program (0,1).

This equation has an adjusted  $R^2$  of 0.8770 and the F-ratio is significant at the 0.005 probability level. The standard error of the estimate is 1070.2112 or 14 percent of the mean response ( $\hat{Y}$ ). The intercept term for this equation includes the effect of the skilled skill level and the crop incentive program.

<sup>10</sup> Due to the limited number of observations and insignificance of many variables in equation (2) the Northeast area, Northwest area and crop farm variables were the only area and farm type dummy variables included in the regression. Information to estimate this equation was available from the employer's questionnaire on all 17 employees on labor incentive agreements.

**Table 7 Estimated Wages of Employees Without Incentive Programs<sup>1</sup>**

Area of State	Skill Levels							
	Semiskilled		Skilled		Highly Skilled		Managerial	
	50-hour Week	60-hour Week	50-hour Week	60-hour Week	50-hour Week	60-hour Week	50-hour Week	60-hour Week
Southwest	\$4,084	\$4,649	\$4,938	\$5,503	\$5,160	\$5,725	\$5,894	\$6,459
Northeast	4,660	5,225	5,514	6,079	5,736	6,301	6,470	7,035
Northwest	4,819	5,384	5,673	6,238	5,895	6,460	6,629	7,194

<sup>1</sup> Figures are calculated using equation (1) assuming \$20 gross income per hour of labor.

The coefficients of the variables which represent highly skilled ability ( $X_{16}$ ), a production incentive program ( $X_{24}$ ) and a percentage of income incentive program ( $X_{27}$ ) are significant at the 0.01 probability

level. The positive signs on the  $X_{24}$  and  $X_{27}$  variables support the hypothesis that incentive programs will increase the employee's wages. The employees working with a production incentive ( $X_{24}$ ) receive \$3,849.35 more wages than the employees with a crop incentive. The employees on a percentage of income incentive ( $X_{27}$ ), receive a \$7,390.21 higher wages than those on a crop incentive.

The only variable representing skill level to have a significant affect on employee wages is  $X_{16}$ , which represents highly skilled ability. The regression coefficient indicates that a highly skilled employee will receive \$2,640.36 more income than a skilled employee. The Northwest area ( $X_{13}$ ) and livestock incentive ( $X_{26}$ ) variables are both significant at the 0.10 probability level. According to this equation, an employee working in the Northwest area would earn \$1,393.66 more than an employee not in the Northwest. An employee working under a livestock incentive program would command \$1,517.65 in additional wages over the employee with a crop incentive.

Table 8 presents the predicted wages of employees with incentive programs for alternative situations. Differences in the significant variables cause wages to range from \$4,632 to \$16,055.

## Summary and Conclusions

Due to technological advances and the substitution of capital for labor, many farmers are seeking highly skilled employees who are capable of operating expensive equipment and making sound decisions. In an effort to attract, motivate and retain this type employee, farm operators are turning to new types of labor programs. The incentive agree-

**Table 8 Estimated Wages of Employees with Incentive Programs<sup>1</sup>**

Type of Incentive Program	Area of State			
	Areas Other Than Northwest		Northwest	
	Skilled	Highly Skilled	Skilled	Highly Skilled
Crop Incentive Production	4,632	7,272	6,025	8,665
Livestock Incentive	8,481	11,121	9,874	12,514
Percentage of Income Incentive	6,149	8,789	7,542	10,182
	12,022	14,662	13,415	16,055

<sup>1</sup> Figures are calculated using equation (2) assuming \$20 gross income per hour of labor.

ment is one program which may attract the better farm employees, motivate them to improve performance and help retain them on the farm.

The major goal of this study was to delineate the determinants of labor wage rates and the role that incentive agreements can play in attracting and retaining skilled labor. To accomplish this objective, primary data were gathered during the summer of 1972 from a sample of farmers who hired full time labor. Characteristics of the farm, operator and employees were described. A multiple linear regression procedure was utilized to empirically estimate the effect of selected farm and employee characteristics on the annual wages of employees. The use of partial budgeting as a means of evaluating labor incentive agreements was also illustrated.

### Use of Incentive Programs

Incentive programs were found in use on 14 percent of the sample farms. No evidence was found to suggest that either the type of farm or area of the state had any effect on the successful use of an incentive program. The data also indicated that little difference existed between the total acreage, gross income and capital investment of a farm with an incentive and a farm without an incentive program. Thus, incentive programs were not predominate on large or small farms.

It might be expected that employers with above average educations will more frequently develop and use incentive programs. The survey data indicated that 87 percent of the employers using an incentive program had a high school, or higher, level of education, while only 77 percent of the employers not using incentive programs had the same level of education. The data also suggests that employees working on an in-

centive program have a higher skill rating than the employees not on incentive programs. Approximately 46 percent of the employees on incentive programs had managerial ability compared to 32 percent of the employees without incentive programs. When the average number of hours worked per week was compared for the incentive and non-incentive employees, there was less than an hour's difference between the two groups. This suggests that the hours an employee spends on the job changes very little, if any, when incentive programs are used.

For incentive programs to be effective, incentive payments must be in addition to competitive base wages and perquisites. Thus the total income of the employees with incentives would be expected to be larger than the total income of employees without incentives. This hypothesis was supported by the data which indicated that the average total income of an employee with an incentive program was \$2,321 above the employee without an incentive.

## **Determinants of Wages**

Variables found to significantly affect the wages of employees without incentive programs included hours worked per week, gross income per hour of labor, Northeast and Northwest areas of the state, crop-type farm and the skill level of the employee. Managerial ability was found to influence an employee's wage the most. The wages of employees with this skill rating were estimated to be \$1,810 above a semi-skilled employee. Variables which significantly affect the wages of employees with incentives were Northwest area of the state, the skill rating of the employee and the type of incentive program being used.

The statistical analysis indicates that there was not a significant difference between the income of employees with crop incentives and the income of employees without incentives. In contrast, an employee with a production incentive had an estimated income \$4,872 above an employee without an incentive. The wage of an employee with a livestock incentive was estimated to be \$1,383 above the non-incentive employee. An employee with a percentage of income incentive had an estimated wage \$5,659 above an employee without an incentive. These statistical results indicate that the crop incentive payments were substituted for competitive base wages. The large income value associated with the other incentive programs appears to indicate that additional income was directly related to the additional responsibility assumed by employees on these programs.

The Northwest area of the state was found to have a significant effect on the income of both employees with and without incentives. This suggests that some supply or demand phenomenon may exist in North-



west Oklahoma which causes employee wages to be higher than other areas of the state. Thus there appears to be an income inducement encouraging labor to move to the Northwest area of the state.

The skill level of the employee was another variable having a significant effect on the wages of both employees with and without incentive programs. This indicates there is a return for farm workers who obtain additional skills either by on-the-job training or short courses.

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# Appendix A

## Questionnaires Used In the Survey

### DEPARTMENT OF AGRICULTURAL ECONOMICS OKLAHOMA STATE UNIVERSITY STILLWATER, OKLAHOMA

#### QUESTIONNAIRE FOR FARM LABOR EMPLOYERS

**CONFIDENTIAL: For Statistical Use Only**

Date \_\_\_\_\_

1. Name \_\_\_\_\_
2. Address \_\_\_\_\_ City \_\_\_\_\_ County \_\_\_\_\_
3. How old were you on your last birthday? \_\_\_\_\_ years.
4. What was the highest level of formal education completed?  
8 or less 9 10 11 12    College 1 2 3 4    More than 4
5. a. For how many years have you operated a farm? \_\_\_\_\_ years  
b. Is this agricultural operation a partnership \_\_\_\_\_, corporation \_\_\_\_\_, or sole proprietorship \_\_\_\_\_.
6. Number of acres in operation: Pasture, \_\_\_\_\_ acres; cropland, \_\_\_\_\_ acres.  
No. of Units
7. What are your enterprises? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. What was the total value of agricultural products you sold last year? (Do not include government payments, receipts from custom work, rent from real estate or any other receipts not derived from the sale of agricultural products.)  

_____ Less than \$25,000	_____ \$100,000-\$149,999	_____ \$300,000-\$399,999
_____ \$25,000-\$49,999	_____ \$150,000-\$199,999	_____ \$400,000-\$499,999
_____ \$50,000-\$74,999	_____ \$200,000-\$249,999	_____ \$500,000-\$749,999
_____ \$75,000-\$99,999	_____ \$250,000-\$299,999	_____ \$750,000 and over
9. a. What activities other than farming were you engaged in last year?  

_____ Processing agricultural products not produced by this operation	_____ Custom Work (other than trading work) Labor contractor or crew leader
_____ Selling farm supplies	
_____ Other (Specify) _____	
- b. What part of your total income is from activities other than farming?  
\_\_\_\_\_ %
10. What is the current market value of your machinery, farm buildings, and livestock?  
\$ \_\_\_\_\_
11. How long have you employed regular hired labor? \_\_\_\_\_ years
12. How many regular hired men do you employ? (Regular refers to those working 150 days or more per year.) \_\_\_\_\_
13. How many have you had in the recent past? \_\_\_\_\_ How recent? \_\_\_\_\_

14. Indicate the skill level of each employee in one or more of the four areas.

1	2	3	<b>Crops</b>
_____	_____	_____	Semiskilled (operate tillage equipment)
_____	_____	_____	Skilled (operate planting, harvesting and chemical application equipment)
_____	_____	_____	Highly Skilled (determines when to perform operations; varieties to plant, fertilizer level, chemical levels)
			<b>Livestock</b>
_____	_____	_____	Semiskilled (move livestock, haul hay, feed)
_____	_____	_____	Skilled (castrating, vaccinating, dehorn, milk cows, care for livestock when calving, lambing or farrowing, mix feed)
_____	_____	_____	Highly Skilled (select breeding stock, develop rations)
			<b>Mechanic</b>
_____	_____	_____	Skilled (change oil, replace plugs and points)
_____	_____	_____	Highly Skilled (replace rings, grind valves, set timing, adjust tappets, weld)
_____	_____	_____	<b>Skilled with Managerial Ability</b> (responsible for making decisions in place of the operator)

15. How many days would you trust him with management of the farm if you wanted to attend a business meeting, take vacation, etc.? 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

16. Number of days employee works per week. 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

17. Number of normal employee work hours per day. 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

18. Part of employee's time that is devoted to activities other than farming.  
1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

19. What provision is made for time off so the employee can take care of personal matters? \_\_\_\_\_  
\_\_\_\_\_

20. What vacation plan, other than time off for personal matters, is provided for your employee? \_\_\_\_\_  
\_\_\_\_\_

21. What is the wage rate received by (each) employee?  
1) \_\_\_\_\_ per \_\_\_\_\_ 2) \_\_\_\_\_ per \_\_\_\_\_ 3) \_\_\_\_\_ per \_\_\_\_\_

22. What non-cash benefits does your employee receive and what are their approximate dollar values per month?

1	2	3	
_____	_____	_____	Housing
_____	_____	_____	Meals
_____	_____	_____	Transportation or Fuel
_____	_____	_____	Milk and/or Food
_____	_____	_____	Room, Board and Washing
_____	_____	_____	Utilities
_____	_____	_____	Other _____
_____	_____	_____	Other _____

In the next section we distinguish between a bonus and an incentive program.

For purposes of our survey we define:

A **bonus** as a payment in cash or goods that the employee does not know about beforehand and thus does not know how he can influence the size of the benefit.

An **incentive** is a payment in cash or goods that the employee knows about beforehand and knows that his performance will influence the size of the benefit.

23. Do you have a bonus program? Yes\_\_\_\_\_ No\_\_\_\_\_
If yes, when and for what reason do you usually give a bonus? \_\_\_\_\_

24. Are any incentive programs presently used: Yes\_\_\_\_\_(B) No\_\_\_\_\_(A)
A. If no,
1.) Have you ever used an incentive program in the past? Yes\_\_\_\_\_
No\_\_\_\_\_ (Go to Q. #2)
a.) If so, describe arrangements and indicate how long it was used. \_\_\_\_\_
b.) Was it a written agreement? Yes\_\_\_\_\_ No\_\_\_\_\_
c.) Were there arrangements for arbitration of misunderstandings?
Yes\_\_\_\_\_ No\_\_\_\_\_
d.) Why did you discontinue using the incentive program? \_\_\_\_\_
(Go to Q. #25)
2.) Have you ever considered using an incentive program? Yes\_\_\_\_\_ No\_\_\_\_\_
Do you have plans for an incentive program in the future? Yes\_\_\_\_\_ No\_\_\_\_\_
a.) If yes, what benefits do you feel an incentive program would have?
b.) If no, for what reasons do you not intend to use an incentive program?
(Go to Q. #25)

24. B. If yes,
1.) Describe and give approximate values. \_\_\_\_\_
2.) How many years have you had this incentive program? \_\_\_\_\_years
3.) Did you use another program before adopting the present one?
Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, describe. \_\_\_\_\_
4.) Why did you change to the present program? \_\_\_\_\_
5.) Is a copy of the incentive program provided to the employee? Yes\_\_\_\_\_ No\_\_\_\_\_
6.) Does the incentive program contain provisions for arbitration of misunderstandings? Yes\_\_\_\_\_ No\_\_\_\_\_ If so, how? \_\_\_\_\_

Incentive plans are sometimes considered to increase production or reduce costs, reward employees for good work, and retain workers.

7.) Do you feel your program has been successful in increasing production or reducing costs? Yes\_\_\_\_\_ No\_\_\_\_\_ Specify which enterprises and in what way there has been an effect. \_\_\_\_\_
8.) Do you feel your program rewards employees for good work? Yes\_\_\_\_\_ No\_\_\_\_\_ In what specific operations of your program have you noticed improved work? \_\_\_\_\_
9.) Do you feel your program helps retain employees? Yes\_\_\_\_\_ No\_\_\_\_\_ What aspect of your program improves retention? \_\_\_\_\_

25. a.) Is the employee required to work over time and nights? Yes\_\_\_\_\_ No\_\_\_\_\_
- b.) How is overtime pay figured? \_\_\_\_\_
26. At what skill level will your future labor needs be the greatest? \_\_\_\_\_
27. What wage would be needed to hire a regular worker with this skill level? \_\_\_\_\_ per \_\_\_\_\_
28. Could you productively use more or less labor in your operation? More\_\_\_\_\_ Less\_\_\_\_\_
29. What types of employer-employee misunderstandings occur most often? \_\_\_\_\_
30. What is the best advice you can give in keeping good regular hired men? \_\_\_\_\_
31. (Those with incentive programs) Would you allow me to interview your employee?  
Yes\_\_\_\_\_ No\_\_\_\_\_
32. General observations by enumerator: \_\_\_\_\_

**DEPARTMENT OF AGRICULTURAL ECONOMICS  
OKLAHOMA STATE UNIVERSITY  
STILLWATER, OKLAHOMA**

**QUESTIONNAIRE FOR FARM LABOR EMPLOYEES**

**CONFIDENTIAL: For Statistical Use Only**

Date \_\_\_\_\_

1. Name \_\_\_\_\_
2. Present Address \_\_\_\_\_ City \_\_\_\_\_
3. How old were you on your last birthday? \_\_\_\_\_ years.
4. a.) Are you married? Yes\_\_\_\_\_ No\_\_\_\_\_ b.) Is your wife employed?  
Yes\_\_\_\_\_ No\_\_\_\_\_ c.) If yes, what type employment? \_\_\_\_\_
5. How many dependent children do you have? \_\_\_\_\_ Under 13 \_\_\_\_\_ 13 or older
6. a.) Were you raised on a farm? Yes\_\_\_\_\_ No\_\_\_\_\_ b.) If not raised on a farm,  
what size of town were you raised in? \_\_\_\_\_
7. Number of years you have done farm work of some kind. \_\_\_\_\_ years
8. Number of years you have been employed on present farm. \_\_\_\_\_ years
9. Are you related to this employer? Yes\_\_\_ No\_\_\_ If yes, what relation? \_\_\_\_\_
10. a.) Do you have a part-time job or work anywhere other than this farm?  
Yes\_\_\_\_\_ No\_\_\_\_\_ b.) If so, what is the yearly value of this work? \$ \_\_\_\_\_
11. a.) What was the highest level of formal education completed?  
8 or less 9 10 11 12 College 1 2 3 4 More than 4 \_\_\_\_\_
- b.) If you attended college what was your major? \_\_\_\_\_
12. Did you have any vocational agricultural training in high school? Yes\_\_\_\_\_ No\_\_\_\_\_
13. Have you attended any of the following in the last five years?  
Adult Farm Group Meeting Yes\_\_\_\_\_ No\_\_\_\_\_
- Short Courses Yes\_\_\_\_\_ No\_\_\_\_\_
- Extension Programs Yes\_\_\_\_\_ No\_\_\_\_\_
- Other Agricultural Education Courses Yes\_\_\_\_\_ No\_\_\_\_\_

14. During the last 10 years your employment and educational experience has included:

	Number of Years
Farm Operator	_____ years
School	_____ years
Military	_____ years
Nonfarm Work, please specify type _____	_____ years
Other, please specify type _____	_____ years

15. a.) Do you prefer to work as a farm worker or a nonfarm worker? Farm \_\_\_\_\_  
Nonfarm \_\_\_\_\_ b.) If you prefer farm employment, what is the major reason?  
(Health, family, trained in farm work, steady work, etc.) \_\_\_\_\_

16. What type of work do you plan to do in the future? \_\_\_\_\_

17. What non-cash benefits do you presently receive?

House _____	Room, board and washing _____
Meals _____	Utilities _____
Transportation or Fuel _____	Other _____
Milk and/or food _____	_____

18. What are some non-cash benefits you would like to receive which you are not now receiving? \_\_\_\_\_

19. Rank in order of their importance the non-cash benefits you have mentioned in the previous two questions.

House _____	Vacation With Pay _____
Meals _____	Retirement Plan _____
Transportation or Fuel _____	Sick Leave with Pay _____
Milk and/or Food _____	Health insurance _____
Room, board and washing _____	Life insurance _____
Utilities _____	Other _____
Social Security _____	_____

20. Incentive plans are sometimes considered to increase production or reduce costs, reward employees for good work, and retain employees.

a.) Do you feel this incentive program encourages you to increase production or reduce costs? Yes \_\_\_\_\_ No \_\_\_\_\_ Specify which enterprises and in what way there has been an effect. \_\_\_\_\_

b.) Do you feel the present program rewards you for better work? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, how? \_\_\_\_\_

If no, how? \_\_\_\_\_

c.) Do you feel the incentive program makes it less likely that you would change jobs? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, what features of the incentive program makes it less likely that you would change jobs? \_\_\_\_\_