COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF OKLAHOMA
E. A. MILLER, Director

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Know What Your Crop Costs

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HOW TO COMPUTE QUANTITIES OF GRAIN, HAY AND STRAW

Grain: A bushel contains approximately 1¼ cubic feet. To find the capacity of a bin, find the number of cubic feet and multiply by 4-5, or multiply by 8 and divide by 10.

Example: Bin 5 feet x 5 feet x 2 feet = 50 cubic feet

$50 \times 8 = 400$

$400 \div 10 = 40$ bushels.

Ear Corn: Two bushels of ears, by measure, are ordinarily required to make one bushel of grain. The cubic feet of ears multiplied by 4 and divided by 10 gives the bushels of grain. By weight, 70 pounds of ear corn usually equal 56 pounds (one bushel) of shelled corn.

Hay: Some kinds of hay are heavier than others. The deeper the mow or the stack and the longer the hay has stood, the heavier it is per cubic foot. The bottom of the mow is much heavier than the top. Timothy hay is heavier than clover or alfalfa. About 500 cubic feet of well-settled timothy hay in a mow of average depth usually will weigh about one ton. In the bottom of the mow 450 cubic feet may weigh a ton. In low mows or stacks or in the top of a mow, more than 500 cubic feet of hay will be required to make a ton.

Straw: About 1,200 cubic feet of well-settled straw usually will weigh about one ton.

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FARM MANAGEMENT SURVEY, PAYNE COUNTY, 1915

U. S. Department of Agriculture

Table showing the relation of the yield of some of the most important crops per acre to the cost per crop unit.

Kind of Crop	Average Yield Per Acre	Cost Per Unit
Corn—		
20 bu. and less	16.2	74.4
20.1-30	28.2	42.7
30.1 and more	35.9	38.5
Wheat—		
10 bu. and less	7.3	1.21
10.1 and more	14.8	95.3
Oats—		
20 bu. and less	14.3	68.2
20.1-28	24.5	41.3
24.1 and more	33.6	29.0
Kafir—		
18 bu. and less	13.1	91.1
18.1-24	21.1	48.4
24.1 and more	31.6	40.9
Alfalfa—		
3 tons and less	2.3	5.42
3.1 and more	4.3	3.37
Cotton—		
600 lbs. and less	381	4.49
601 and more	786	3.00

HOW TO KEEP AN ACCOUNT WITH A CROP

M. E. ANDREWS, Agricultural Economist
G. C. GIBBONS, Extension Agronomist

In order to find the cost of producing a crop, it is necessary to keep the following records:

1. *Work Report.* Records of all the work done on the crop by man, horse, tractor and truck. These records should be totaled at the end of the year, and transferred to the financial record at estimated rates per hour or mile.

2. *Financial Record.* These charges should include:
   - A. Cash charges, such as purchases of seed, fertilizer, twine, spray material, and amounts paid for threshing, silo filling, ginning, baling, wire, bagging, ties and other expenses.
   - B. Charges not directly paid in cash, such as use of home-grown seed, farm manure, land, buildings, and interest on investment and other expenses.
   - C. Charges for the total amounts of man labor, horse labor, general farm-equipment use, tractor and truck use transferred from the work report to this account at the end of the year.

3. *Credits.* These should include:
   - A. Crop sold.
   - B. Crop used on farm and in house.
   - C. Crop held on hand at end of year.
   - D. Any other credits.

ITEMS TO CHARGE AND TO CREDIT TO A CROP ACCOUNT

Costs, or Charges	Returns, or Credits
Inventory of any costs incurred before the account was started.	All of crop sold
(a) Work done.	All of crop used on farm.
(b) Seed and fertilizer already used.	Crop on hand held for sale or for use on farm.
Seed used, own or purchased.	
Fertilizer.	
Spray material, twine, coal, and other materials.	
Threshing or silo-filling charge.	
Meals for threshing or silo-filling crew.	
Baling, wire, bagging, ties.	
Use of land.	
Use of buildings.	
All man labor, both home labor and hired labor.	
All horse labor.	
All general farm-equipment use.	
Tractor use.	
Truck use.	
This crop's proportion of manure.	
(a) Residue from manure applied to previous crops (see pages 8 and 10).	
(b) Applied directly to this crop (see pages 8 and 10).	
This crop's proportion of lime.	
(a) Residue from lime applied to previous crops.	
(b) Applied directly to this crop.	
Interest on costs till money is returned.	
All other costs.	

WORK REPORT

Labor is the largest single charge against most crops. Keep a daily record of the work done on this crop on pages 5 to 11. At the end of the year, the totals of each kind of labor should be charged to the crop under the Financial Record at estimated rates.

Keep a record of man labor, horse labor, and tractor use in hours and decimals of hours. Record work to the nearest quarter hour. In recording horse labor, reduce to the basis of hours of labor for one horse. Harrowing four hours by a man and three horses should be recorded as 4 man hours, 12 horse hours.

This record should include hired labor as well as all family labor.

Crop ..... Acres .....

Date	Kind of Work	Man Hours	Horse Hours	No. of Horses Used	Tractor Hours	Truck Miles

Date	Kind of Work	Man Hours	Horse Hours	No. of Horses Used	Tractor Hours	Truck Miles

Date	Kind of Work	Man Hours	Horse Hours	No. of Horses Used	Tractor Hours	Truck Miles

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Date	Kind of Work	Man Hours	Horse Hours	No. of Horses Used	Tractor Hours	Truck Miles

Date	Kind of Work	Man Hours	Horse Hours	No. of Horses Used	Tractor Hours	Truck Miles

FINANCIAL RECORD

Enter daily all records of cash paid out or received for this crop. Record date and quantity, as well as cost. Charge all home-produced seed, manure, or other materials at estimated market value at the farm.

Date	CHARGES Quantity and Material	$	

FINANCIAL RECORD

Credit this crop with its total products whether sold, used on the farm, used in the home, or held for sale or for use. Credit all by-products, such as straw, corn stalks, bean pods, and others. Products or by-products not sold should be credited at estimated market value at the farm.

Date	CREDITS Quantity and Material	$	

Date	CHARGES Quantity and Material	$	

Date	CREDITS Quantity and Material	$	

CHARGES MADE AGAINST THE CROP DURING THE YEAR

1. *An inventory of any costs incurred before the account was started.* This may include fall plowing, seed, and fertilizer already used.

2. *Seed.* If purchased, charge at cost. Home-grown seed should be charged at farm value, which is generally market value less the cost of marketing.

3. *Fertilizer.* Generally, charge all fertilizer at cost to this crop. Under conditions where a succeeding crop gets some benefit from fertilizer used on this crop, make such division of the charge as seems fair.

4. *Spray material, twine, and other miscellaneous materials.* Charge this crop with all such material used. Be sure that the crop is charged with any materials on hand at beginning of year and used for it during this year. Be sure that the crop is not charged with the materials which are left over at the end of the year.

5. *Threshing or silo filling.* If this cost is paid in cash, charge it to this crop. If you own your own outfit or secure the use of it in any other way, charge at market rates.

6. *Meals for men and horses during threshing and silo filling.* These should be charged. Do not charge meals furnished to neighbors exchanging work, as these are generally offset by meals which you and your horses will receive.

7. *Baling, bagging, ties, ginning.*

8. *Other costs.* Charge any other costs incurred during the year as a result of growing this crop.

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CREDIT TO THE CROP

Credit the crop with:

1. All the crop sold. Record the date, the quantity sold, the price, and the total amount received.
2. All the crop held for sale. Its estimated present value at the farm.
3. All the crop saved for seed or used in the house or used on the farm.
4. Any by-product, such as straw, stover, cotton seed, etc. Make all credits for farm-used materials at farm values, that is, market value less cost of marketing.

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CLOSING THE ACCOUNT

The account may be closed as soon as the crop is harvested and ready for sale. It is generally better, however, to wait until the crop is disposed of before closing the account.

Charge the crop with:

1. All man labor: Total the man hours in the Work Report. Charge this total number of hours at an estimated rate to the Financial Record.

2. All horse labor: Total the horse hours in the Work Report. Charge this total number of hours at an estimated rate to the Financial Record.

3. Use of equipment. Ordinarily some piece of machinery is used every time a horse is used in working on a crop. The most feasible way of charging the cost of machinery is according to the number of horse hours of work on the crop. Under present conditions the cost of equipment use should be charged at 4 cents a horse hour.

4. Tractor and truck use, if used. Add the total hours of tractor use and the total miles of truck use in the Work Report. Charge to the crop at the estimated rate. A fair rate, under average conditions for 1922, is $1.00 to $1.30 an hour, to cover use of tractor and accompanying tractor equipment; and 10-15 cents a mile for one-ton, to one-and-a-half-ton trucks.

5. Use of land. Estimate this charge high enough to cover the interest on the value of the land used, plus taxes, and plus a proper share of the general land upkeep, such as picking stones, maintaining fences, and drains. This expense generally amounts to about 7 to 9 percent of the value of the land. This charge will just about equal cash rental per acre for land.

6. Use of buildings. The total charge for use of buildings will be made up of interest on the investment, a share of the taxes, and other costs of maintaining the buildings. This will usually amount to from 8 to 10 percent of the value of the buildings. Charge against this crop a share of the building use in accordance with the proportion of the building space used by this crop.

7. Its share of manure. The cost of an application of manure is ordinarily distributed over four years, charging 40 percent the first year; 30 percent the second year; 20 percent the third year and 10 percent the fourth year. Manure used on this field this year or any time during the past four years may be charged according to these rates. With very light gravelly or sandy soils, this charge may be distributed over a shorter term of years. On very heavy clay soils the manure charge may be distributed over a longer term of years.

Manure is ordinariiy valued at from $1.00 to $2.50 a ton at the barn. The average cost of spreading will generally vary from 75 cents to $1.00 a ton, with present labor prices.

8. Its share of lime used. The cost of lime and the cost of applying it should be handled like the manure charge, distributing it over four or five years with 1-4 or 1-5 of the total cost charged each year.

9. Interest on the investment. If any considerable amount of money is tied up for a considerable period, charge interest on the average investment for the length of time that the money is tied up.

In finally balancing the crop account, the total of all these charges should be balanced against the totaled credits listed on pages 9 and 11.

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STUDYING THE ACCOUNT

The purpose of keeping accounts is to furnish data for studying the business. Because a crop shows a loss is not sufficient reason for ceasing to produce it. The accounts and the farm business should then be studied to find whether the cost of production can be decreased or the income can be increased so as to make the crop more profitable, and also to find whether any other crop can be substituted that will use the land and the labor available at this season of the year and pay for it at a higher rate.

The account should be compared with average costs from other farms obtained from the A. and M. College or from other sources. Study especially for efficiency of man and horse labor.

If the account shows a profit, study the problem of making it more profitable. It is sometimes easier to make a profitable crop more profitable than to make an unprofitable crop profitable.

FACTORS OF COST

Crop ..... **Acres** .....

	Totals		Averages Per Acre	
	Quantity	$	Quantity	$
Seed				
Fertilizer				
Lime				
Manure				
Twine				
Sprays				
Threshing				
Wire				
Ginning, bagging, ties				
Baling				
Silo filling				
Man labor				
Horse labor				
Tractor use				
Equipment use				
Use of land				
Use of buildings				
Miscellaneous				
Total cost				
Total credits				
Profit or loss				
Net cost (after crediting straw or other by-products)				

	This Crop
Yield per acre	
Cost per unit	
Value per unit	
Profit or loss per unit	
Returns per man hour (cost of man labor plus total profit or minus total loss) divided by total No. of man hours	