

UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director.

CIRCULAR NO. 203

CONTROL OF FARM EXPENSES

Lexington, Ky.

December, 1926.

Published in connection with the agricultural extension work carried on by cooperation of the College of Agriculture, University of Kentucky, with the U. S. Department of Agriculture and distributed in furtherance of the work provided for in Act of Congress of May 8, 1914.

Coll
loca
prof
has
foll
the
of t
of e

inc
pre
the
ing

TAF

N
Fa

Bu

CIRCULAR NO. 203

Control of Farm Expenses

By W. D. NICHOLLS

Studies made by the Department of Farm Economics of the College of Agriculture* in recent years on several hundred farms located in various sections of Kentucky, indicate that farm profits depend largely upon the control of farm expenses. This has been particularly true during the period of declining prices following the war-time price inflation, when prices of most of the products which farmers sold declined more than did prices of the things they bought. Economy of operation and control of expenses have in consequence increased greatly in importance.

INCREASING FARM PROFITS ABOVE THE AVERAGE

That there is considerable margin by which efficient farmers increase their profits above the average is shown by the figures presented in Table 1 which contrasts the yearly net earnings of the most successful farmers in several localities, with the earnings of the average farmer in the same localities.

TABLE 1.—Profits of Successful Farmers in Various Sections of Kentucky Contrasted with Average Farmers in the Same Localities.

No. Farms	Location	Year	Average Yearly Earnings	Average of Most Successful Farms
162	Shelby, Spencer, Oldham and Hardin Cos.	1915	\$799	\$2,919
80	Kenton Co.	1916	871	1,866
241	Mason and Fleming Cos.	1922	1,029	3,203
270	Union and Henderson Cos.	1924	465	3,058
115	"Jackson Purchase" Region	1922	-113**	638
84	Larue Co.	1922	332	1,371

*The cost of production studies were carried on in cooperation with the Bureau of Agricultural Economics of the U. S. Department of Agriculture.

**Loss.

In Mason and Fleming Counties in 1922 the average farm in a total of 241 farms had \$52.00 of expenses per \$100.00 receipts, while the most profitable twelve farms had \$42.00 of expenses per \$100.00 receipts.* In Larue County in 1922 the average expenses per \$100.00 receipts on 80 farms were \$49.00 and for the most profitable farms \$38.00. In Union and Henderson Counties in 1924 the expenses per \$100.00 of receipts were \$54.00 for an average of 270 farms and \$33.00 for the most profitable 12 farms. These comparative figures are presented in Table 2.

TABLE 2.—Comparison of Most Profitable and Average Farms in Control of Expenses.

Expenses Per \$100 Receipts*	Average	Most Profitable Farms
Mason and Fleming Counties (1922)	\$52	\$42
Larue County (1922)	49	38
Union and Henderson Counties (1924)	54	33

*Expenses include current expenses, the value of unpaid family labor, and decreases in inventories. They do not include the value of the operator's labor, or interest on the capital invested in the farm business. Receipts include farm sales and increases in inventories.

VARIATION IN THE ACCOMPLISHMENT OF LABOR ON DIFFERENT FARMS

Studies of the variation in labor accomplishment made on 241 farms in Mason and Fleming Counties in 1923, 84 farms in Larue County in 1923, and on 270 farms in Union and Henderson Counties in 1924, indicated a wide difference in the labor accomplished per man in twelve months. In the first area 258 productive days work per man were accomplished on the most profitable farms as against 203 days on the average farm; in the second area 264 days work per man against 218 for the average farm; and in the third area 273 days work as against 236 days for the average farm. (See Table 3.)

TABLE 3.—Comparison of Work Accomplished Per Man in Various Sections of Kentucky

Locality	Productive Days Work Accomplished Per Man in Twelve Months	
	On Average Farm	On Most Successful Farms
Mason and Fleming Counties, 241 farms, 1922	203	258
Union and Henderson Counties, 270 farms, 1924	218	264
Larue County, 84 farms, 1922	236	273

The marked variation in the accomplishment of labor on different farms is further exemplified in Table 4 which presents data obtained on farms in Christian County. Some farmers were able to produce corn with an average expenditure in labor of one-half hour per bushel, while others expended three times as much per bushel. Some produced wheat with an average use of three-quarters of an hour of labor to the bushel while others required an hour and three-quarters per bushel. Some produced hay by the use of only eight hours to the ton while others required more than twice that length of time. Some were able to produce 1,000 pounds of tobacco by using less than 300 hours of labor while others used over 400 hours. Differences in yields are the most important single cause of these marked differences in labor expended per unit of product. Other causes are noted in the later pages of this circular.

TABLE 4.—Comparison of Labor Accomplishment of Producers of Farm Crops in Christian County, Kentucky, 1922-23.

Kind of Crop	Time Required to Produce a Unit of Product		
	By Average Producer Hours	By Most Efficient Producer Hours	By Least Efficient Producer Hours
Corn, per bushel	.66	.5	1.47
Tobacco, per 1000 pounds	336	280	422
Wheat, per bushel	1.1	.74	1.74
Hay, per ton	11.2	7.9	17.7

EFFECT OF YIELDS ON COSTS

The cost of cultivation of an acre of thin land is nearly as great as that of an acre of productive land, but the cost per bushel usually is considerably less on the productive land. The effect of yield on cost is well illustrated in Table 5 which shows the results from cost records kept on the wheat crop on 19 farms in Western Kentucky in 1925. The average cost was \$18.10 per acre, the average yield 14.8 bushels per acre and the cost per bushel \$1.22. The average cost per acre on the 5 farms having the lowest yield was \$15.41, and the yield of 8 bushels per acre gave an average cost of \$1.93 per bushel. The average cost per acre on the five farms having the highest yield was \$21.26, and the average yield was 23.2 bushels per acre, the average cost 92 cents per bushel.

The difference in yields was one of the most important causes of the wide variation in the costs of the two groups.

TABLE 5.—Effect of Yield on Cost of Producing Wheat in Western Kentucky in 1925.
(Acre Basis)

Items of Cost	Five Farms Having Highest Yields		Five Farms Having Lowest Yields	
	Quantity	Total Value	Quantity	Total Value
Man labor	17.4 hrs.	\$3.04	11.8 hrs.	\$2.06
Horse work	23.0 hrs.	2.30	20.4 hrs.	2.04
Machinery (except for threshing)		1.50		1.50
Seed	1.4 bu.	2.25	1.1 bu.	1.73
Fertilizer	198.0 lbs.	2.19	158 lbs.	1.73
Twine	2.5 lbs.	.45	.75 lbs.	.14
Contract threshing (machine work)		2.78		.96
Interest and taxes on land		5.00		4.00
Miscellaneous costs		1.75		1.25
Total		\$21.26		\$15.41
Yield of grain, bushels		23.2		8.0
Cost per bushel		\$0.92		\$1.93

An equally striking illustration of the effect of yields on cost of production is afforded by figures from the Kentucky studies on the cost of producing tobacco. Table 6 presents figures from this study for the year 1922, including 97 farms. The ten highest-profit producers made a profit of 24.5 cents per pound; the ten lowest-profit producers incurred a loss of 3.4 cents per pound. The cost to the high-profit producers was 11.8 cents per pound; to the low-profit producers 22.3 cents per pound. The high-profit producers secured a yield of 1,387 pounds per acre; the low-profit producers, 874 pounds. The high-profit producers obtained a much higher quality of product than the low-profit producers, and received 36.3 cents per pound for their tobacco as against 18.9 cents per pound received by the low-profit producers.

TABLE 6.—Comparison of Yield and Quality of Tobacco on Profitable and Unprofitable Farms.
(Burley District, 1922)

	On Ten Highest Profit Farms	On Ten Lowest Profit Farms
Total cost of production per acre	\$163.60	\$194.74
Yield per acre, pounds	1,387	874
Cost per pound	11.8c	22.3c
Price received per acre	\$503.31	\$165.29
Price received per pound	36.3c	18.9c
Profit or loss per acre	\$339.71	\$29.45 loss
Profit or loss per pound	25.5c	3.4c loss

THE COST OF HORSE WORK

The expense of maintaining work stock is a considerable item of farm cost. On many farms it is a contributing cause of low profits. Farmers may materially reduce the cost of horse work by securing the maximum amount of productive work per horse and by reducing the carrying costs on work horses.

The maximum amount of productive work per horse is secured mainly (1) by having a cropping system which provides an even distribution of horse work thruout the year, (2) by carefully planning and scheduling all the farm work so that

odd jobs are done when field work cannot be done, and time is not lost from field work because of the necessity of stopping the teams to do work which should have been done when the field work could not be done, (3) by the production of live stock which serves to furnish profitable work for teams in slack seasons, (4) by a convenient layout of farm buildings and fields.

The cost of keeping work stock can be further reduced by a study of economies in feeding, such as turning the stock out on pasture and feeding lightly when not at hard work, carrying them thru the late fall and winter cheaply on such roughage as sorghum or corn fodder, and a little grain, thus saving high-priced grain and hay for the time when the teams are doing hard work such as breaking land and cultivating crops.

The yearly carrying charge on work stock can be reduced to a considerable extent by the avoidance of depreciation. Young work stock usually are started to work on farms as three-year-olds. They are in their prime at five or six years old and do not begin to decline in selling price until they are eight or nine years old. This makes it possible for a farmer to use his work stock for four or five years and still sell them at their maximum price, for use in cities and in other farming sections which buy work stock and do not raise them.

PROPER FARM EQUIPMENT

The right kind and amount of equipment and buildings is important in affecting farm costs. However, it is very important to avoid over-investment in these items. Mistakes in this respect have been a cause of high costs and low profits on many farms.

GOOD MANAGEMENT A VITAL FACTOR

A vital factor affecting costs and profits in the operation of a farm is the personal ability and activity of the operator as a manager. Good management consists in the selection and combination of labor, land and equipment so as not to have too much or too little of each, and in the operation of the farm enterprise so as to make it return the maximum profit.

EXAMPLES OF HIGH COST AND LOW COST PRODUCTION IN THE GROWING OF TOBACCO

A contrast between low cost and high cost production is furnished by the results obtained by two tobacco growers farming in the same locality in Central Kentucky. The results also illustrate the importance of quality and price in determining the profitableness of tobacco production. The first grower, operating a 100 acre farm, planted 5 acres of tobacco on land in prime condition. The remaining portion of the farm was in pasture and feed crops. This grower followed the practice of planning several years ahead for the land upon which he intended to grow tobacco, enriching the prospective tobacco fields by legumes and feeding fodder and other roughage on this land and applying available manure to it. This practice put the land into the porous friable condition necessary for high yields and good quality of tobacco. Having only a moderate acreage to plant he was able to use greater care in the preparation and care of his plant bed. As a consequence he had an abundant supply of vigorous early plants, and secured a good stand, thus saving the expense of a large amount of resetting. The early setting also was conducive to the production of a bright leaf of fine texture and in largest demand on the market. The crop yielded 1,600 pounds per acre and sold for an average of 25 cents per pound. Labor costs were kept down, since this grower raised the crop with his own labor supplemented by a small amount of hired labor. The cost per acre was approximately \$250.00 and the crop brought approximately \$400.00 an acre, yielding the grower a net profit of \$750.00 over all costs including compensation for his own labor and land at current rates.

Another grower planted 20 acres of tobacco on a 200-acre farm. A considerable part of the acreage planted was indifferent tobacco land. Because the acreage undertaken was too large for the available labor, sufficient care could not be given to the preparation of the plant bed. The plants were late, resulting in a poor stand, a large expense for resetting, an uneven crop, maturing late and of inferior color and quality and low yield. The crop brought 12 cents a pound or \$85.00 an acre.

The cost of production was excessive because a large amount of high-priced labor was used. The total cost was \$290.00 an acre, resulting in a loss of \$205.00 an acre or more than \$4,000.00 for the entire crop.

HOW PRODUCTION COSTS MAY BE REDUCED

Successful farmers in Kentucky have reduced their production costs and increased their profits by the following practices:

Increasing crop yields by getting the most out of farm-grown fertilizers by treating the thin places in the fields with manure, cornstalks, rotted straw and other litter, and by making greater use of legumes like red clover, cowpeas, soybeans and alfalfa. The application of ground limestone and phosphate is an economical means of increasing yields and will reduce unit costs on many farms.

Reducing the cultivated acreage. Stopping the cultivation of the thinner land and allowing that to remain in grass and clover until it will yield enough to make its cultivation profitable. Reducing expenses by less harvesting and more grazing and hogging down crops.

Decreasing labor costs by better planning. For example, if planting corn is the job, a farmer should see that the planter is in working order; that the doubletree and neck-yoke are on it; that the oil can and monkey wrench are in their places and the seed corn is ready. When going to the field to plow, he should take an extra point and a wrench to put it on with. This may save a trip to the house or to town to get a new point.

Farmers should make a practice of carrying with them when at work a pocket memorandum book to which should be tied a short lead-pencil, and of setting down in this the jobs to be done on rainy days.

The surest way for a farmer to reduce the cost of labor is to work with the hired man and direct him as he works. Benjamin Franklin said, "He who by the plow would thrive, himself must either hold or drive."

Farmers should whenever practicable save labor by having one man drive more horses. They should also consider the use

of the three-horse breaking plow, and the replacing of the one-horse cultivator with the two horse cultivator wherever practicable.

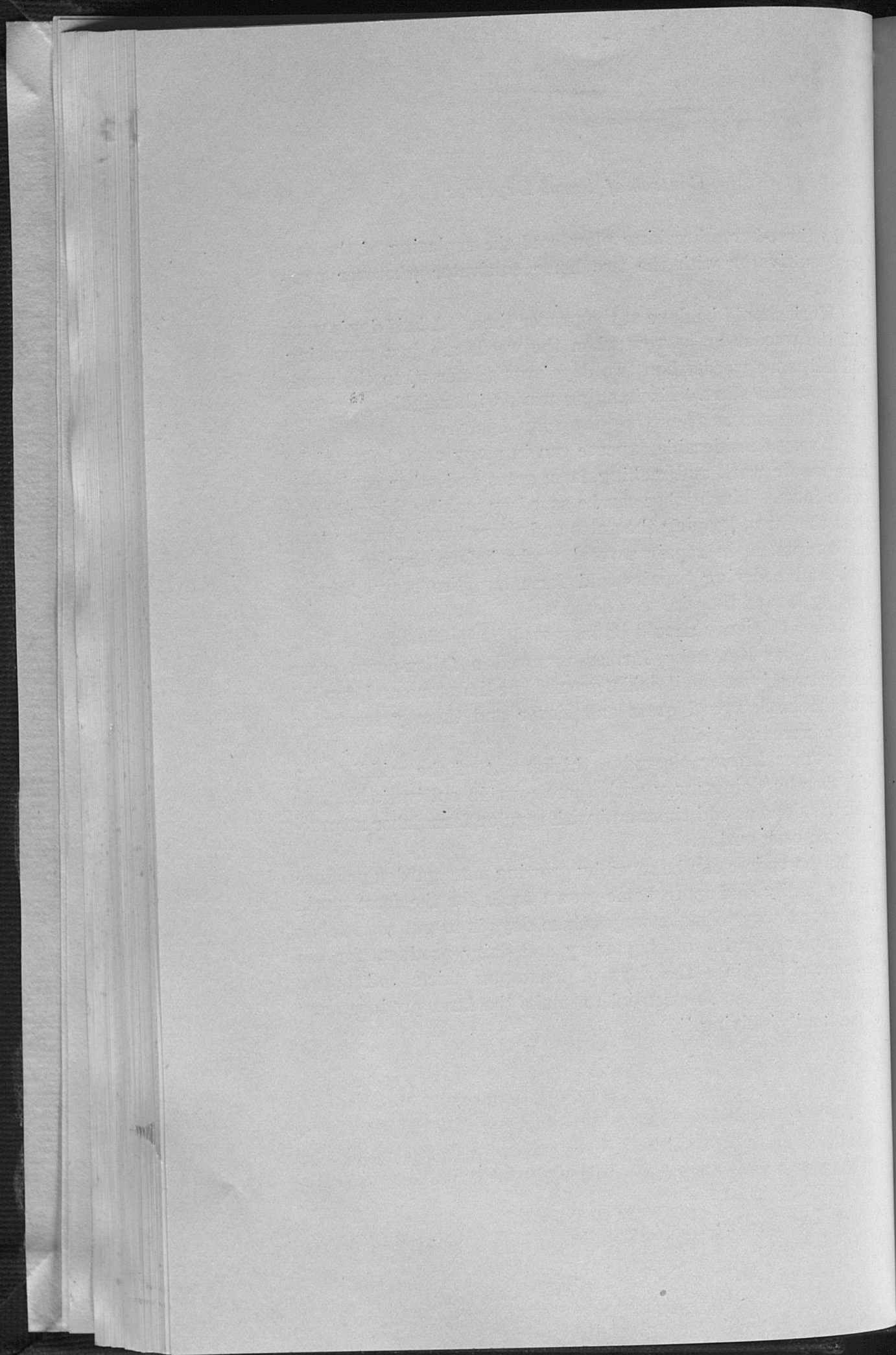
Work should be done at the proper time. A half day's work with the weeder or harrow when the weeds are just sprouting will kill more weeds than two days' work later when the weeds have gotten a start. Exchanging work with neighbors is often an effective means of cutting down hired labor costs.

A very considerable expense can in many cases be saved by home repair work and making farm gates and other equipment on the farm. Much labor can be saved by making things handy about the farm, keeping the gates and doors hung, putting tools and equipment in repair several weeks before they are to be used, and ordering repairs and farm supplies early, thereby avoiding loss of time in rush seasons.

Labor efficiency should be increased by improving the farm layout. One Kentucky farmer removed a fallen-down stone fence between two small fields, ground the limestone and applied it to the land, sowed grass and clover and thereby secured a greatly increased yield.

Another farmer cleared a thicket out of the middle of a field, thereby doing away with short rows in cultivation. This work was done at odd times and with regular farm labor at practically no cash outlay.

Much expense can be saved by growing more garden produce for the family and more home-grown feeds for the farm stock. "The surest way to make wages these days is to put some labor on vegetables, fruits, meat, poultry and dairy products for use at home. Not since the days of homespun shirts and tallow candles has it been so essential to make the farm produce most of the family's living."



U

en
wi
of