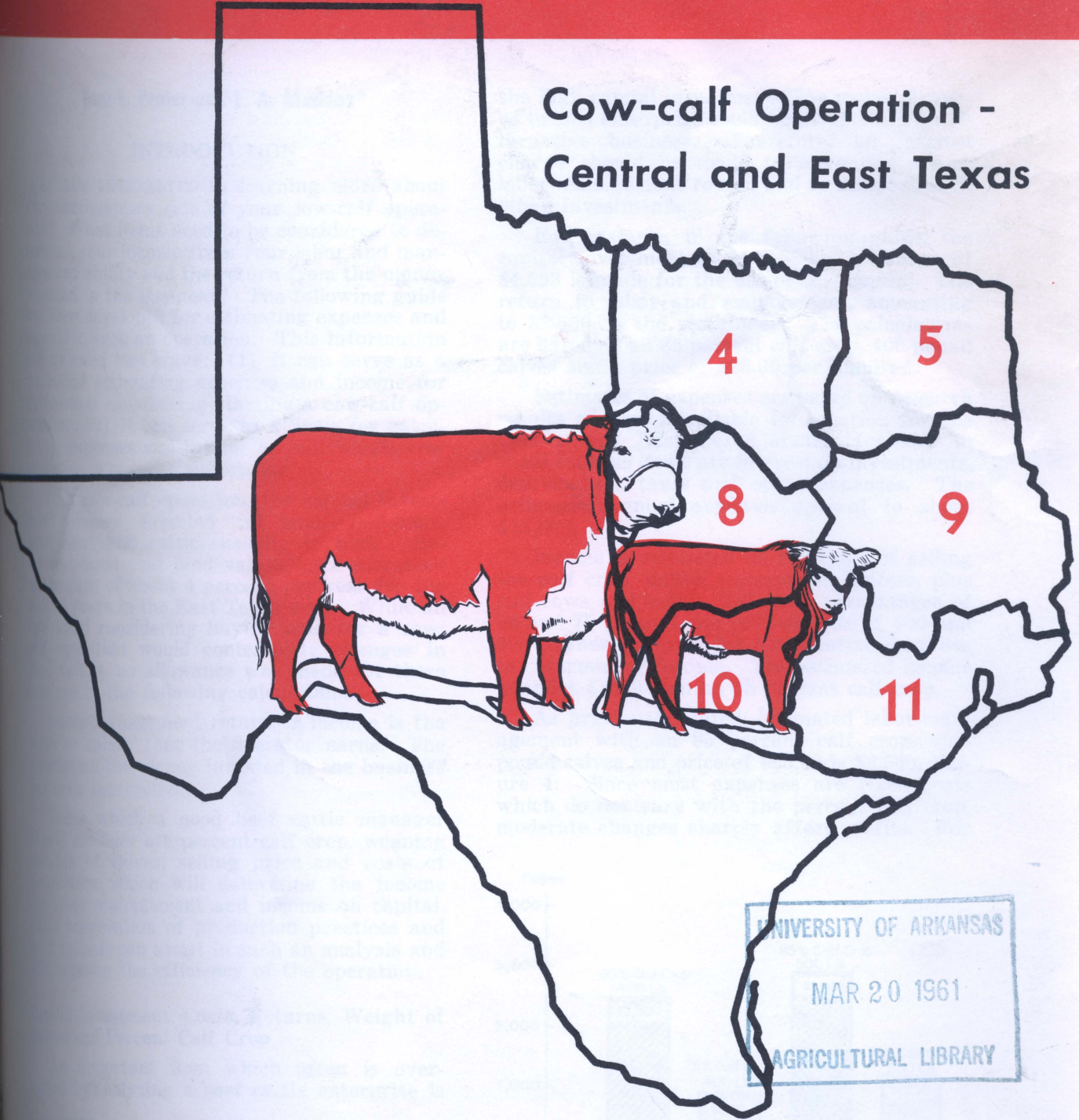


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Guide for Estimating Annual Return to Labor, Management and Capital

Cow-calf Operation - Central and East Texas



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Guide

FOR ESTIMATING ANNUAL RETURN TO LABOR, MANAGEMENT AND CAPITAL COW-CALF OPERATION—CENTRAL AND EAST TEXAS

Tom E. Prater and L. A. Maddox*

INTRODUCTION

ARE YOU INTERESTED in learning more about the business side of your cow-calf operation? What items need to be considered to determine your income from your labor and management ability and the return from the money invested in the business? The following guide has been developed for estimating expenses and income in such an operation. This information can be used two ways: (1) It can serve as a guide for estimating expenses and income for individuals considering starting a cow-calf operation; (2) It can serve as a basis for calculating expenses and income of individuals now operating a cow-calf enterprise.

In a cow-calf operation, the capital investment—money invested in land, buildings, equipment and cattle—usually is high. Research shows that land values have increased at the rate of about 4 percent per year for the last 25 years in the East Texas area. While an individual considering buying land for a cow-calf operation would contemplate changes in land values, no allowance was made for these changes in the following calculations.

Labor-management return or income is the wage or salary that the operator earns. The interest on the money invested in the business has been subtracted.

Items which a good beef cattle manager should consider are percent calf crop, weaning weights of calves, selling price and costs of production which will determine the income for labor management and income on capital. Close observation of production practices and good records can assist in such an analysis and will improve the efficiency of the operation.

Capital Investment, Costs, Returns, Weight of Calves and Percent Calf Crop

An important item which often is overlooked in analyzing a beef cattle enterprise is

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the high capital investment. The money invested in this enterprise could be invested in an alternative business. Therefore, an interest charge should be made to have the proper labor-management return and to compare with other investments.

For example, in the following guide, the capital investment is \$102,850. A charge of \$4,593 is made for the use of this capital. The return to labor and management, amounting to \$2,500, is the remainder. The calculations are based on an 85 percent calf crop, 400-pound calves and a price of \$25.60 per hundred.

Estimates of expenses are based on research results and other reliable information for the Central and East Texas areas. Included in these expense items are interest on investments, depreciation, taxes and other expenses. The estimated annual expenses amount to about \$13,000.

Income is estimated on the basis of selling the calf crop, minus replacement heifers, plus cull cows and bulls. Calf-crop percentages of 85 and 75 percent and calf weights of 400 and 500 pounds are used for comparative purposes in determining income. The estimated income is about \$15,500 on an 85 percent calf crop.

As previously stated, estimated labor-management with an 85 percent calf crop, 400-pound calves and price of \$25.60 is \$2,500, Figure 1. Since most expenses are fixed costs which do not vary with the percent calf crop, moderate changes sharply affect profits. For

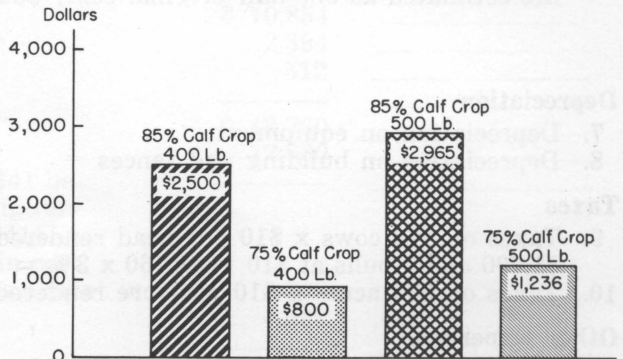


Figure 1. Estimated return to labor-management income at various weight levels and percent calf crop.

example, if the calf crop is 75 percent instead of 85 percent, the labor-management return drops by two-thirds, from \$2,500 to \$800.

It is significant to observe the effect of heavier calves on net profit. Under present conditions, it is estimated that the added cost of producing 500-pound calves, in contrast to 400-pound calves, is \$18. The added cost is a good investment, however, since labor-management income is increased from \$2,500 to \$2,965 with an 85 percent calf crop.

With a 75 percent calf crop, the added cost is still a good investment, labor-management income being increased from \$800 to \$1,236.

Size Unit

The care of the 170 mother cows can be considered an economic size unit in terms of labor. About 400 hours of seasonal labor should

be hired. A \$2,500-labor-management income was the original base for the economic unit. This roughly is comparable to a \$4,200-wage in town.

SUMMARY

This guide indicates the importance of good husbandry and management in a beef operation. The best management job can be done when good records are available for analysis of the calf weights, percent calf crop, costs and returns. Records assist not only in analyzing these items, but also in future income tax management, planning general use of money to get the maximum profit and similar management procedures.

Your local county agricultural agent can assist you in analyzing your operation. (An explanation of the cost and return items used in the guide is given at the conclusion.)

GUIDE FOR ESTIMATING ANNUAL RETURN TO LABOR AND MANAGEMENT COW-CALF (BEEF) OPERATION

Original Investment	Estimate	Your Farm-Ranch
1. Land investment (including buildings, fences) (\$6,800 value on building, fences) 680 acres at \$100 or 850 acres x \$80 =	\$ 68,000	_____
2. Cattle investment (170 cows x \$165) = (6 bulls x \$300) =	28,050 1,800	_____ _____
3. Tractor, pickup and miscellaneous equipment =	5,000	_____
Total	\$102,850	_____
 Estimated Expenses		
<i>Interest on investment</i>		
1. Land charge (minus buildings, fences) \$61,200 x 4% =	\$ 2,448	_____
2. Interest on cattle investment \$165 per head x 170 cows = \$28,050 and \$1,800 for 6 bulls = \$29,850 x 6% =	1,791	_____
3. Buildings, fences (average value over useful life estimated as one-half original cost) \$3,400 x 6% =	204	_____
4. Interest on tractor investment (average value over useful life estimated as one-half original cost) \$1,000 x 6% =	60	_____
5. Interest on pickup investment (average value over useful life estimated as one-half original cost) \$1,000 x 6% =	60	_____
6. Interest on miscellaneous investment (average value over useful life estimated as one-half original cost) \$500 x 6% =	30	_____
Subtotal	\$ 4,593	_____
 Depreciation		
7. Depreciation on equipment =	\$ 450	_____
8. Depreciation on building and fences =	362	_____
 Taxes		
9. Taxes on 170 cows x \$10 per head rendered value = \$1,700 and 6 bulls at \$10 = \$1,760 x 3% =	53	_____
10. Taxes on 680 acres x \$10 per acre rendered value = \$6,800 x 3% =	204	_____
 Other Expenses		
11. Cow replacement (keep heifers from calf crop) =	_____	_____
12. Bull cost \$6 per cow for 170 cows =	1,020	_____

	Estimate	Your Farm-Ranch
13. Protein supplement \$5 per mother cow x 170 cows =	\$ 850	_____
14. Hay cost \$6 per cow x 170 cows =	1,020	_____
15. Salt and bonemeal =	120	_____
16. Vaccines, medicine and veterinary charge =	170	_____
17. Fertilizer cost \$5 per acre x 256 acres =	1,280	_____
18. Pickup truck expense per year 8,000 miles x \$.08 =	640	_____
19. Marketing expense \$.60 per 100 pounds x 695 hundredweight =	417	_____
20. Saddle horse, feed and depreciation =	85	_____
21. Labor hired 400 hours x \$.75 per hour =	300	_____
22. Seed planted =	170	_____
23. Weed control \$1 per acre x 668 acres =	668	_____
24. Spray material \$.30 x 170 cows =	51	_____
25. Maintenance on fence, watering, corrals and shed =	334	_____
26. Miscellaneous =	232	_____
	<hr/>	_____
	Estimated annual expense \$ 13,001	_____

ESTIMATED INCOME FROM 85 PERCENT CALF CROP, 400-POUND CALVES

Number of cows	170	_____	_____
Percent calf crop	85	_____	_____
Price per hundredweight for calves	\$25.60	_____	_____
Estimated Income			
1. 145 400-pound good to choice slaughter calves			_____
22 heifer calves kept for replacement			_____
<hr/>			
123 400-pound good to choice slaughter calves			_____
49,200 pounds x \$25.60 =	\$ 12,595		_____
2. 19 900-pound cull cows = 17,100 x \$.14 =	2,394		_____
3. 2 1,600-pound cull bulls = 3,200 pounds x \$.16 =	512		_____
	<hr/>		_____
Estimated annual income	\$ 15,501		_____
Estimated expense	13,001		_____
	<hr/>		_____
Estimated annual labor-management income	\$ 2,500		_____
Estimated return to capital	4,593		_____
	<hr/>		_____
Estimated annual return to labor management, capital	\$ 7,093		_____

ESTIMATED INCOME FROM 75 PERCENT CALF CROP, 400-POUND CALVES

Estimated Income			
1. 128 400-pound good to choice slaughter calves			_____
22 heifer calves kept for replacement			_____
<hr/>			
106 400-pound good to choice slaughter calves			_____
42,400 pounds x \$25.60 hundredweight =	\$ 10,854		_____
2. 19 900-pound cull cows, 17,100 pounds x \$.14 =	2,394		_____
3. 2 1,600-pound cull bulls, 3,200 pounds x \$.16 =	512		_____
	<hr/>		_____
Estimated annual income	\$ 13,760		_____
Estimated annual expense	12,960		_____
(marketing cost reduced \$41 be- cause 68 less hundredweights were sold (68 x \$.60 = \$41). This is the only change in cost.			_____
Estimated annual labor-management income	800		_____
Estimated return to capital	4,593		_____
	<hr/>		_____
Estimated annual return to labor management, capital	\$ 5,393		_____

ESTIMATED INCOME FROM 85 PERCENT CALF CROP, 500-POUND CALVES

Estimated Income	Estimate	Your Farm-Ranch
1. 145 500-pound good to choice slaughter calves		_____
22 heifer calves kept for replacement		_____
<hr/>		
123 500-pound good to choice slaughter calves		
61,500 pounds x \$25.60/hundredweight =	\$ 15,744	_____
2. 19 900-pound cull cows = 17,100 pounds x \$.14 =	2,394	_____
3. 2 1,600-pound cull bulls = 3,200 pounds x \$.16 =	512	_____
	<hr/>	_____
Estimated annual income	\$ 18,650	_____

Estimated Expense

1. Items 1 through 25 in guide =	\$13,001	
2. Extra market charge for 123 added hundredweights x \$.60 =	74	
3. Added cost for producing =	2,610	
The 100 pounds extra weight per calf produced (\$18 x 145 = \$2,610). This may be feed cost, bull cost or pasture improvement cost.		
Estimated annual expense	\$ 15,685	_____
Estimated return to annual labor-management income	\$ 2,965	_____
Estimated return to capital	4,593	_____
	<hr/>	_____
Estimated annual return to labor management, capital	\$ 7,558	_____

ESTIMATED INCOME FROM 75 PERCENT CALF CROP, 500-POUND CALVES

Estimated Income		
1. 128 500-pound good to choice slaughter calves		_____
22 heifers kept for replacement		_____
<hr/>		
106 500-pound good to choice slaughter calves		
53,000 pounds x \$25.60/hundredweight =	\$ 13,568	_____
2. 19 900-pound cull cows = 17,100 pounds x \$.14 =	2,394	_____
3. 2 1,600-pound cull bulls = 3,200 pounds x \$.16 =	512	_____
	<hr/>	_____
Estimated annual income	\$ 16,474	_____

Estimated Expense

1. Items 1 through 25 in guide =	\$13,001	
2. Extra market charge for 38 added hundredweights x \$.60 =	23	
3. Added cost for producing =	2,214	
The 100 pounds extra weight per calf is estimated to cost \$18 per calf produced (\$18 x 123 = \$2,214). This may be feed cost, bull cost or pasture improvement cost.		
Estimated annual expense	\$ 15,238	_____
Estimated return to annual labor-management income	\$ 1,236	_____
Estimated return to capital	4,593	_____
	<hr/>	_____
Estimated annual return to labor management, capital	\$ 5,829	_____

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EXPLANATION OF ITEMS USED IN GUIDE

Investment is based on fair market values and is the capital requirement for this beef operation. The investment per mother cow is \$605 per cow in this estimate. It will vary in individual operations.

Estimated Expenses

Item 1.—The 4 percent *Interest on investment* in land charges is based on a reasonable return to an investment other than land. Land charges also may be based on a fair rental charge and shown as an expense.

Note: Recent research indicates that land values have increased at the rate of about 4 percent the last 25 years in the East Texas area. No assumption or estimate is made to offset this in this guide.

Item 2.—Interest charge on the cattle investment is based on 6 percent of the original investment. It is realized market value and may increase or decrease this value.

Items 3, 4, 5 and 6.—These interest charges are based on 6 percent of one-half the original value over the useful life. It is assumed that the money investment will be invested only for this period of time.

Note: In determining capital investment charges in a regular record book system, add the beginning and ending inventories and divide by two to determine the capital investment for the year. Then multiply by the applicable interest rate to determine the interest charge.

Interest on investment should be charged regardless of equity. Any equity owned by the operator receives the interest as return to capital. (For example, an operator has a \$100,000 capital investment and owns one-half of the equity. If the interest rate is 6 percent, he gets \$3,000 and the financial institution receives \$3,000.)

Item 7.—Depreciation on equipment is based on \$5,000 original value, Item 3, minus \$500 salvage value or \$4,500 depreciated at 10 percent. This indicates a 10-year life expectancy on this equipment.

Item 8.—Depreciation on buildings, fences, corrals, etc. is based on 5 percent of a 20-year life expectancy of \$6,800. There will be no salvage value. The value of these items is included in land investment.

Items 9 and 10.—*Taxes:* Includes county, state and school taxes. Each mature animal is rendered at \$10 per head with a 3-percent charge on this value. All other taxes are based on 3 percent of rendered value.

Other Expenses

Item 11.—*Cow replacements:* Kept from calf crop. Life expectancy is based on 8 years. Twenty-two heifers are kept each year. A 2-percent death loss is expected and 19 cull cows are sold annually.

Item 12.—*Bull costs:* Includes depreciation and replacement costs as well as feed since salvage value is included in income.

Items 13, 14, 15 and 16.—Self-explanatory and will vary considerably.

Item 17.—*Land improvement costs:* Fertilizer, brush clearing and similar items should be accounted for in this item.

Item 18.—Self-explanatory.

Item 19.—*Marketing expense:* Based on \$.60 per 100 pounds sold and includes hauling.

Item 20.—Self-explanatory.

Item 21.—Hired labor is based on minimum needs for repairing fences, working cattle and similar items.

Items 22, 23 and 24.—Self-explanatory.

Item 25.—Based on minor repairs to the items described. Any major improvement is a capital expense.

Item 26.—*Miscellaneous:* Items such as insurance, phone calls, business magazines and other items.

The preceding items contribute to annual expenses and should be accounted for annually.

Estimated Income

Estimated income is based on calf-crop percent, minus replacement heifers, plus cull cows and bulls. Bull replacement costs are accounted for in Item 11. Income is based on an 85 and 75 percent calf crop and calf weights of 400 and 500 pounds with replacement heifers held constant for comparative purposes. This is based on the life of the cow, 8 years, with 22 cows being replaced each year.

The prices used are comparative but will vary.

SUMMARY

The cost and return figures in this guide indicate how important weight and percent calf crops are to the beef cattle producer.

When analyzing your business, check with your county agricultural agent. He can assist you with outlook information, trends and new findings.

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