

# Department of Agricultural and Resource Economics

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## 2021 COW-CALF BUDGET

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The cow-calf budget was developed to assist Tennessee cattle producers in estimating the cost of production and net return to land and management. This budget should be considered a template or guide to estimating expenses and revenues, and it should not be considered representative of all circumstances. Users of this budget are encouraged to enter information into the budget that reflects their individual situation and production practices. Using information most closely related to a particular operation will improve the decision-making process.

**Disclaimer:** Significant variability in inputs, prices, and production practices exist across operations and from region to region. The information contained in this spreadsheet relies on estimates and assumptions specific to Tennessee. This budget should not be construed as a reflection of all circumstances across the state, as regional variability does exist. To improve the value of this tool, users are encouraged to use inputs, prices, production practices and management that are employed on their specific operation.

## Estimated Returns and Expenses for Beef Cow-Calf Operation in Tennessee

Item	Unit	Quantity	Price	\$/Cow	\$/Herd
<b>Revenue</b>					
Cull Cows	lb	_____	\$_____	\$_____	\$_____
Heifer Calves	lb	_____	\$_____	\$_____	\$_____
Steer Calves	lb	_____	\$_____	\$_____	\$_____
<b>Total Revenue</b>				<b>\$_____</b>	<b>\$_____</b>
<b>Variable Expenses</b>					
Pasture Production	acre	_____	\$_____	\$_____	\$_____
Hay Production	acre	_____	\$_____	\$_____	\$_____
Purchased Hay per Cow	ton	_____	\$_____	\$_____	\$_____
Bull (Pasture & Hay)	\$	_____	\$_____	\$_____	\$_____
Supplemental Feed	head	_____	\$_____	\$_____	\$_____
Salt & Mineral	lb	_____	\$_____	\$_____	\$_____
Vet & Med	head	_____	\$_____	\$_____	\$_____
Reproduction (Artificial Insemination)	head	_____	\$_____	\$_____	\$_____
Other Expenses	head	_____	\$_____	\$_____	\$_____
Labor	hours	_____	\$_____	\$_____	\$_____
<b>Production Expenses</b>				<b>\$_____</b>	<b>\$_____</b>
Interest	\$	\$_____ %	\$_____	\$_____	\$_____
Marketing	head	_____	\$_____	\$_____	\$_____
Land Rent	acre	_____	\$_____	\$_____	\$_____
<b>Total Variable Expenses</b>				<b>\$_____</b>	<b>\$_____</b>
<b>Returns to Variable Expenses</b>				<b>\$_____</b>	<b>\$_____</b>
<b>Fixed Expenses</b>					
Livestock Facilities & Equipment	head	_____	\$_____	\$_____	\$_____
Pasture & Hay Machinery/Equipment	head	_____	\$_____	\$_____	\$_____
Purchased Breeding Stock	head	_____	\$_____	\$_____	\$_____
Purchased Heifers, (not bred)	head	_____	\$_____	\$_____	\$_____
Miscellaneous Overhead	head	_____	\$_____	\$_____	\$_____
<b>Total Fixed Expenses</b>				<b>\$_____</b>	<b>\$_____</b>
<b>Total Expenses</b>				<b>\$_____</b>	<b>\$_____</b>
<b>Net Return to Land and Management</b>				<b>\$_____</b>	<b>\$_____</b>

## Estimated Returns and Expenses for Beef Cow-Calf Operation in Tennessee

Item	Unit	Quantity	Price	\$/Cow	\$/Herd	Your Farm
<b>Revenue <sup>1</sup></b>						
Cull Cows	lb	1200	\$ 0.57	\$ 109.44	\$ 5,472.00	_____
Heifer Calves	lb	520	\$ 1.27	\$ 171.70	\$ 8,585.20	_____
Steer Calves	lb	550	\$ 1.44	\$ 348.48	\$ 17,424.00	_____
<b>Total Revenue</b>				<b>\$ 629.62</b>	<b>\$ 31,481.20</b>	_____
<b>Variable Expenses</b>						
Pasture Production	acre	2.00	\$ 116.28	\$ 232.56	\$ 11,628.20	_____
Hay Production	acre	0.90	\$ 180.12	\$ 162.11	\$ 8,105.49	_____
Purchased Hay per Cow	ton	0.00	\$ 80.00	\$ -	\$ -	_____
Bull (Pasture & Hay) <sup>2</sup>	\$	1.7	\$ 394.67	\$ 26.84	\$ 1,341.89	_____
Supplemental Feed	head	1	\$ 16.45	\$ 16.45	\$ 822.38	_____
Salt & Mineral	lb	91	\$ 0.35	\$ 31.94	\$ 1,596.88	_____
Vet & Med	head	1	\$ 31.90	\$ 31.90	\$ 1,595.00	_____
Reproduction (Artificial Insemination) <sup>3</sup>	head	0	\$ 56.20	\$ -	\$ -	_____
Other Expenses	head	1	\$ 1.00	\$ 1.00	\$ 50.00	_____
Labor	hours	8	\$ 10.00	\$ 80.00	\$ 4,000.00	_____
<b>Production Expenses</b>				<b>\$ 582.80</b>	<b>\$ 29,139.83</b>	_____
Interest	\$	\$ 582.80	6%	\$ 17.48	\$ 874.19	_____
Marketing	head	0.86	\$ 27.13	\$ 23.33	\$ 1,166.73	_____
Land Rent	acre	0.00	\$ -	\$ -	\$ -	_____
<b>Total Variable Expenses</b>				<b>\$ 623.62</b>	<b>\$ 31,180.76</b>	_____
<b>Returns to Variable Expenses</b>				<b>\$ 6.01</b>	<b>\$ 300.44</b>	_____
<b>Fixed Expenses</b>						
Livestock Facilities & Equipment	head	1	\$ 71.09	\$ 71.09	\$ 3,554.66	_____
Pasture & Hay Machinery/Equipment	head	1	\$ 223.16	\$ 223.16	\$ 11,158.13	_____
Purchased Breeding Stock <sup>4</sup>	head	1	\$ 23.87	\$ 23.87	\$ 1,193.50	_____
Purchased Heifers, (not bred)	head	0.00	\$ 1,200.00	\$ -	\$ -	_____
Miscellaneous Overhead <sup>5</sup>	head	1	\$ 235.29	\$ 23.53	\$ 1,176.45	_____
<b>Total Fixed Expenses</b>				<b>\$ 341.65</b>	<b>\$ 17,082.73</b>	_____
<b>Total Expenses</b>				<b>\$ 965.27</b>	<b>\$ 48,263.49</b>	_____
<b>Net Return to Land and Management</b>				<b>\$ (335.65)</b>	<b>\$ (16,782.29)</b>	_____

**Footnotes:**

<sup>1</sup>Cull cow revenue (\$/cow) = (weight X price X number of cows sold) / total number of cows

$$\$109.44 = (1200 \text{ lbs} \times \$0.57/\text{lb} \times 8 \text{ cows sold}) / 50 \text{ cows}$$

The same method is used to calculate heifer and steer calf revenue on a \$/cow basis.

<sup>2</sup>Accounts for bull pasture and hay costs on a yearly basis. Assumes costs are 1.7 times higher than a cow.

<sup>3</sup>If artificial insemination is utilized, then users of this budget are encouraged to evaluate the number of breeding bulls.

<sup>4</sup>Accounts for annual depreciation and interest on purchased breeding stock (cows and bulls).

<sup>5</sup>Miscellaneous overhead is assumed to be 10% of total overhead costs to account for unforeseen costs associated with overhead.

## Cow-Calf Budget Assumptions

### Herd Data:

- 50 cow herd with 2 breeding herd bulls
- 90% calf crop with 2% death loss for calves (22 steers & 13 heifers sold)
- 16% cull cow rate with 2% death loss for cows (8 cows sold)
- 100% of replacement heifers are retained from the herd

### Supplemental Feed:

- Replacement heifers: 3 lbs/day commercial feed for 150 days (450 pounds)
- Herd bulls: 5 lbs/day commercial feed for 60 days (300 pounds)
- Calves: 2 lbs/day commercial feed for 30 days (60 pounds)

### Pasture/Hay:

- Pasture
  - Nitrogen: 60 lbs/ac at \$0.40/lb
  - P<sub>2</sub>O<sub>5</sub>: 30 lbs/ac at \$0.30/lb
  - K<sub>2</sub>O: 30 lbs/ac at \$0.35/lb
  - One application of broadleaf herbicide
  - Stocking rate: 2 ac/cow-calf pair
- Hay
  - Nitrogen: 100 lbs/ac at \$0.40/lb
  - P<sub>2</sub>O<sub>5</sub>: 30 lbs/ac at \$0.30/lb
  - K<sub>2</sub>O: 30 lbs/ac at \$0.35/lb
  - One application of broadleaf herbicide
  - Hay yield: 2.5 tons/ac
  - Feeding: 30 lbs/day of hay for 150 days (2.25 tons/yr)

### Veterinary/Medicine:

- Cows: respiratory vaccine (1), clostridial bacterin (1), deworm (1), fly tags (2)
- Replacement heifers: respiratory vaccine (2), clostridial bacterin (2), deworm (1), fly tags (1)
- Herd bulls: respiratory vaccine (1), clostridial bacterin (1), deworm (1), fly tags (2), breeding soundness exam
- Calves: respiratory vaccine (2), clostridial bacterin (2), deworm (1), fly tags (1), implant (1)

### Marketing:

- Commission: 2.5% on total sale
- Insurance: 0.25% on total sale
- Hauling: \$3/loaded mile for 30 miles

### Buildings/Equipment:

- Buildings: 1,500-ft<sup>2</sup> hay barn, 800-ft<sup>2</sup> equipment shed, corral, chute, head gate, fencing
- Equipment: 60-hp tractor, disc mower, hay rake, hay baler, hay wagon, rotary mower, tractor-mounted sprayer, truck



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