

TENNESSEE BEEF BUDGETS

A SYSTEMS APPROACH TO BEEF PRODUCTION

- ***BEEF CATTLE OUTLOOK***
- ***2006-2007 BEEF CATTLE BUDGETS***
- ***RISK ANALYSIS***

May 2007

Alice J. Rhea
Area Specialist
Farm Management

Tammy L. McKinley
Extension Assistant
Agricultural Economics

Emmit L. Rawls
Professor
Agricultural Economics

Kevin W. Ferguson
Area Specialist
Farm Management

LIST OF TABLES

Table	Title	Page
1	2007 Price Outlook	5
2	Maximum Prices Which Western Feedlots May Pay For Feeder Cattle in Tennessee to Break-even	6
3	Comparison of Returns per Head for Backgrounding and Finishing Systems, 2006-2007	7
4	Short-term Backgrounding on Stockpiled Fescue - Buy 450 lb in Oct-Nov, Sell 585 lb in Jan-Feb, 1.5 lb Avg. Daily Gain	8
5	Backgrounding Steer Calves on Fescue Pasture - Buy 450 lb in Oct-Nov, Sell 690 lb in Jun-Jul, 1.0 lb Avg. Daily Gain	10
6	Backgrounding Steer Calves on Fescue Pasture - Buy 450 lb in Oct-Nov, Sell 750 lb in Aug-Sep, 1.0 lb Avg. Daily Gain	12
7	Backgrounding Steer Calves on Small Grain Pasture - Buy 350 lb in Oct-Nov, Sell 675 lb in Jun-Jul, 1.35 lb Avg. Daily Gain	14
8	Backgrounding Steer Calves on Corn Silage and Shelled Corn - Buy 500 lb in Oct-Nov, Sell 740 lb in Feb-Mar, 1.6 lb Avg. Daily Gain	16
9	Backgrounding Steer Calves on Fescue Pasture With Ground Corn - Buy 450 lb in Oct-Nov, Sell 720 lb in Mar-Apr, 1.8 lb Avg. Daily Gain	18
10	Backgrounding Holstein Steer Calves on Fescue Pasture - Buy 500 lb in Oct-Nov, Sell 860 lb in Aug-Sep, 1.2 lb Avg. Daily Gain	20
11	Backgrounding Steer Calves on Fescue Pasture - Purchased in Spring - Buy 450 lb in Mar-Apr, Sell 630 lb in Aug-Sep, 1.2 lb Avg. Daily Gain	22
12	Yearling Steers Finished on Whole Shelled Corn and Protein Supplement - Buy 750 lb in Oct-Nov, Sell 1,082 lb in Jan-Mar, 2.9 lb Avg. Daily Gain	24
13	Yearling Heifers Finished on Whole Shelled Corn and Protein Supplement - Buy 700 lb in Oct-Nov, Sell 996 lb in Jan-Mar, 2.6 lb Avg. Daily Gain	26
14	Custom Finishing Cattle in a Commercial Feedlot- Buy in Oct-Nov, Sell in Jan-Feb	28
15	Beef Cow and Calf, Fed Hay Over Winter - Winter Calving, 30-cow Herd, 35 Animal Units	30
16	Cool Season Grass/Clover, Continuous Grazing	32
17	Winter Annuals, Intensive Grazing, No-Till Establishment	33
18	Corn Silage, No-Till Establishment	34

TENNESSEE BEEF SYSTEMS UPDATE

Prices for feeder cattle declined sharply last fall as corn prices rose over \$1 per bushel in about 30 days. Feeder prices are still historically strong and cow calf operations are generally still profitable this fall. Very dry pastures in parts of the state caused many producers to move cattle early rather than feed hay and other feed to calves. While many cow calf operations will choose to market calves at weaning, opportunities still exist for those with good management skills to buy calves which will respond to good management. Those interested in buying calves to stocker, should focus on calves which will upgrade, that is, calves which will improve in values with good feed and management. These may include bull calves or calves which need de-worming and a vaccination program. Buying these calves as singles and then marketing as a load can also improve their value. If buying calves, remember that “bought right is half sold,” and if one is not skilled at buying calves at weekly auctions, using a good order buyer to buy the calves can be a wise investment.

This publication estimates the costs, returns, and breakeven prices of backgrounding calves and finishing cattle in Tennessee or at a custom lot out of state for the **2006-2007 time period**. Each producer needs to modify the budgets to make the feeder prices and feed prices current for the situation they are considering. A systems approach is used for each alternative, integrating both production and marketing considerations in the budgets constructed. This approach recognizes that marketing decisions about when to buy, what weight animals to buy, and when to sell must be evaluated in conjunction with production decisions about what to feed, how to manage health, and how to stock pastures. Producers should also examine the historical buy-sell margins in the budgets to evaluate the price risk of each alternative.

BEEF CATTLE OUTLOOK

The beef cattle situation in ‘07 is vastly different from a year ago. Most notably is the fact that the price of corn has doubled since last year. The only adjustment feedlots can make to be able to feed cattle is to buy the feeder cattle cheaper. That began in the fall of ‘06 and we have seen about an 18 to 20 percent decline in feeder cattle prices, depending on the weight. As a result of the higher cost of feedlot gain, cattle feeders are preferring heavier cattle rather than calves and they will probably not feed them as long. The price spread between calves and yearlings has narrowed overall, though “grass fever” makes it somewhat wider. These factors tend to favor stocker/backgrounding programs. It should reduce some of the price risk for the stocker operator. Furthermore, it should reduce feedlot demand or competition for calves and increase feedlot demand for yearlings.

The other really significant information impacting the more distant outlook for cattle is the fact that the cattle herd expansion which began in 2004 came to a halt. The total herd increased only .3 percent, while the beef cow and replacement heifer herd declined less than one percent. With the record feeder cattle prices seen in recent years, herd expansion was well underway. However, the devastating drought in many western states and parts of the south, caused a sharp increase in cow slaughter, halting growth in the cow herd. In the July-September quarter of ‘06, cow slaughter was up 30 percent over ‘05. For the year ‘06, beef cow slaughter was up 18 percent. Texas, Oklahoma and Missouri which

have 29 percent of the beef cows in the U. S. had a 3.9 percent decline in beef cows and a 7.1 percent decline in beef replacement heifers. From the January cattle on feed numbers, it appears that many heifers earlier designated as replacement heifers went to the feedlot when forage supplies got really short. Many of the drought areas have received moisture and will be restocking with cows, bred heifers, bulls, etc. This could support the cow and heifer replacement market for the next one to three years. In addition as those females are kept on farms and ranches, it will further tighten the beef supply. Expansion in the herd is expected to continue over the next two to three years. We will definitely need to expand our export markets as the cattle herd grows. Japan is still taking about one half of what they took in 2003 and the Korean market is effectively still closed.

Fed cattle prices are projected to average in the mid \$80s to low \$90s and may well break previous records on an annual basis. Feeder cattle prices will continue be subject to corn prices, which are expected to continue strong over at least the next year or two. The higher corn prices are demand driven as ethanol takes more of the crop. The cow calf business should remain profitable for the next two to three years, though not as profitable as the past 5 when corn was much cheaper. The stocker backgrounding business will provide opportunities for those who buy right, manage health and cost of gain and market in truckloads.

ENTERPRISE BUDGETS

The budgets are estimated using September 2006 input prices, interest rates, and wage rates. Cattle prices are projected based on outlook information available as of November, 2006. Pasture and silage prices are based on forage enterprise budgets included on pages 32 through 34. Also, a cow-calf production budget is shown on page 30, allowing calf producers to estimate their returns associated with producing calves, and providing a point of comparison for backgrounding and finishing alternatives. The backgrounding and finishing budgets are set up so that calves may be moved from a cow-calf operation directly to backgrounding, or directly from backgrounding into a finishing operation. The second page of the budget discusses the assumptions and procedures used in constructing each cost analysis.

The livestock production budgets contained in this publication are break-even budgets, with the exception of the cow-calf budget. Break-even budgets take into consideration those inputs and prices which are known (or easily estimated) to estimate a total production cost at the end of the backgrounding or finishing program. These break-even prices can then be compared to the best estimate of the outlook price for the weight of cattle being produced.

Interest rates are assumed to be 8%. Labor is charged at a cash wage of \$8.50/hour, which includes wages, Social Security and Medicaid taxes, and payroll administration. Expected calf purchase prices are summarized in Table 1. Chances are very good that purchase prices for calves or yearlings will be different from those used in the budgets. Use the sensitivity analysis shown at the bottom of the second page of each budget to estimate new break-even selling prices based on your calf purchase prices. The “your cost” columns in the budgets should be used to calculate your own production costs and break-even prices.

The backgrounding budgets include estimated weight gains and production costs for steer calves. To budget the costs of backgrounding heifer calves, adjust the purchase weight and price for the heifers

being considered. Also, expect heifers to gain about 0.2 to 0.4 lb. per day less than steers. Finally, include any extra costs required just for heifers (like feeding MGA).

Corn prices are based on November 2006 market conditions and new crop outlook information. The price of whole shelled corn used is \$3.50/bushel, while ground corn is priced \$0.70/bushel higher to account for grinding cost. Some producers raise their own corn and may value this grain at their cost of production. Other producers purchase corn, paying the market price of corn including storage, processing, and transportation costs. The corn prices used in the budgets were selected to fall somewhere between raised and purchased grain prices. There are abundant sources of by-product feeds available in and near Tennessee such as corn gluten, soyhulls, and distiller's grain. Depending on the local situation, producers may consider these as alternatives for complete or partial substitutes for corn, and should be fed at rates to provide nutrient levels comparable to corn. For convenience, though higher prices, a complete mixed feed may be a better alternative especially for smaller producers. Consult with your County Extension Agent to determine the rates to feed specific by-products available in your area.

The buy-sell margin is very important to the profitability of backgrounding and finishing operations. At the bottom of the first page of each budget the break-even buy-sell margins necessary to recover cash costs and all costs are provided. In addition, historical buy-sell margins are given including the 10-year average margin, the minimum margin (worst), and the maximum margin (best) over the last ten years. Buy-sell margins for other time periods and systems are available in a computer program which will calculate buy-sell margins for specified beginning and ending dates, cattle weight ranges, and quality grades. This is available through your Extension Area Farm Management Specialist or County Extension Agent.

Pasture and silage costs used in the livestock budgets are based on the forage budgets shown on pages 32 through 34. Small grain pasture and grass/clover pasture costs are based on total variable cost per acre calculated in the budgets. Fixed expenses and labor costs are omitted to prevent potential double-counting costs of labor and machinery. Corn silage is priced based on total cost per ton after adjusting for storage losses of 10%, assuming silage is stored in a trench silo. The pasture and silage budgets included here should be used to calculate your own costs of producing forage. Additional forage crop budgets are available through your Extension Area Farm Management Specialist or County Extension Agent. Producers that rent pasture land should use their pasture rental rates, plus the costs of fertilizer, herbicides, and other pasture maintenance costs, as their pasture costs.

Some machinery and equipment is used in each backgrounding enterprise. This may include tractors, working facilities, feeders, and hay handling equipment. A cash cost for machinery and equipment maintenance, repairs and fuel is included based on a "typical" machinery and equipment complement. Fixed costs of depreciation, interest, and insurance for machinery and equipment are also included to represent ownership costs. These costs vary widely from farm to farm, and should be adjusted to reflect your own machinery and equipment costs.

Based on UT research, there is little need for deworming mature cows if they are in good body condition (BCS 6 or higher). Thin cows may benefit from deworming. Administer all vaccinations according to label directions due to requirement some brands have for a booster.

Table 1
2007 Price Outlook (\$/cwt)

Purchase Prices	Weight				Your Estimate
Fall '06					
Steers, M-1 and M-2	350 lbs.	129.48			_____
	450 lbs.	114.83			_____
	500 lbs.	109.00			_____
	750 lbs.	94.41			_____
Heifers, M-1 and M-2	700 lbs.	89.00			_____
Spring '07					
Steers, M-1 and M-2	450 lbs.	118.00			_____
<hr/>					
Sale Prices	Weight	Expected	Optimistic	Pessimistic	Your Estimate
Finished Steers & Heifers					
January - March '07	1,000 - 1,200 lbs.	91.24			_____
April - June '07	1,000 - 1,200 lbs.	95	96	92	_____
July - August '07	1,000 - 1,200 lbs.	90	92	88	_____
October - December '07	1,000 - 1,200 lbs.	94	96	90	_____
Yearling Steers					
January - March '07	500 - 600 lbs.	104.92			_____
	600 - 700 lbs.	94.96			_____
	700 - 800 lbs.	92.20			_____
April - June '07	600 - 700 lbs.	102	104	100	_____
	700 - 800 lbs.	95	98	92	_____
July - September '07	600 - 700 lbs.	95	98	92	_____
	700 - 800 lbs.	90	93	87	_____
Holstein Steers	800 - 900 lbs.	74	77	71	_____
Weaned Calves					
August - October '07	400 - 500 lbs.	110	115	105	_____
	500 - 600 lbs.	100	105	95	_____

These projections of prices for backgrounded steers are based on projections of fed cattle prices and a cost of feedlot gain of \$60/cwt. Prices cattle feeders will pay for 600-800 lb. steers are based upon their expectations of fed cattle prices at time of sale, less projected cost of gain and any adjustment for transportation to the feedlot. Even though fed cattle prices may be expected to be lower in spring and summer of 2007 than the fall of 2006, live (fed) cattle futures will be trading at a discount to cash (the live cattle buyer's price expectations). This has been taken into account in the projection for yearling cattle prices. The table on the following page may be used to make your own sale price projections for backgrounded cattle.

These projections for feeder cattle are based on Tennessee auction prices. Prices for 48,000# truckloads typically sell \$4 per hundred higher.

Table 2
Maximum Prices Which Western Feedlots May Pay
For Feeder Cattle in Tennessee to Break-even (\$/cwt)

Total Cost of Gain* (\$/cwt)	Maximum 450 lb Feeder Steer Purchase Prices** If 1,100 lb Fed Cattle Prices are Expected to Be:						Maximum 700 lb Feeder Steer Purchase Prices*** If 1,100 lb Fed Cattle Prices are Expected to Be:					
	\$ 70	\$ 75	\$ 80	\$ 85	\$ 90	\$ 95	\$ 70	\$ 75	\$ 80	\$ 85	\$ 90	\$ 95
37	112	124	136	148	161	173	83	91	99	106	114	122
39	109	121	133	145	158	170	82	90	97	105	113	121
41	106	118	130	143	155	167	81	88	96	104	112	120
43	103	115	127	140	152	164	79	87	95	103	111	119
45	100	112	125	137	149	161	78	86	94	102	110	118
47	97	109	122	134	146	158	77	85	93	101	109	116
49	94	107	119	131	143	155	76	84	92	100	107	115
51	91	104	116	128	140	153	75	83	91	98	106	114
53	89	101	113	125	137	150	74	82	89	97	105	113
55	86	98	110	122	135	147	73	80	88	96	104	112
57	83	95	107	119	132	144	71	79	87	95	103	111
59	80	92	104	117	129	141	70	78	86	94	102	110
61	77	89	101	114	126	138	69	77	85	93	101	108
63	74	86	99	111	123	135	68	76	84	92	99	107
65	71	83	96	108	120	132	67	75	83	90	98	106
67	68	81	93	105	117	129	66	74	81	89	97	105
69	65	78	90	102	114	127	65	72	80	88	96	104

Includes a 1,000 mile haul at \$3.00/loaded mile or \$6/cwt.

*For each \$1 change in cost of gain feeder calf price change is \$1.44/cwt. and feeder yearling prices change by \$0.57/cwt. in the opposite direction.

**For each \$1/cwt. change in fed cattle price expectations feeder calf price change is \$2.44/cwt. (1,100/450 = 2.44)

***For each \$1/cwt. change in fed cattle price expectations feeder yearling price change is \$1.57/cwt. (1,100/700 = 1.57)

How To Use This Table:

This table can be used to project feeder cattle prices in the future. Some projection of the fed cattle price is needed for the time period when you wish to project feeder cattle prices. Some estimate of where the fed cattle futures will trend from that future date, and some estimate of the feedlot cost of gain in the future. Assume it is spring and you are projecting August prices for 700 lb. steers. If fed cattle prices are expected to be \$80/cwt. and cost of gain is expected to be 51 cents, the most a feedlot can pay for the feeder animal is \$91/cwt. Alternatively, if February fed cattle futures are expected to be higher than the previous August say \$85/cwt., this would allow the feedlot to pay \$98/cwt. The above footnotes explain how to adjust for other factors. The table is more accurate for 700 lb. cattle than 450 lb. calves, due to the perceived low cost of gain on grass for 450 lb. calves.

Table 3
Comparison of Returns Per Head for Backgrounding and Feeding Systems, 2006-2007

Description:	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9	Table 10	Table 11	Table 12	Table 13	Table 14	Table 14
	Background Steers, Pasture & Hay, Oct-Jan	Background Steers, Pasture & Hay, Oct-Jun	Background Steers, Pasture & Hay, Oct-Aug	Background Steers, Sin Grain Pasture, Oct-Jun	Background Steers, Corn Silage & Corn, Oct-Feb	Background Steers, Oct-Mar	Background Holstein Steers, Pasture, Oct-Aug	Background Steers, Pasture, Mar-Aug	Finish Steers, Shelled Corn, Oct-Jan	Finish Heifers, Shelled Corn, Oct-Jan	Custom Finish Steers, Oct-Jan	Custom Finish Heifers, Oct-Jan
Feeding Time:	90	240	300	240	150	150	300	150	130	130	155	148
Break-even Price	\$ 101.87	\$ 98.17	\$ 93.04	\$ 91.57	\$ 94.53	\$ 94.75	\$ 80.31	\$ 97.74	\$ 84.89	\$ 84.90		
Cash Expenses												
Break-even Price	\$ 119.67	\$ 115.00	\$ 109.07	\$ 109.15	\$ 113.68	\$ 111.75	\$ 93.90	\$ 112.55	\$ 97.29	\$ 97.69	\$ 91.91	\$ 90.62
All Costs												
Purchase Price	\$ 115	\$ 115	\$ 115	\$ 129	\$ 109	\$ 115	\$ 91	\$ 118	\$ 94	\$ 89	\$ 94	\$ 89
Purchase Weight	450	450	450	350	500	450	500	450	750	700	750	675
Market Weight (lbs.)	585	690	750	675	740	720	860	630	1,082	996	1,200	1,032
Outlook (Sale Price)												
Expected	\$ 105	\$ 95	\$ 90	\$ 95	\$ 92	\$ 92	\$ 72	\$ 95	\$ 91	\$ 91	\$ 91	\$ 91
Pessimistic*	\$ 0	\$ 92	\$ 87	\$ 92	\$ 0	\$ 0	\$ 69	\$ 92	\$ 0	\$ 0	\$ 0	\$ 0
Optimistic*	\$ 0	\$ 98	\$ 93	\$ 98	\$ 0	\$ 0	\$ 75	\$ 98	\$ 0	\$ 0	\$ 0	\$ 0
Expected Returns**												
Over (Under) Cash Exp.	\$ 18	-\$ 22	-\$ 23	\$ 23	-\$ 17	-\$ 18	-\$ 72	-\$ 18	\$ 69	\$ 63		
Over (Under) All Costs	-\$ 86	-\$ 138	-\$ 143	-\$ 96	-\$ 159	-\$ 137	-\$ 188	-\$ 117	-\$ 66	-\$ 64	-\$ 8	\$ 6
Pessimistic Returns												
Over (Under) Cash Exp.	-\$ 43	-\$ 43	-\$ 45	\$ 3			-\$ 97	-\$ 38				
Over (Under) All Costs	-\$ 159	-\$ 159	-\$ 166	-\$ 116			-\$ 214	-\$ 137				
Optimistic Returns												
Over (Under) Cash Exp.	-\$ 1	\$ 0	\$ 0	\$ 43			-\$ 46	\$ 2				
Over (Under) All Costs	-\$ 117	-\$ 121	-\$ 121	-\$ 75			-\$ 163	-\$ 97				

*There are zero (0) entries for optimistic and pessimistic prices for those systems in which cattle were marketed in early 2007. Actual prices were used for the sale price in these systems and no optimistic or pessimistic outlook was entered.

**Return per head is computed by subtracting the break-even price from the expected, pessimistic & optimistic price and multiplying by the market weight in hundred weights. e.g. (Fescue Pasture 300 days) \$90.00 - \$93.04 = -\$3.04 x 7.5 cwt. = -\$22.80 expected cash return per head. Returns are rounded to the nearest dollar.

Table 4
Estimated Costs and Break-even Prices
Short-term Backgrounding on Stockpiled Fescue
Buy 450 lb in Oct-Nov, Sell 585 lb in Jan-Feb, 1.5 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	4.50	cwt	114.83	516.74	
Pasture	0.50	acre	47.33	23.67	
Hay	0.15	ton	55.00	8.25	
Ground Corn	4.00	bu	4.20	16.80	
Med, Implant, & Salt				11.91	
Maint, Repr & Fuel				2.00	
Int. on Feeder	\$ 516.74	90 days	8.00%	10.19	
Int. on Other Costs	\$ 62.62	90 days	8.00%	1.24	
Death Loss	\$ 516.74		1.00%	5.17	
Total Cash Costs				\$ 595.95	
Procurement Costs (1)				53.09	
Marketing Costs (2)				20.00	
Labor	3.00	hr	8.50	25.50	
Fixed Costs (depr.,int.,insur.,& taxes)				5.50	
Land Cost	0.50	acre	0.00	0.00	
Total All Costs				\$ 700.04	

(1) Procurement Costs:

Order buying	4.50	cwt	0.50	2.25	
Death Loss	\$ 516.74		3.00%	15.50	
Transportation (50 miles)				5.00	
Shrink	\$ 516.74		2.00%	10.33	
Additional Medication				20.00	
				\$ 53.09	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (585 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain		Your Price
Cash Costs	595.95	101.87	58.68	\$/cwt.	
Procurement Costs	53.09	9.07			
Marketing Costs	20.00	3.42			
Labor Costs	25.50	4.36			
Fixed Costs	5.50	0.94			
Land Charge	0.00	0.00			
Total All Costs	\$ 700.04	\$ 119.67	135.78	\$/cwt.	
Buy/Sell Margins					
		Estimated	Historical (last 10 years, \$/cwt)		
		(\$/cwt)	Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs		-\$ 12.96			
Break-even Buy/Sell Margin Total Costs		\$ 4.84	\$ 1.82	-\$ 5.01	\$ 12.23

Budget Summary, Short-term Backgrounding on Stockpiled Fescue

This analysis estimates the costs of backgrounding 400 to 500 pound steer calves on stockpiled tall fescue pasture, beginning about November 1. The objective of this backgrounding alternative is to achieve low-cost gains on lightweight cattle, and sell them when prices are typically higher. It is an alternative that cow/calf producers with spring calves weaned in October may want to consider as a method of adding value to their calves without significant expenditures of capital. Note that using this backgrounding alternative for raised calves will delay income to the next year, changing the farm's cash flow and income taxes.

Calves are expected to gain 1.5 pounds per day on average using this backgrounding alternative. The cost of the tall fescue pasture is based on applying 60 pounds of nitrogen per acre on September 1 for stockpiling, plus 25% of the total annual cost per acre of maintaining grass/clover pasture (assuming that about 25% of the total production from an acre of stockpiled grass/clover pasture occurs during the 5 months required for this backgrounding alternative). Stocking rate is two head per acre, or one-half acre per head. Calves are fed ground corn as a supplemental grain at the rate of 0.5 percent of body weight per day (estimated as 2.25 lbs./head/day for the first 30 days, 2.50 lbs./head/day for the next 30 days, and 2.75 lbs./head/day for the last 30 days). Good quality grass/clover hay is fed for 30 days at the rate of 10 pounds per head per day during poor weather, or when stockpiled tall fescue is no longer available.

Health costs includes costs of vaccinations, internal and external parasite control, one growth implant, and 3.2 ounce of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double the budgeted rate included in this analysis. If an ionophore is fed to increase forage utilization, add about \$2.00 per head to total cost and increase estimated weight gain. Maintenance, repair and fuel expense of \$2.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 47.00	\$ 91.48	\$ 95.33	\$ 99.18	\$ 103.02	\$ 106.87
\$ 53.00	\$ 92.87	\$ 96.72	\$ 100.56	\$ 104.41	\$ 108.25
\$ 59.00	\$ 94.25	\$ 98.10	\$ 101.95	\$ 105.79	\$ 109.64
\$ 65.00	\$ 95.64	\$ 99.48	\$ 103.33	\$ 107.18	\$ 111.02
\$ 71.00	\$ 97.02	\$ 100.87	\$ 104.72	\$ 108.56	\$ 112.41

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 84.00	-\$ 58.22	-\$ 81.38	-\$ 104.55	-\$ 127.72	-\$ 150.89
\$ 95.00	\$ 6.13	-\$ 17.03	-\$ 40.20	-\$ 63.37	-\$ 86.54
\$ 105.00	\$ 64.63	\$ 41.47	\$ 18.30	-\$ 4.87	-\$ 28.04
\$ 116.00	\$ 128.98	\$ 105.82	\$ 82.65	\$ 59.48	\$ 36.31
\$ 126.00	\$ 187.48	\$ 164.32	\$ 141.15	\$ 117.98	\$ 94.81

Table 5
Estimated Costs and Break-even Prices
Backgrounding Steer Calves On Fescue Pasture
Buy 450 lb in Oct-Nov, Sell 690 lb in Jun-Jul, 1.0 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	4.50	cwt	114.83	516.74	
Pasture	0.75	acre	91.80	68.85	
Hay	0.50	ton	55.00	27.50	
Med, Implant, & Salt				22.54	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 516.74	240 days	8.00%	27.18	
Int. on Other Costs	\$ 121.89	240 days	8.00%	6.41	
Death Loss	\$ 516.74		1.00%	5.17	
Total Cash Costs				\$ 677.39	
Procurement Costs (1)				53.09	
Marketing Costs (2)				20.00	
Labor	4.00	hr	8.50	34.00	
Fixed Costs (depr.,int.,insur.,& taxes)				9.00	
Land Cost	0.75	acre	0.00	0.00	
Total All Costs				\$ 793.47	

(1) Procurement Costs:

Order buying	4.50	cwt	0.50	2.25	
Death Loss	\$ 516.74		3.00%	15.50	
Transportation (50 miles)				5.00	
Shrink	\$ 516.74		2.00%	10.33	
Additional Medication				20.00	
				\$ 53.09	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (690 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain		Your Price
Cash Costs	677.39	98.17	66.94	\$/cwt.	
Procurement Costs	53.09	7.69			
Marketing Costs	20.00	2.90			
Labor Costs	34.00	4.93			
Fixed Costs	9.00	1.30			
Land Charge	0.00	0.00			
Total All Costs	\$ 793.47	\$ 115.00	115.31	\$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 16.66			
Break-even Buy/Sell Margin Total Costs	\$ 0.17	\$ 0.33	-\$ 11.09	\$ 21.86

Budget Summary, Steers Backgrounded November to July

This analysis estimates the costs of backgrounding 400 to 500 pound steers on stockpiled tall fescue, grass and clover hay, and tall fescue pasture, beginning about November 1. This system is designed to achieve minimal weight gain during the winter feeding period, followed by more rapid weight gains during spring and early summer. Steers are sold when tall fescue growth goes dormant, usually in July. Cow/calf producers with surplus hay and spring pasture may want to consider this backgrounding alternative for raised calves.

Steers are wintered on stockpiled tall fescue from November 1 to April 1 (150 days). The cost of the pasture is based on applying 60 pounds of nitrogen per acre on September 1 for stockpiling, plus 85% of the total annual cost per acre of maintaining grass/clover pasture (assuming that about 85% of the total annual production from an acre of grass/clover pasture occurs during the 10 months required for this backgrounding alternative). Stocking rate is 1.33 head per acre, or 0.75 acres per head. Calves receive 10 pounds of grass/clover hay for 100 days during the winter according to pasture and weather conditions. Average daily gain during the winter is 0.75 pounds. Cattle are placed on spring pasture from April 1 to July 1 at the same stocking rate, and gain an average of 1.6 pounds per day.

Health costs include costs of vaccinations, internal and external parasites, two growth implants and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$3.00 per head to total cost and increase estimated weight gain. Maintenance, repair and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 54.00	\$ 87.15	\$ 90.41	\$ 93.67	\$ 96.93	\$ 100.19
\$ 60.00	\$ 89.24	\$ 92.50	\$ 95.76	\$ 99.02	\$ 102.28
\$ 67.00	\$ 91.67	\$ 94.93	\$ 98.19	\$ 101.45	\$ 104.72
\$ 74.00	\$ 94.11	\$ 97.37	\$ 100.63	\$ 103.89	\$ 107.15
\$ 80.00	\$ 96.19	\$ 99.45	\$ 102.72	\$ 105.98	\$ 109.24

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 76.00	-\$ 105.17	-\$ 129.08	-\$ 152.99	-\$ 176.89	-\$ 200.80
\$ 86.00	-\$ 36.17	-\$ 60.08	-\$ 83.99	-\$ 107.89	-\$ 131.80
\$ 95.00	\$ 25.93	\$ 2.02	-\$ 21.89	-\$ 45.79	-\$ 69.70
\$ 105.00	\$ 94.93	\$ 71.02	\$ 47.11	\$ 23.21	-\$ 0.70
\$ 114.00	\$ 157.03	\$ 133.12	\$ 109.21	\$ 85.31	\$ 61.40

Table 6
Estimated Costs and Break-even Prices
Backgrounding Steer Calves On Fescue Pasture
Buy 450 lb in Oct-Nov, Sell 750 lb in Aug-Sep, 1.0 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	4.50	cwt	114.83	516.74	
Pasture	0.75	acre	102.92	77.19	
Hay	0.50	ton	55.00	27.50	
Med, Implant, & Salt				25.49	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 516.74	300 days	8.00%	33.98	
Int. on Other Costs	\$ 133.18	300 days	8.00%	8.76	
Death Loss	\$ 516.74		1.00%	5.17	
Total Cash Costs				\$ 697.82	
Procurement Costs (1)				53.09	
Marketing Costs (2)				20.00	
Labor	4.25	hr	8.50	36.13	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Land Cost	0.75	acre	0.00	0.00	
Total All Costs				\$ 818.03	

(1) Procurement Costs:

Order buying	4.50	cwt	0.50	2.25	
Death Loss	\$ 516.74		3.00%	15.50	
Transportation (50 miles)				5.00	
Shrink	\$ 516.74		2.00%	10.33	
Additional Medication				20.00	
				\$ 53.09	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (750 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain	Your Price
Cash Costs	697.82	93.04	60.36 \$/cwt.	
Procurement Costs	53.09	7.08		
Marketing Costs	20.00	2.67		
Labor Costs	36.13	4.82		
Fixed Costs	11.00	1.47		
Land Charge	0.00	0.00		
Total All Costs	\$ 818.03	\$ 109.07	100.43 \$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 21.79			
Break-even Buy/Sell Margin Total Costs	-\$ 5.76	-\$ 3.12	-\$ 17.14	\$ 18.83

Budget Summary, Steers Backgrounded November to September

This analysis estimates the costs of a long term backgrounding program for steer calves, beginning about November 1 and ending about September 1. This alternative is designed to use grass/clover pasture year-round, producing cheap gains at low costs. Cow/calf producers should plan to commit at least 1 acre of pasture and hay land for every steer backgrounded following this system. Cattle should be ready to place on feed immediately following this backgrounding program.

Steers are wintered on stockpiled tall fescue from November 1 to April 1 (150 days). The cost of the pasture is based on applying 60 pounds of nitrogen per acre on September 1 for stockpiling, plus the total annual cost per acre of maintaining grass/clover pasture. Stocking rate is 1.33 head per acre, or 0.75 acres per head. Calves receive 10 pounds of grass/clover hay for 100 days during the winter according to pasture and weather condition. Average daily gain during the winter is 0.75 pounds. Cattle are placed on spring pasture from April 1 to September 1 at the same stocking rate, and gain an average of 1.4 lbs. per day.

Health costs include costs of vaccinations, internal and external parasites, two growth implants and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$4.00 per head to total cost and increase estimated weight gain. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 48.00	\$ 82.10	\$ 85.10	\$ 88.10	\$ 91.10	\$ 94.10
\$ 54.00	\$ 84.50	\$ 87.50	\$ 90.50	\$ 93.50	\$ 96.50
\$ 60.00	\$ 86.90	\$ 89.90	\$ 92.90	\$ 95.90	\$ 98.90
\$ 66.00	\$ 89.30	\$ 92.30	\$ 95.30	\$ 98.30	\$ 101.30
\$ 72.00	\$ 91.70	\$ 94.70	\$ 97.70	\$ 100.70	\$ 103.70

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 72.00	-\$ 109.41	-\$ 133.61	-\$ 157.82	-\$ 182.02	-\$ 206.23
\$ 81.00	-\$ 41.91	-\$ 66.11	-\$ 90.32	-\$ 114.52	-\$ 138.73
\$ 90.00	\$ 25.59	\$ 1.39	-\$ 22.82	-\$ 47.02	-\$ 71.23
\$ 99.00	\$ 93.09	\$ 68.89	\$ 44.68	\$ 20.48	-\$ 3.73
\$ 108.00	\$ 160.59	\$ 136.39	\$ 112.18	\$ 87.98	\$ 63.77

Table 7
Estimated Costs and Break-even Prices
Backgrounding Steer Calves On Small Grain Pasture
Buy 350 lb in Oct-Nov, Sell 675 lb in Jun-Jul, 1.35 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	3.50	cwt	129.48	453.18	
Pasture	0.50	acre	180.19	90.10	
Hay	0.10	ton	55.00	5.50	
Ground Corn	2.00	bu	4.20	8.40	
Soybean Meal 48%	20.00	lbs	0.11	2.20	
Med, Implant, & Salt				21.54	
Maint, Repr & Fuel				2.00	
Int. on Feeder	\$ 453.18	240 days	8.00%	23.84	
Int. on Other Costs	\$ 129.73	240 days	8.00%	6.82	
Death Loss	\$ 453.18		1.00%	4.53	
Total Cash Costs				\$ 618.11	
Procurement Costs (1)				49.41	
Marketing Costs (2)				20.00	
Labor	4.50	hr	8.50	38.25	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Land Cost	0.50	acre	0.00	0.00	
Total All Costs				\$ 736.77	

(1) Procurement Costs:

Order buying	3.50	cwt	0.50	1.75	
Death Loss	\$ 453.18		3.00%	13.60	
Transportation (50 miles)				5.00	
Shrink	\$ 453.18		2.00%	9.06	
Additional Medication				20.00	
				\$ 49.41	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (675 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain		Your Price
Cash Costs	618.11	91.57	50.75	\$/cwt.	
Procurement Costs	49.41	7.32			
Marketing Costs	20.00	2.96			
Labor Costs	38.25	5.67			
Fixed Costs	11.00	1.63			
Land Charge	0.00	0.00			
Total All Costs	\$ 736.77	\$ 109.15	87.26	\$/cwt.	
Buy/Sell Margins					
		Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
			Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs		-\$ 37.91			
Break-even Buy/Sell Margin Total Costs		-\$ 20.33	-\$ 8.10	-\$ 25.89	\$ 19.34

Budget Summary, Backgrounding on Small Grain Pasture

The cost of grazing lightweight steer calves on small grain pasture is estimated in this analysis. Calves are started weighing 300 to 400 pounds on November 1, and graze winter pasture (wheat, rye, rye grass, crimson clover, or a combination) until the pasture quits growing (usually around July 1). This alternative puts rapid gains on lightweight calves using high quality pasture. It requires more intensive management than backgrounding on permanent pasture, but also offers the potential to increase carrying capacity and total pounds of beef production for a given land base. It also requires higher quality health management of the younger lightweight calves.

Small grain pasture must be planted in early fall and receive adequate moisture in order to begin grazing on November 1. Stocking rate is 2 steers per acre, or one-half acre per head. For 30 days in the winter, 8 pounds of grass/clover hay and 4 pounds of corn is fed daily when grazing conditions are unfavorable. Pasture expense is based on the cost of establishing one acre of small grain grazing. Average daily gain is estimated to be 1.35 pounds per head. Actual gains will depend largely on weather conditions and stocking rate.

Health costs include costs of vaccinations, internal and external parasites, two growth implants and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$2.00 per head to total cost and increase estimated weight gain. Maintenance, repair, and fuel expense of \$2.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 119.48	\$ 124.48	\$ 129.48	\$ 134.48	\$ 139.48
\$ 41.00	\$ 81.69	\$ 84.29	\$ 86.88	\$ 89.47	\$ 92.06
\$ 46.00	\$ 84.10	\$ 86.69	\$ 89.29	\$ 91.88	\$ 94.47
\$ 51.00	\$ 86.51	\$ 89.10	\$ 91.69	\$ 94.29	\$ 96.88
\$ 56.00	\$ 88.92	\$ 91.51	\$ 94.10	\$ 96.69	\$ 99.29
\$ 61.00	\$ 91.32	\$ 93.92	\$ 96.51	\$ 99.10	\$ 101.69

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 119.48	\$ 124.48	\$ 129.48	\$ 134.48	\$ 139.48
\$ 76.00	-\$ 67.92	-\$ 86.51	-\$ 105.11	-\$ 123.70	-\$ 142.30
\$ 86.00	-\$ 0.42	-\$ 19.01	-\$ 37.61	-\$ 56.20	-\$ 74.80
\$ 95.00	\$ 60.33	\$ 41.74	\$ 23.14	\$ 4.55	-\$ 14.05
\$ 105.00	\$ 127.83	\$ 109.24	\$ 90.64	\$ 72.05	\$ 53.45
\$ 114.00	\$ 188.58	\$ 169.99	\$ 151.39	\$ 132.80	\$ 114.20

Table 8
Estimated Costs and Break-even Prices
Backgrounding Steer Calves On Corn Silage and Shelled Corn
Buy 500 lb in Oct-Nov, Sell 740 lb in Feb-Mar, 1.6 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	5.00	cwt	109.00	545.00	
Cracked Shell Corn	9.38	bu	4.20	39.40	
Corn Silage	2.06	ton	22.78	46.92	
Soybean Meal 48%	171.00	lbs	0.11	18.81	
Med, Implant, & Salt				15.11	
Maint, Repr & Fuel				6.75	
Int. on Feeder	\$ 545.00	150 days	8.00%	17.92	
Int. on Other Costs	\$ 126.99	150 days	8.00%	4.17	
Death Loss	\$ 545.00		1.00%	5.45	
Total Cash Costs				\$ 699.53	
Procurement Costs (1)				54.75	
Marketing Costs (2)				20.00	
Labor	6.10	hr	8.50	51.85	
Fixed Costs (depr.,int.,insur.,& taxes)				15.10	
Land Cost	0.75	acre	0.00	0.00	
Total All Costs				\$ 841.23	

(1) Procurement Costs:

Order buying	5.00	cwt	0.50	2.50	
Death Loss	\$ 545.00		3.00%	16.35	
Transportation (50 miles)				5.00	
Shrink	\$ 545.00		2.00%	10.90	
Additional Medication				20.00	
				\$ 54.75	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (740 lb Sold)

<i>Cost Included</i>	<i>Total Amount</i>	<i>Price Per Cwt.</i>	<i>Cost of Gain</i>	<i>Your Price</i>
Cash Costs	699.53	94.53	64.39 \$/cwt.	
Procurement Costs	54.75	7.40		
Marketing Costs	20.00	2.70		
Labor Costs	51.85	7.01		
Fixed Costs	15.10	2.04		
Land Charge	0.00	0.00		
Total All Costs	\$ 841.23	\$ 113.68	123.43 \$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 14.47			
Break-even Buy/Sell Margin Total Costs	\$ 4.68	-\$ 1.61	-\$ 9.10	\$ 11.71

Budget Summary, Backgrounding With Corn Silage and Shelled Corn

The cost of backgrounding 500 pound steer calves using corn silage and corn is estimated in this analysis. This alternative uses heavier calves and high quality feed to produce steers ready to place on feed in a short time period. This system works well for intensively managed backgrounding operations that seek to increase income through increased throughput (number of animals backgrounded annually). This alternative requires machinery, equipment, and facilities to produce, store, and feed silage. It also is used by some cow/calf producers who use existing equipment to produce and feed silage without requiring additional pasture to background a calf crop.

Steers are fed beginning November 1. The ration includes 27.5 pounds of corn silage, 3.5 pounds of cracked shelled corn, and 1.1 pounds of 48% soybean meal fed to each animal daily. The steers are sold by April 1 to take advantage of the seasonal price increase which typically occurs in the spring. Steer performance is estimated to be 1.6 pounds of gain per day on average through the entire feeding period. Corn and soybean meal prices are based on bulk purchases from local suppliers, including delivery charges. Silage cost assumes a break-even price of \$22.84/ton to produce 14.5 tons of silage, after allowing for storage loss of 10%. Overhead costs of silage storage and feeding are included as fixed costs.

Health costs include costs of vaccinations, internal and external parasites, one growth implant and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. Fuel expense of \$6.75 per head is included to cover the cost of operating a tractor and feed wagon to feed silage and grain.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 99.00	\$ 104.00	\$ 109.00	\$ 114.00	\$ 119.00
\$ 51.00	\$ 83.43	\$ 86.81	\$ 90.19	\$ 93.57	\$ 96.95
\$ 58.00	\$ 85.70	\$ 89.08	\$ 92.46	\$ 95.84	\$ 99.22
\$ 64.00	\$ 87.65	\$ 91.03	\$ 94.41	\$ 97.78	\$ 101.16
\$ 70.00	\$ 89.59	\$ 92.97	\$ 96.35	\$ 99.73	\$ 103.11
\$ 77.00	\$ 91.86	\$ 95.24	\$ 98.62	\$ 102.00	\$ 105.38

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 99.00	\$ 104.00	\$ 109.00	\$ 114.00	\$ 119.00
\$ 74.00	-\$ 99.79	-\$ 125.86	-\$ 151.93	-\$ 178.00	-\$ 204.08
\$ 83.00	-\$ 33.19	-\$ 59.26	-\$ 85.33	-\$ 111.40	-\$ 137.48
\$ 92.00	\$ 33.41	\$ 7.34	-\$ 18.73	-\$ 44.80	-\$ 70.88
\$ 101.00	\$ 100.01	\$ 73.94	\$ 47.87	\$ 21.80	-\$ 4.28
\$ 110.00	\$ 166.61	\$ 140.54	\$ 114.47	\$ 88.40	\$ 62.32

Table 9
 Estimated Costs and Break-even Prices
 Backgrounding Steer Calves on Fescue Pasture With Ground Corn
 Buy 450 lb in Oct-Nov, Sell 720 lb in Mar-Apr, 1.8 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	4.50 cwt		114.83	516.74	
Pasture	0.50 acre		51.04	25.52	
Ground Corn	12.50 bu		4.20	52.50	
Soybean Meal 48%	140.00 lbs		0.11	15.40	
Hay	0.50 ton		55.00	27.50	
Med, Implant, & Salt				14.86	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 516.74	150 days	8.00%	16.99	
Int. on Other Costs	\$ 138.78	150 days	8.00%	4.56	
Death Loss	\$ 516.74		1.00%	5.17	
Total Cash Costs				\$ 682.23	
Procurement Costs (1)				53.09	
Marketing Costs (2)				20.00	
Labor	4.50 hr		8.50	38.25	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Land Cost	0.50 acre		0.00	0.00	
Total All Costs				\$ 804.57	

(1) Procurement Costs:

Order buying	4.50	cwt	0.50	2.25
Death Loss	\$ 516.74		3.00%	15.50
Transportation (50 miles)				5.00
Shrink	\$ 516.74		2.00%	10.33
Additional Medication				20.00
				\$ 53.09

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00
Transportation (50 miles)				5.00
				\$ 20.00

Break-even Prices and Cost of Gain Summary (720 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain	Your Price
Cash Costs	682.23	94.75	61.29 \$/cwt.	
Procurement Costs	53.09	7.37		
Marketing Costs	20.00	2.78		
Labor Costs	38.25	5.31		
Fixed Costs	11.00	1.53		
Land Charge	0.00	0.00		
Total All Costs	\$ 804.57	\$ 111.75	106.60 \$/cwt.	
Buy/Sell Margins				
		Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)	
			Average	Min (worst) Max (best)
Break-even Buy/Sell Margin Cash Costs		-\$ 20.08		
Break-even Buy/Sell Margin Total Costs		-\$ 3.08	-\$ 7.41	-\$ 12.87 \$ 11.17

Budget Summary, Short-Term Backgrounding with Pasture and Grain

This analysis estimates the costs of backgrounding 400 to 500 pound steer calves on stockpiled tall fescue with supplemental grain, beginning November 1. Cattle producers that raise corn can use this system as a means of marketing part of their corn crop. The supplemental grain produces larger average daily gains than other pasture-based systems, increasing the number of head that can be backgrounded from a limited amount of land. Faster rates of gain also enable more calves to be backgrounded annually. For cow/calf producers, this alternative uses relatively small amounts of pasture, and does not require grazing during spring and summer when grazing needs of cows are high.

Steers are wintered on stockpiled tall fescue from November 1 to April 1. The cost of the pasture is based on applying 60 pounds of nitrogen per acre on September 1 for stockpiling, plus 30% of the total annual cost per acre of maintaining grass/clover pasture (assuming that about 30% of the total annual production from an acre of grass/clover pasture occurs during the 7 months required for this backgrounding alternative). Stocking rate is 2 head per acre, or 0.5 acres per head. Calves are fed 10 pounds of hay per day for 100 days according to pasture and weather conditions. They also receive 5 pounds of ground corn and 1 pound of 48% soybean meal daily for the entire backgrounding period.

Health costs include costs of vaccinations, internal and external parasites, one growth implant and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$3.00 per head to total cost and increase estimated weight gain. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 49.00	\$ 83.89	\$ 87.02	\$ 90.14	\$ 93.27	\$ 96.39
\$ 55.00	\$ 86.14	\$ 89.27	\$ 92.39	\$ 95.52	\$ 98.64
\$ 61.00	\$ 88.39	\$ 91.52	\$ 94.64	\$ 97.77	\$ 100.89
\$ 67.00	\$ 90.64	\$ 93.77	\$ 96.89	\$ 100.02	\$ 103.14
\$ 73.00	\$ 92.89	\$ 96.02	\$ 99.14	\$ 102.27	\$ 105.39

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 104.83	\$ 109.83	\$ 114.83	\$ 119.83	\$ 124.83
\$ 74.00	-\$ 102.50	-\$ 125.97	-\$ 149.43	-\$ 172.90	-\$ 196.36
\$ 83.00	-\$ 37.70	-\$ 61.17	-\$ 84.63	-\$ 108.10	-\$ 131.56
\$ 92.00	\$ 27.10	\$ 3.63	-\$ 19.83	-\$ 43.30	-\$ 66.76
\$ 101.00	\$ 91.90	\$ 68.43	\$ 44.97	\$ 21.50	-\$ 1.96
\$ 110.00	\$ 156.70	\$ 133.23	\$ 109.77	\$ 86.30	\$ 62.84

Table 10
 Estimated Costs and Break-even Prices
 Backgrounding Holstein Steer Calves on Fescue Pasture
 Buy 500 lb in Oct-Nov, Sell 860 lb in Aug-Sep, 1.2 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	5.00	cwt	89.00	445.00	
Pasture	1.25	acre	102.92	128.65	
Hay	0.75	ton	55.00	41.25	
Med, Implant, & Salt				25.99	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 445.00	300 days	8.00%	29.26	
Int. on Other Costs	\$ 198.89	300 days	8.00%	13.08	
Death Loss	\$ 445.00		1.00%	4.45	
Total Cash Costs				\$ 690.68	
Procurement Costs (1)				49.75	
Marketing Costs (2)				20.00	
Labor	4.25	hr	8.50	36.13	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Land Cost	1.25	acre	0.00	0.00	
Total All Costs				\$ 807.55	

(1) Procurement Costs:

Order buying	5.00	cwt	0.50	2.50	
Death Loss	\$ 445.00		3.00%	13.35	
Transportation (50 miles)				5.00	
Shrink	\$ 445.00		2.00%	8.90	
Additional Medication				20.00	
				\$ 49.75	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				\$ 20.00	

Break-even Prices and Cost of Gain Summary (860 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain		Your Price
Cash Costs	690.68	80.31	68.24	\$/cwt.	
Procurement Costs	49.75	5.78			
Marketing Costs	20.00	2.33			
Labor Costs	36.13	4.20			
Fixed Costs	11.00	1.28			
Land Charge	0.00	0.00			
Total All Costs	\$ 807.55	\$ 93.90	100.71	\$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 8.69			
Break-even Buy/Sell Margin Total Costs	\$ 4.90	\$ 1.78	-\$ 12.33	\$ 20.44

Budget Summary, Backgrounding Holstein Steers

The cost of backgrounding 500 pound Holstein steer calves from November 1 until September 1 is estimated in this analysis. Calves are purchased during the fall and fed stockpiled tall fescue and good quality grass/clover hay through the winter, and are then placed on permanent pasture until late summer. This system requires less cash outlays than other backgrounding alternatives due to the lower price of Holstein steer calves relative to beef breeds. The goal of this system is to achieve low-cost gains over a long 300 day feeding period.

Stockpiled tall fescue is the primary forage for fall and winter feeding. Hay is fed at the rate of 15 lbs. per head for 100 days in the winter, based on pasture and weather conditions. Tall fescue and clover pasture is then grazed from April 1 to September 1. The cost of the pasture is based on applying 60 pounds of nitrogen per acre on September 1 for stockpiling, plus the total annual cost of maintaining grass/clover pasture for one year. Stocking rate is 0.8 head per acre, or 1.25 acres per head. Average daily gain for the entire 300 days is estimated at 1.2 pounds.

Health costs include costs of vaccinations, internal and external parasites, two growth implants and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$4.00 per head to total cost and increase estimated weight gain. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 79.00	\$ 84.00	\$ 89.00	\$ 94.00	\$ 99.00
\$ 54.00	\$ 68.53	\$ 71.44	\$ 74.35	\$ 77.26	\$ 80.16
\$ 61.00	\$ 71.47	\$ 74.37	\$ 77.28	\$ 80.19	\$ 83.09
\$ 68.00	\$ 74.40	\$ 77.30	\$ 80.21	\$ 83.12	\$ 86.02
\$ 75.00	\$ 77.33	\$ 80.23	\$ 83.14	\$ 86.05	\$ 88.95
\$ 82.00	\$ 80.26	\$ 83.16	\$ 86.07	\$ 88.98	\$ 91.88

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 79.00	\$ 84.00	\$ 89.00	\$ 94.00	\$ 99.00
\$ 58.00	-\$ 138.09	-\$ 164.98	-\$ 191.88	-\$ 218.77	-\$ 245.67
\$ 65.00	-\$ 77.89	-\$ 104.78	-\$ 131.68	-\$ 158.57	-\$ 185.47
\$ 72.00	-\$ 17.69	-\$ 44.58	-\$ 71.48	-\$ 98.37	-\$ 125.27
\$ 79.00	\$ 42.51	\$ 15.62	-\$ 11.28	-\$ 38.17	-\$ 65.07
\$ 86.00	\$ 102.71	\$ 75.82	\$ 48.92	\$ 22.03	-\$ 4.87

Table 11
 Estimated Costs and Break-even Prices
 Backgrounding Steer Calves on Fescue Pasture--Purchased in Spring
 Buy 450 lb in Mar-Apr, Sell 630 lb in Aug-Sep, 1.2 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	4.50	cwt	118.00	531.00	
Pasture	0.75	acre	51.88	38.91	
Med, Implant, & Salt				18.11	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 531.00	150 days	8.00%	17.46	
Int. on Other Costs	\$ 60.02	150 days	8.00%	1.97	
Death Loss	\$ 531.00		1.00%	5.31	
Total Cash Costs				\$ 615.76	
Procurement Costs (1)				53.80	
Marketing Costs (2)				20.00	
Labor	1.00	hr	8.50	8.50	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Land Cost	0.75	acre	0.00	0.00	
Total All Costs				\$ 709.06	

(1) Procurement Costs:

Order buying	4.50	cwt	0.50	2.25	
Death Loss	\$ 531.00		3.00%	15.93	
Transportation (50 miles)				5.00	
Shrink	\$ 531.00		2.00%	10.62	
Additional Medication				20.00	
				<u>\$ 53.80</u>	

(2) Marketing Costs:

Auction Charge (Incl. Checkoff)				15.00	
Transportation (50 miles)				5.00	
				<u>\$ 20.00</u>	

Break-even Prices and Cost of Gain Summary (630 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain	Your Price
Cash Costs	615.76	97.74	47.09 \$/cwt.	
Procurement Costs	53.80	8.54		
Marketing Costs	20.00	3.17		
Labor Costs	8.50	1.35		
Fixed Costs	11.00	1.75		
Land Charge	0.00	0.00		
Total All Costs	\$ 709.06	\$ 112.55	98.92 \$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 20.26			
Break-even Buy/Sell Margin Total Costs	-\$ 5.45	-\$ 11.45	-\$ 24.47	\$ 0.06

Budget Summary, Short-Term Spring Backgrounding

This analysis estimates the costs of backgrounding 400 to 500 pound steer calves on tall fescue/clover pasture from April 1 until September 1. Steers are purchased in the spring when pasture growth begins, and are sold in late summer when forage production declines or stops. No hay or supplemental feed is required for this alternative, provided adequate moisture is received to keep forage production high throughout the summer. This system requires no feeding facilities and should be considered by producers that can purchase (or produce) cattle at low cost and make efficient use of surplus forage in the spring and summer.

The cost of forage is based on 70% of the total annual cost of maintaining one acre of pasture (assuming that about 70% of the total annual production from an acre of grass/clover pasture occurs during the 5 months required for this backgrounding alternative). Stocking rate is 1.3 head per acre, or 0.75 acres per head. Average daily gain is estimated to be 1.2 pounds under average forage and management conditions. Higher-quality pastures and more intensively managed grazing systems may result in higher daily gains or increased stocking rates.

Health costs include costs of vaccinations, internal and external parasites, two growth implants and 3.2 ounces of a salt and mineral mixture per head daily. Consumption of some commercial mineral mixes will be as much as double this budgeted rate. If an ionophore is fed to increase forage utilization, add about \$2.00 per head to total cost and increase estimated weight gain. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 108.00	\$ 113.00	\$ 118.00	\$ 123.00	\$ 128.00
\$ 38.00	\$ 88.00	\$ 91.57	\$ 95.14	\$ 98.71	\$ 102.29
\$ 42.00	\$ 89.14	\$ 92.71	\$ 96.29	\$ 99.86	\$ 103.43
\$ 47.00	\$ 90.57	\$ 94.14	\$ 97.71	\$ 101.29	\$ 104.86
\$ 52.00	\$ 92.00	\$ 95.57	\$ 99.14	\$ 102.71	\$ 106.29
\$ 56.00	\$ 93.14	\$ 96.71	\$ 100.29	\$ 103.86	\$ 107.43

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Calf Purchase Price (\$/cwt)				
	\$ 108.00	\$ 113.00	\$ 118.00	\$ 123.00	\$ 128.00
\$ 76.00	-\$ 90.03	-\$ 113.50	-\$ 136.96	-\$ 160.43	-\$ 183.89
\$ 86.00	-\$ 27.03	-\$ 50.50	-\$ 73.96	-\$ 97.43	-\$ 120.89
\$ 95.00	\$ 29.67	\$ 6.20	-\$ 17.26	-\$ 40.73	-\$ 64.19
\$ 105.00	\$ 92.67	\$ 69.20	\$ 45.74	\$ 22.27	-\$ 1.19
\$ 114.00	\$ 149.37	\$ 125.90	\$ 102.44	\$ 78.97	\$ 55.51

Table 12
Estimated Costs and Break-even Prices
Yearling Steers Finished on Whole Shelled Corn and Protein Supplement
Buy 750 lb in Oct-Nov, Sell 1,082 lb in Jan-Mar, 2.9 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Steer	7.50	cwt	94.41	708.08	
Shelled Corn	42.00	bu	3.50	147.00	
Soybean Meal 48%	107.00	lbs	0.11	11.77	
Medication				8.98	
Min & Salt				6.40	
Implant				1.00	
Maint,Repr & Fuel				3.00	
Int. on Feeder	\$ 708.08	130 days	8.00%	20.18	
Int. on Other Costs	\$ 178.15	130 days	8.00%	5.08	
Death Loss	\$ 708.08		1.00%	7.08	
Total Cash Costs				\$ 918.55	
Procurement Costs (1)				53.53	
Marketing Costs (2)				43.27	
Labor	3.10	hr	8.50	26.35	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Total All Costs				\$ 1,052.71	

(1) Procurement Costs:

Order buying	7.50	cwt	0.50	3.75	
Death Loss	\$ 708.08		1.50%	10.62	
Transportation (50 miles)				5.00	
Shrink	\$ 708.08		2.00%	14.16	
Additional Medication				20.00	
				\$ 53.53	

(2) Marketing Costs:

Transportation (600 miles)				42.27	
Beef Checkoff				1.00	
				\$ 43.27	

Break-even Prices and Cost of Gain Summary (1,082 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain	Your Price
Cash Costs	918.55	84.89	63.40 \$/cwt.	
Procurement Costs	53.53	4.95		
Marketing Costs	43.27	4.00		
Labor Costs	26.35	2.44		
Fixed Costs	11.00	1.02		
Total All Costs	\$ 1,052.71	\$ 97.29	103.81 \$/cwt.	
Buy/Sell Margins				
		Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)	
			Average	Min (worst) Max (best)
Break-even Buy/Sell Margin Cash Costs		-\$ 9.52		
Break-even Buy/Sell Margin Total Costs		\$ 2.88	\$ 3.79	-\$ 5.58 \$ 12.90

Budget Summary, Steers Finished on Whole Shelled Corn

The cost of finishing yearling steers on whole shelled corn is estimated in this analysis, beginning on November 1. This on-farm finishing system may be used by producers with adequate facilities to add value to corn they've produced by marketing the grain through cattle. Before finishing cattle, producers should carefully evaluate marketing alternatives and estimate the cost of transporting finished cattle to a packing facility. In addition, price risk management strategies for feed and cattle should be developed to cope with market fluctuations, given the substantial capital that must be invested in this enterprise (\$600 - \$800 per steer).

Each steer is fed 18 pounds of whole shelled corn and 0.9 pounds of 48% soybean meal daily for 130 days. The soybean meal is fed as a protein supplement, and is assumed to include an ionophore to improve feed efficiency. Daily gains are expected to average 2.9 pounds. Actual pay weight is estimated to be 1,082 pounds per head (initial weight of 750 pounds plus 377 pounds gain less 4% shrink). Steers are hauled 600 miles to a packer, at a cost of \$3.10 per loaded mile on a truck with 50,000 pound load capacity. The truck is assumed to haul 44 steers averaging 1,127 pounds, and the total hauling cost is \$1,860, for a cost per head of \$28.64.

Medication cost includes treatment for internal and external parasites, vaccine, and injectable vitamins. A salt and mineral mixture is fed at the rate of 3.2 ounces per head per day. Consumption of some commercial mixes will be as much as double this budgeted rate. A small tractor is used one-half hour daily for feeding grain in a feed bunk. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Steer Purchase Price (\$/cwt)				
	\$ 84.41	\$ 89.41	\$ 94.41	\$ 99.41	\$ 104.41
\$ 50.00	\$ 73.85	\$ 77.32	\$ 80.78	\$ 84.25	\$ 87.71
\$ 57.00	\$ 76.00	\$ 79.47	\$ 82.93	\$ 86.40	\$ 89.86
\$ 63.00	\$ 77.84	\$ 81.31	\$ 84.77	\$ 88.24	\$ 91.70
\$ 69.00	\$ 79.68	\$ 83.15	\$ 86.61	\$ 90.08	\$ 93.54
\$ 76.00	\$ 81.83	\$ 85.30	\$ 88.76	\$ 92.23	\$ 95.69

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Steer Purchase Price (\$/cwt)				
	\$ 84.41	\$ 89.41	\$ 94.41	\$ 99.41	\$ 104.41
\$ 82.00	\$ 46.57	\$ 7.63	-\$ 31.31	-\$ 70.26	-\$ 109.20
\$ 86.00	\$ 89.85	\$ 50.91	\$ 11.97	-\$ 26.98	-\$ 65.92
\$ 91.00	\$ 143.95	\$ 105.01	\$ 66.07	\$ 27.12	-\$ 11.82
\$ 96.00	\$ 198.05	\$ 159.11	\$ 120.17	\$ 81.22	\$ 42.28
\$ 100.00	\$ 241.33	\$ 202.39	\$ 163.45	\$ 124.50	\$ 85.56

Table 13
Estimated Costs and Break-even Prices
Yearling Heifers Finished on Whole Shelled Corn and Protein Supplement
Buy 700 lb in Oct-Nov, Sell 996 in Jan-Mar, 2.6 lb Avg. Daily Gain

<i>Item</i>	<i>Quantity</i>	<i>Unit</i>	<i>Price</i>	<i>Cost/Head</i>	<i>Your Cost</i>
Feeder Heifer	7.00	cwt	89.00	623.00	
Shelled Corn	43.00	bu	3.50	150.50	
Soybean Meal 48%	107.00	lbs	0.11	11.77	
Medication				20.43	
Min & Salt				6.40	
Implant				1.00	
Maint, Repr & Fuel				3.00	
Int. on Feeder	\$ 623.00	130 days	8.00%	17.75	
Int. on Other Costs	\$ 193.10	130 days	8.00%	5.50	
Death Loss	\$ 623.00		1.00%	6.23	
Total Cash Costs				\$ 845.58	
Procurement Costs (1)				50.31	
Marketing Costs (2)				39.75	
Labor	3.10	hr	8.50	26.35	
Fixed Costs (depr.,int.,insur.,& taxes)				11.00	
Total All Costs				\$ 972.98	

(1) Procurement Costs:

Order buying	7.00	cwt	0.50	3.50	
Death Loss	\$ 623.00		1.50%	9.35	
Transportation (50 miles)				5.00	
Shrink	\$ 623.00		2.00%	12.46	
Additional Medication				20.00	
				\$ 50.31	

(2) Marketing Costs:

Transportation (600 miles)				38.75	
Beef Checkoff				1.00	
				\$ 39.75	

Break-even Prices and Cost of Gain Summary (996 lb Sold)

Cost Included	Total Amount	Price Per Cwt.	Cost of Gain	Your Price
Cash Costs	845.58	84.90	75.20 \$/cwt.	
Procurement Costs	50.31	5.05		
Marketing Costs	39.75	3.99		
Labor Costs	26.35	2.65		
Fixed Costs	11.00	1.10		
Total All Costs	\$ 972.98	\$ 97.69	118.24 \$/cwt.	

Buy/Sell Margins

	Estimated (\$/cwt)	Historical (last 10 years, \$/cwt)		
		Average	Min (worst)	Max (best)
Break-even Buy/Sell Margin Cash Costs	-\$ 4.10			
Break-even Buy/Sell Margin Total Costs	\$ 8.69	\$ 9.66	\$ 1.56	\$ 20.40

Budget Summary, Heifers Finished on Whole Shelled Corn

The cost of finishing yearling heifers on whole shelled corn is estimated in this analysis, beginning on November 1. This on-farm finishing system may be used by producers with adequate facilities to add value to corn they've produced by marketing the grain through cattle. Before finishing cattle, producers should carefully evaluate their marketing alternatives and estimate the cost of transporting finished cattle to a packing facility. In addition, price risk management strategies for feed and cattle should be developed to cope with market fluctuations, given the substantial capital that must be invested in this enterprise (\$600 - \$800 per heifer).

Each heifer is fed 18 pounds of whole shelled corn and 0.8 pounds of 48% soybean meal daily for 130 days. The soybean meal is fed as a protein supplement, and is assumed to include an ionophore to improve feed efficiency. Daily gains are expected to average 2.6 pounds. Actual pay weight is estimated to be 996 pounds per head (initial weight of 700 pounds plus 338 pounds gain less 4% shrink). Heifers are hauled 600 miles to a packer, at a cost of \$3.10 per loaded mile on a truck with 50,000 pound load capacity. The truck is assumed to haul 48 heifers averaging 1,038 pounds, and the total hauling cost is \$1,860, for a cost per head of \$26.25.

Medication cost includes treatment for internal and external parasites, vaccine, MGA, and injectable vitamins. MGA, a feed additive used to prevent heifers from cycling, is fed at the rate of 1/2 pound per day. A salt and mineral mixture is fed at the rate of 3.2 ounces per head per day. Consumption of some commercial mixes will be as much as double the budgeted rate. A small tractor is used one-half hour daily for feeding grain in a feed bunk. Maintenance, repair, and fuel expense of \$3.00 per head is included to cover the cost of operating a tractor to feed large round bales of hay during the winter.

Break-even Sale Price Over Cash Expenses, \$/cwt

Cash Cost of Gain (\$/cwt)	Heifer Purchase Price (\$/cwt)				
	\$ 79.00	\$ 84.00	\$ 89.00	\$ 94.00	\$ 99.00
\$ 60.00	\$ 73.35	\$ 76.87	\$ 80.38	\$ 83.90	\$ 87.41
\$ 68.00	\$ 75.73	\$ 79.24	\$ 82.76	\$ 86.27	\$ 89.79
\$ 75.00	\$ 77.81	\$ 81.33	\$ 84.84	\$ 88.35	\$ 91.87
\$ 83.00	\$ 80.19	\$ 83.70	\$ 87.22	\$ 90.73	\$ 94.24
\$ 90.00	\$ 82.27	\$ 85.78	\$ 89.30	\$ 92.81	\$ 96.33

Net Return Over Cash Expenses, \$/head

Sale Price (\$/cwt)	Heifer Purchase Price (\$/cwt)				
	\$ 79.00	\$ 84.00	\$ 89.00	\$ 94.00	\$ 99.00
\$ 82.00	\$ 43.84	\$ 7.49	-\$ 28.86	-\$ 65.21	-\$ 101.55
\$ 86.00	\$ 83.68	\$ 47.33	\$ 10.98	-\$ 25.37	-\$ 61.71
\$ 91.00	\$ 133.48	\$ 97.13	\$ 60.78	\$ 24.43	-\$ 11.91
\$ 96.00	\$ 183.28	\$ 146.93	\$ 110.58	\$ 74.23	\$ 37.89
\$ 100.00	\$ 223.12	\$ 186.77	\$ 150.42	\$ 114.07	\$ 77.73

Table 14
Estimated Costs and Break-even Prices
Custom Finishing Cattle in a Commercial Feedlot
Buy in Oct-Nov, Sell in Jan-Feb

ASSUMPTIONS	STEERS	HEIFERS
Cost/Value of Feeder (\$/cwt.)	\$ 94.41	\$ 89.00
Interest Rate on Feeder	8.00%	8.00%
Ration Charge (\$/ton) (1)	\$ 145.00	\$ 145.00
Interest Rate on Feed and Other Costs	8.00%	8.00%
Yardage Charge (\$/head/day)	\$ 0.05	\$ 0.05
Beginning Weight (lbs.):	750	675
Ending Weight (lbs.):	1,250	1,075
Shrink:	4.00%	4.00%
Pay Weight (lbs.): (2)	1,200	1,032
Gain (lbs.):	450	357
Days on Feed:	166	162
Death Loss: (in conversion)	0.50%	0.50%
Feed Conversion - as fed (lbs.): (3)	8.91	9.12
Average Daily Gain: (pay weight to pay weight)	3.01	2.63
Distance to Feedlot (miles)	1,000	1,000
Trucking (\$/loaded mile - one way)	\$ 3.10	\$ 3.10
ITEMIZED COSTS	STEERS	HEIFERS
FEEDER		
Cost/Value of Feeder:	\$ 708.08	\$ 600.75
Interest on Feeder:	25.76	21.33
FEED		
Total Feed Cost: (4)	290.69	236.05
Interest on Feed: (5)	5.29	4.19
OTHER COSTS		
Transportation to Feedlot:	47.50	47.50
Yardage Charge:	8.30	8.10
Processing Charge:	7.00	7.00
Vet, Medication, Supplies:	9.00	9.00
Interest on Other Costs: (5)	1.31	1.27
Break-even Selling Price:	\$ 91.91	\$ 90.62
Total Cost of Gain/cwt:	\$ 87.74	\$ 93.68
Feeding Cost of Gain/cwt: (6)	\$ 71.46	\$ 74.40

(1) Ration charge of \$145.00 based on corn price of \$3.50/bu.

(2) Ending weight minus shrink.

(3) Feed conversion will vary seasonally depending on month of placement.

(4) Based on feed conversion and gain from beginning to pay weight.

(5) Interest costs on feed and other costs are calculated on 1/2 of the total charges.

(6) Excludes transportation costs and interest on feeder.

Budget Summary, Custom Finishing in a Commercial Feedlot

This analysis estimates the cost of finishing cattle in a commercial feedlot located in the Great Plains region. Steers and heifers are shipped to the feedlot on November 1 and are fed 155 days in the system presented, but cattle may be fed any month of the year if adjustments are made to feed conversion and number of days fed based on a placement month.

The cost/value of the feeder animals is calculated using Tennessee prices and weights prior to shipment to Western feedlots. Average daily gain is calculated by subtracting the beginning (Tennessee) weight from the final pay weight, divided by the number of days fed. This value will be lower than average daily gain reported by Western feedlots due to the shrink that occurs in cattle shipped 1,000 miles or more (typically 4-6%).

Ration and yardage charges vary by feedlot and time of year. Ration charges may change during the feeding period unless a fixed charge is locked in when cattle are placed on feed. Footnote 1 explains how the ration charge in this analysis changes when ration ingredient prices change. Interest is charged on the feeder animals for the entire feeding period, and on feed and all other costs for half the feeding period. Transportation cost assumes shipment to the feedlot in 50,000 pound loads, at a cost of \$3.10 per loaded mile.

Break-even Sale Price Over Total Expenses--Steers, \$/cwt

Total Cost of Gain (\$/cwt)	Steer Purchase Price (\$/cwt)				
	\$ 84.41	\$ 89.41	\$ 94.41	\$ 99.41	\$ 104.41
\$ 70.00	\$ 78.65	\$ 81.65	\$ 84.65	\$ 87.65	\$ 90.65
\$ 79.00	\$ 82.25	\$ 85.25	\$ 88.25	\$ 91.25	\$ 94.25
\$ 88.00	\$ 85.85	\$ 88.85	\$ 91.85	\$ 94.85	\$ 97.85
\$ 97.00	\$ 89.45	\$ 92.45	\$ 95.45	\$ 98.45	\$ 101.45
\$ 106.00	\$ 93.05	\$ 96.05	\$ 99.05	\$ 102.05	\$ 105.05

Net Return Over Total Expenses--Steers, \$/head

Sale Price (\$/cwt)	Steer Purchase Price (\$/cwt)				
	\$ 84.41	\$ 89.41	\$ 94.41	\$ 99.41	\$ 104.41
\$ 82.00	-\$ 41.19	-\$ 80.06	-\$ 118.92	-\$ 157.78	-\$ 196.65
\$ 86.00	\$ 6.81	-\$ 32.06	-\$ 70.92	-\$ 109.78	-\$ 148.65
\$ 91.00	\$ 66.81	\$ 27.94	-\$ 10.92	-\$ 49.78	-\$ 88.65
\$ 96.00	\$ 126.81	\$ 87.94	\$ 49.08	\$ 10.22	-\$ 28.65
\$ 100.00	\$ 174.81	\$ 135.94	\$ 97.08	\$ 58.22	\$ 19.35

Table 15
Estimated Returns and Expenses
Beef Cow and Calf, Fed Hay Over Winter
Winter Calving, 30-cow Herd, 35 Animal Units

<i>ITEM</i>	<i>DESCRIPTION</i>	<i>UNIT</i>	<i>QUANTITY</i>	<i>PRICE</i> <i>(\$)</i>	<i>AMOUNT</i> <i>(\$)</i>	<i>PER</i> <i>COW</i>	<i>YOUR</i> <i>FARM</i>
Revenue							
Feeder Heifers	9 head @ 465 lbs.	cwt	41.85	90.00	3,766.50	125.55	
Feeder Steers	13 head @ 510 lbs.	cwt	66.30	100.00	6,630.00	221.00	
Cull Cows	5 head @ 900 lbs.	cwt	45.00	45.00	2,025.00	67.50	
Death Loss	2.00%				-283.50	-8.10	
Beef Checkoff	At Market	head	27.00	1.00	<u>-27.00</u>	<u>-0.90</u>	
Total Revenue					12,111.00	403.70	
Variable Expenses							
Feed	Ground Corn	bu	47.70	4.20	200.34	6.68	
	Hay	ton	44.00	55.00	2,420.00	80.67	
	Pasture 1.5 acre/au	acre	52.50	74.12	3,891.30	129.71	
Salt & Minerals		au	35.00	20.90	731.50	24.38	
Vet & Med		head	30.00	15.80	474.00	15.80	
Marketing		head	27.00	14.00	378.00	12.60	
Truck		head	27.00	5.00	135.00	4.50	
Machinery		hour	20.00	4.00	<u>80.00</u>	<u>2.67</u>	
Total Variable Expenses					8,310.14	277.00	
Return Above Variable Expenses					3,800.86	126.70	
Fixed Expenses							
Depreciation	Bldgs. & Equip	head	30.00	15.58	467.40	15.58	
Repairs	Bldgs. & Equip	head	30.00	3.36	100.80	3.36	
Depreciation	Bull	head	30.00	5.16	154.80	5.16	
Depr. & Repairs	Fences	head	30.00	12.00	360.00	12.00	
Tractor, 50 hp		hour	20.00	3.00	<u>60.00</u>	<u>2.00</u>	
Total Fixed Expenses					1,143.00	38.10	
Total Variable and Fixed Expenses					9,453.14	315.10	
Net Return to Land, Labor, Capital, and Management					2,657.86	88.60	
Interest							
Cow & Sire	\$511 @ 7%	head	30.00	40.88	1,226.40	40.88	
Bldgs. & Equip	1/2 Investment Cost	head	30.00	20.18	605.40	20.18	
Fixed Capital	Mach. & Equipment	hour	20.00	1.08	<u>21.60</u>	<u>0.72</u>	
Total					1,853.40	61.78	
Total Variable, Fixed and Interest Expenses					11,306.54	376.88	
Net Return to Land, Labor, and Management					804.46	26.82	
Labor		hour	270.00	8.50	2,295.00	76.50	
Total All Expenses					13,601.54	453.38	
Net Return to Land and Management					-1,490.54	-49.68	

Budget Summary, Beef Cow and Calf Fed Hay Over Winter

The beef herd includes 30 crossbred cows, 5 raised replacement heifers, and one bull. A 90% calf crop results in 13 steers and 14 heifers, with 5 heifers kept as replacements each year. Cows are bred to calve on February 15, and calves are sold on October 15, on average.

The budget assumes 1.5 acres of permanent pasture per animal unit for a total of 52.5 acres (30 cows = 30 animal units, 1 bull = 1 animal unit, and 5 heifers = 4 animal units). Cows receive good quality grass/clover hay at the rate of 16 lbs./head/day for 75 days prior to calving, and 25 lbs./head/day for 45 days after calving. Heifers consume 16 lbs./head/day of grass/clover hay, plus 3 lbs/head/day of ground corn for 178 days (Oct. 15 to April 11). The bull consumes 30 lbs. of hay daily for 135 days. Salt and mineral mixture is fed at the rate of 4 ounces per animal unit daily, year round. Veterinary and medicine expenses include calf vaccinations, internal and external parasite control costs for all animals, calf implants (steers and market heifers), and pregnancy check for females.

A tractor is used 20 hours annually to feed hay. Interest and depreciation on buildings and equipment is included to represent ownership costs of these assets. Interest expenses are calculated using a 9% interest rate.

Table 16
Estimated Expenses Per Acre
Cool Season Grass/Clover, Continuous Grazing

<i>ITEM</i>	<i>DESCRIPTION</i>	<i>UNIT</i>	<i>QUANTITY</i>	<i>PRICE</i> <i>(\$)</i>	<i>AMOUNT</i> <i>(\$/ACRE)</i>	<i>YOUR</i> <i>FARM</i>
<i>Variable Expenses</i>						
Fertilizer(1)	N	lb	60.00	0.48	28.80	_____
	P205	lb	30.00	0.34	10.20	_____
	K2O	lb	30.00	0.23	6.90	_____
	Custom Application	acre	1.00	5.00	5.00	_____
Overseeding(2)	White Clover	lb	0.33	3.06	1.01	_____
	Red Clover	lb	0.67	2.86	1.92	_____
Weed Control(3)						_____
Post-Emerge	2,4-D Ester 4EC	pt	1.00	2.04	2.04	_____
	Custom Application	acre	0.50	5.00	2.50	_____
Lime(4)	Custom Application	ton	0.20	21.00	4.20	_____
Machinery Fuel		acre	1.00	1.53	1.53	_____
Machinery Oil & Filter		acre	1.00	0.23	0.23	_____
Machinery Repairs		acre	1.00	1.38	1.38	_____
Fence Repairs		acre	1.00	5.56	5.56	_____
Operating Capital	6 Months	acre	71.27	8%	<u>2.85</u>	_____
Total Variable Expenses					74.12	_____
<i>Fixed Expenses</i>						
Depreciation	Mach. & Equipment	acre	1.00	0.57	0.57	_____
Interest	Mach. & Equipment	acre	1.00	0.79	0.79	_____
Housing & Insurance	Mach. & Equipment	acre	1.00	0.09	<u>0.09</u>	_____
Depreciation and Interest Expenses					1.45	_____
<i>Labor Expenses</i>						
Labor(5,6)		hour	0.35	8.50	<u>2.98</u>	_____
Total Budgeted Expenses					78.55	_____

(1) Fall application of nitrogen. Spring nitrogen provided by clover.

(2) To maintain clover in the mixture it should be overseeded every 4 years at the rate of 2 lbs of white clover and 4 lbs of red clover per acre.

(3) Weed spray is done every two years at a rate of 2 pt/acre to supplement clipping and control broadleaf weeds.

(4) Lime is applied at the rate of 2 tons every 10 years.

(5) Labor cost is \$8.50 per hour, including wages, Social Security and Medicaid taxes, and payroll administration.

(5) Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analysis.

Table 17
Estimated Expenses Per Acre
Winter Annuals, Intensive Grazing, No-Till Establishment

<i>ITEM</i>	<i>DESCRIPTION</i>	<i>UNIT</i>	<i>QUANTITY</i>	<i>PRICE</i> (\$)	<i>AMOUNT</i> (\$/ACRE)	<i>YOUR</i> <i>FARM</i>
<i>Variable Expenses</i>						
Seed(1)	Rye	bu	1.50	14.84	22.26	
	Ryegrass	lb	15.00	0.59	8.85	
Fertilizer(2)	N	lb	120.00	0.48	57.60	
	P2O5	lb	40.00	0.34	13.60	
	K2O	lb	40.00	0.23	9.20	
	Custom Application	acre	3.00	5.00	15.00	
Lime(3)	Ag Limestone	ton	0.50	21.00	10.50	
Weed Control						
Burndown	Gramoxone Extra	pt	1.50	4.91	7.37	
	Surfactant	qt	0.50	1.63	0.82	
	Custom Application	acre	1.00	5.00	5.00	
Machinery Fuel		acre	1.00	6.35	6.35	
Machinery Oil & Filter		acre	1.00	0.95	0.95	
Machinery Repairs		acre	1.00	8.91	8.91	
Fence Repairs		acre	1.00	6.86	6.86	
Operating Capital	6 Months	acre	173.26	8%	<u>6.93</u>	
Total Variable Expenses					180.19	
<i>Fixed Expenses</i>						
Depreciation	Mach. & Equipment	acre	1.00	3.71	3.71	
Interest	Mach. & Equipment	acre	1.00	5.52	5.52	
Housing & Insurance	Mach. & Equipment	acre	1.00	0.48	0.48	
Depreciation	Perimeter Fence	acre	1.00	6.94	6.94	
Depreciation	Divider Fence	acre	1.00	6.50	6.50	
Interest	Perimeter Fence	acre	1.00	5.56	5.56	
Interest	Divider Fence	acre	1.00	1.30	<u>1.30</u>	
Depreciation and Interest Expenses					30.01	
<i>Labor Expenses</i>						
Labor(4,5)		hour	1.23	8.50	<u>10.46</u>	
Total Budgeted Expenses					220.66	

(1) Wheat and crimson clover may also be used for winter grazing.

(2) 60 lbs of nitrogen applied at seeding. Remainder applied in the Spring as two 30 lb. applications.

(3) Lime is applied at the rate of 2 tons per acre every 4 years.

(4) Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes, and payroll administration costs.

(5) Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analysis.

Table 18
Estimated Expenses Per Acre
Corn Silage, No-Till Establishment

<i>ITEM</i>	<i>DESCRIPTION</i>	<i>UNIT</i>	<i>QUANTITY</i>	<i>PRICE</i> <i>(\$)</i>	<i>AMOUNT</i> <i>(\$/ACRE)</i>	<i>YOUR</i> <i>FARM</i>
Variable Expenses						
Corn Seed(1)	23 Thousand Seed	bag	0.28	100.75	28.21	
Insecticide	Force	lb	4.00	4.57	18.28	
Fertilizer(2)	N	lb	150.00	0.48	72.00	
	P2O5	lb	60.00	0.34	20.40	
	K2O	lb	120.00	0.23	27.60	
	Custom Application	acre	1.00	5.00	5.00	
Lime(2)	Custom Application	ton	0.50	21.00	10.50	
Weed Control(3)						
Burndown	Gramoxone Extra	pt	2.00	4.91	9.82	
	Surfactant	qt	0.50	1.63	0.82	
	Custom Application	acre	1.00	5.00	5.00	
Pre-Emerge	Atrazine,4L	qt	0.80	1.26	1.01	
	Bicep II	qt	4.80	5.65	27.12	
Post-Emerge	Accent	oz	0.67	34.94	23.41	
	Surfactant	qt	0.50	1.63	0.82	
	Custom Application	acre	1.00	5.00	5.00	
Machinery Fuel		acre	1.00	11.63	11.63	
Machinery Oil & Filter		acre	1.00	1.74	1.74	
Machinery Repairs		acre	1.00	11.86	11.86	
Operating Capital	6 Months	acre	280.22	8%	11.21	
Total Variable Expenses					291.43	
Fixed Expenses						
Depreciation	Mach. & Equipment	acre	1.00	10.04	10.04	
Interest	Mach. & Equipment	acre	1.00	11.57	11.57	
Housing & Insurance	Mach. & Equipment	acre	1.00	1.85	1.85	
Depreciation and Interest Expenses					23.46	
Labor Expenses						
Labor(4)		hour	1.81	8.50	15.39	
Total Budgeted Expenses					330.28	

(1) Plant population and rate of fertilization are directly related. A higher population probably should be fertilized at a higher rate.

(2) Lime is applied at the rate of 2 tons every 4 years.

(3) When other chemicals are used calculate the appropriate costs for the chemical used. Rates are for medium textured soils--use lower rates for sandy soils and higher rates for fine-textured or clay-type soils, check labels. Other herbicide combinations are available.

(4) Labor cost is \$8.50 per hour, including wages, Social Security and Medicaid taxes, and payroll administration.

Corn, Silage No-Till Establishment, Break-even Analysis

	<u>Yield/Acre</u>	<u>Break-even Price/Ton</u>
Break-even Price to Cover Variable Expenses at a Yield of	14.5 tons	\$ 20.10
Break-even Price to Cover All Budgeted Expenses at a Yield of	14.5 tons	\$ 22.78

E12-4115-00-006-07

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating.
UT Extension provides equal opportunities in programs and employment.