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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	_____

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 Background & Hay, Steers, Pasture Oct-Jan	Table 5 Background & Hay, Steers, Pasture Oct-Jun	Table 6 Background & Hay, Steers, Pasture Oct-Aug	Table 7 Background Steers, Sim Grain Oct-Jun	Table 8 Background Steers, Corn Silage & Corn, Oct-Feb	Table 9 Background Steers, Pasture & Corn, Oct-Mar	Table 10 Background Holstein Steers, Pasture, Oct-Aug	Table 11 Background Steers, Pasture, Mar-Aug	Table 12 Finish Steers, Shelled Corn Oct-Jan	Table 13 Finish Heifers, Shelled Corn, Oct-Jan	Table 14 Custom Finish Steers, Oct-Jan	Table 14 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	\$ 91.91	\$ 90.62
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	-\$ 8	\$ 6
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.

