



TIMELY INFORMATION

Agriculture & Natural Resources

Agricultural Economics and Rural Sociology, Auburn University, AL 36849-5639

DAERS 06-02

March 2006

How Do I Set A Feeder Calf Price Objective?

Walt Prevatt and Max Runge
Extension Economists

Setting a feeder calf price objective sure sounds like a neat thing to do. To some farmers it may conjure up ideas that a profit is possible if they can just find the right market or right buyer; to some farmers this may sound like a way to meet debt commitments as they try to grow larger; and to some farmers this may sound like an opportunity to add an additional family member to the operation, while some others may only want to know if they can breakeven. As you might expect, the reason for setting a feeder calf price objective may be considerably different for each individual. However, setting and using a feeder calf price objective can be enlightening and rewarding for all cow-calf farmers. It will certainly help you define your goals and objectives.

What Should A Feeder Calf Price Objective Include?

Determining a feeder calf price objective involves describing and setting your goals and objectives for your cow-calf operation. Anything that you want to accomplish with the cow-calf enterprise should be included in the feeder calf price objective. Table 1 provides an example of several items that are often included in a feeder calf price objective.

Table 1. An example of setting a feeder calf price objective for a 50-head cow herd.

<u>SETTING A FEEDER CALF PRICE OBJECTIVE</u>	<u>Total \$</u>	<u>\$ / Calf</u>	<u>\$ / Cwt.</u>
Feeder calf production cost, UCOP	\$22,000	\$489	\$91.67
Growth/investment capital	\$2,400	\$53	\$10.00
Retirement/savings	\$1,200	\$27	\$5.00
Personal reward	\$1,200	\$27	\$5.00
Feeder calf price objective ----->	\$26,800	\$596	\$111.67

For instance, if you have as a goal to make a profit with the cow-calf enterprise, you will certainly want to cover your feeder calf production cost. The estimated feeder calf production cost in this example is \$91.67 per hundredweight (commonly referred to as your unit cost of production, UCOP). Calculating your cost of production and making the necessary adjustments to the cost data before dividing by the total pounds of calf production requires you to identify and collect accurate financial and production information. A more detailed discussion of this procedure will be presented later in this paper.

Most cattlemen are interested in the growth (expanding) of their cow-calf operations. Historically, for cattle farmers to sustain a similar financial return over time, the cow-calf operation needs to grow to compensate for

shrinking profit margins and/or inflation. For instance, in 1970 about ten calves were needed to buy a half-ton pick-up truck, while in the year 2005 about forty calves were needed to buy a half-ton truck. In the example in Table 1, it was assumed that \$2,400 or \$10.00/cwt. was needed annually to provide the necessary capital for expanding the cow-calf operation. Planning for growth and investment capital allows for investment in additional resources such as cattle, land, machinery and equipment, and other assets to expand the cow-calf operation when economic units can be purchased.

Where do we get the money to provide for retirement, an education for our children, and other needs? Many cattle farmers intend to cover these items with personal savings. Thus, we need to include an allocation in our price objective for retirement and/or savings. In Table 1, this farmer had as an retirement/savings objective of \$1,200 per year (\$27 per head per year * 45 head). Many farmers do not realize it, but placing \$1,200 per year in a savings account over a 40-year period amounts to a sizeable sum of money that can be used for retirement, your children's education, and/or other investments. For example, placing the \$1,200 per year in a savings account for 40 years equals \$48,600. If the \$1,200 per year was compounded annually at 5% interest this would amount to more than \$146,000. If this money is not saved annually (available from the price objective), some cows or land may need to be sold in order to afford retirement, the children's education, or other needs. Of course, selecting the annual amount of \$27 per head or \$1,200 per year as in this example is subject to individual preferences as to how much they feel they will need at some point in the future.

The last item in Table 1 provides an opportunity for personal rewards. This is a component of the price objective that is earmarked for personal objectives that bring personal satisfaction and/or a higher standard of living to the cow-calf farmer. This is a reward for working harder, more efficiently, and/or smarter. This amount should be set high enough to achieve an individual's personal goal, whether it is taking a vacation, buying the spouse a gift (bass boat), or giving to a charity or the church. In the example, \$1,200 per year or \$5.00 per hundredweight was used as the personal reward for running a profitable cow-calf operation.

The sum of the four items in Table 1, feeder calf production costs, growth/investment capital, retirement/savings, and personal reward, allows us to determine the feeder calf price objective that will accomplish our goals and objectives. As shown in Table 1, the feeder calf price objective was \$111.67 per hundredweight or \$596 per calf in order to accomplish our goals. Understandably, during certain years the market may not allow this feeder calf price objective to be met. Thus, some prioritizing will be required.

Basically, a feeder calf price objective can include whatever you want it to. You simply need to identify the goals and objectives you want to accomplish and place a value on the objectives so they can be expressed in market price terms (\$/cwt. or \$/lb.). Of course, various price objective goals will change over time depending upon a large number of factors (cost of production, level of production, weather, culling decisions, etc.). Additional considerations may include births, deaths, marriage, divorce, disability, age, health, governmental policies and regulations, etc. Thus, developing and achieving a feeder calf price objective is not a one-time event, but a process that must be reviewed and adjusted on a regular basis.

Getting Started On Setting the Feeder Calf Price Objective

As mentioned earlier, a good place to start is by identifying what you want to accomplish with your cow-calf operation. Goals and objectives will become better defined only after you discuss them with your partners and agree that they are reasonable. You will also be able to better quantify what it will take to attain a given goal after you have defined it. Let's work through an example that will provide the background information on how to get started on setting the feeder calf price objective. The four components included in this example include feeder calf production cost (unit cost of production, UCOP), growth/investment capital, retirement/savings, and personal reward.

Feeder Calf Production Costs

How many times have you wondered, “What does it cost me to produce feeder calves?” Or more specifically, “What does it cost me per hundredweight to produce feeder calves?” Keeping accurate and detailed financial and production records is the best way to know what it will cost per hundredweight to produce feeder calves or what is better known as the “Unit Cost of Production (UCOP)” for producing feeder calves.

The first two sections in Table 2 describe the production and financial information needed to estimate the feeder calf production cost for your operation. If you have not kept detailed production and financial information, you can estimate these data to arrive at a rough estimate of your feeder calf production costs. You may want to look at your Federal Income Tax, Schedule F Form from previous years to get an idea of what these costs could total. Table 2 provides a data sheet to collect and analyze the necessary production and financial information. The calculations are simple and can be accomplished with pencil and paper. A Microsoft Excel spreadsheet version is also available at <http://www.ag.auburn.edu/agec/pubs/budgets/> that you can download and use to calculate the feeder calf price objective for your cow-calf operation.

Animal Production Information

The animal production information used in this analysis includes the beginning inventory of exposed cows, the total number of weaned calves, and the total weight of all weaned calves, as shown in Table 2. The beginning inventory of exposed cows may be taken from herd records or estimated for each year. Most farmers who sell at weaning should be able to get an idea of the number of weaned animals and weaning weights from their sales receipts from prior years. These data can be used as a benchmark to estimate the values for the current year. Be sure to include all feeder calves including those retained for replacement heifers or retained for future weight gain. This minimal level of production information will help you estimate the cost to carry a cow for one year, cost per weaned calf, and the unit cost of production (cost per hundredweight of calf production).

Financial Information

The financial information used in this analysis includes six categories of production cost information and four adjustments to production costs. The six categories of production costs include purchased feed costs, raised feed costs, grazing costs, cattle costs, interest costs, and indirect costs. Each of these cost categories should include all costs (cash and non-cash such as depreciation) related to the category.

Purchased feed costs includes all feed purchases such as hay, protein supplements, energy supplements, and salt and mineral, and any storage and/or hauling costs. Raised feed cost includes all production costs associated with raising feedstuffs such as hay, haylage, and silage. Grazing costs should include all grazing related costs such as lime, fertilizer, weed control, and labor. Cattle costs should include cattle production costs such as veterinary medicine and supplies, depreciation on purchased livestock, parasite control, and labor (feeding, working cows, and fencing). Interest costs should include short, intermediate, and long-term interest costs associated with the cow-calf operation. Indirect costs should include telephone expenses, utility expenses, educational expenses, depreciation on assets not allocated to other cost categories, etc.

Table 2. A simple method to estimate feeder calf production costs.¹

Item	Year 2006		Estimate Per Cow	Estimate Per Calf	Estimate Per Cwt. ²
PRODUCTION DATA					
Beginning inventory Of exposed cows (hd) ³	50	*	NA	NA	NA
Total number of calves weaned (hd)	45	*	90%	NA	NA
Total weight of all calves weaned (lbs)	24,000	*	480	533	NA
		* * *	*	*	*
FINANCIAL DATA					
Purchased feed costs	\$1,500	*	\$30	NA	NA
Raised feed costs	\$5,500	*	\$110	NA	NA
Grazing costs	\$3,000	*	\$60	NA	NA
Cattle costs	\$2,200	*	\$44	NA	NA
Interest costs	\$1,200	*	\$24	NA	NA
Indirect costs	\$10,500	*	\$210	NA	NA
- Adjustment for other enterprise expenses ⁴ (\$)	\$4,500	*	NA	NA	NA
- Adjustment for non-calf revenue ⁵ (\$)	\$3,500	*	\$70	NA	NA
+Adjustment for opport. cost on owned capital ⁶ (\$)	\$2,100	*	\$42	\$46.67	\$8.75
+ Adjustment for unpaid labor / mgt. (\$)	\$4,000	*	\$80	\$88.89	\$16.67
Feeder calf production cost ⁷ (\$)	\$22,000	*	\$440	\$489	\$91.67

¹The spreadsheet for this table is available at the following website: <http://www.ag.auburn.edu/agec/pubs/budgets/>. Enter data for items highlighted with blue shading.

²If your goal is to be profitable 10 years out of 10, then your “Feeder calf production costs (\$ per hundredweight of calf production)” target should be lower than the lowest market price received during the 10 year period. In this example, the feeder calf production cost (\$22,000 / 24,000 lbs = \$91.67/cwt. or \$0.9167/lb.) is above the historical feeder calf market prices 4 years out of the last 10 years.

³The beginning inventory of exposed cows was the number of cows exposed to the bull the previous year.

⁴The adjustment for other enterprise costs includes costs associated with other enterprises (such as horses, goats, or watermelons) that were included in any of the cost categories listed.

⁵Non-calf revenue includes the revenue from cull cows, heifers, and bulls (refer to Form 4797).

⁶The adjustment for opportunity cost on owned capital provides the producer some return on owned capital (i.e. \$70,000 * 3 percent = \$2,100).

⁷Feeder calf production cost is equal to purchased feed costs + raised feed costs + grazing costs + cattle costs + interest costs + indirect costs - the adjustment for other enterprise costs - the adjustment for non-calf revenue + opportunity cost of owned capital + adjustment for unpaid labor and management (for example, for 2006, \$1,500 + \$5,500 + \$3,000 + \$2,200 + \$1,200 + \$10,500 - \$4,500 - \$3,500 + \$3,100 + \$4,000 = \$22,000).

Many farmers keep their financial records using other methods and different cost categories. The spreadsheet can be modified to include these other cost categories. Some farmers may want to estimate their costs of production from their Federal Income Tax, Schedule F Form. This method is acceptable, but remember that some adjustments to the cost data will likely be needed to reflect only the costs of the cow-calf operation. Regardless of how you keep your financial records, it is important that all costs are included in this analysis.

Adjustments to Costs

The first adjustment that should be considered is an adjustment for the costs of other enterprises that may be included in the cost data in the various categories reported above. This adjustment is commonly for other enterprises such as horses, goats, or crops. In this example, an adjustment was made to subtract \$4,500 for the costs associated with horses for recreation.

The second adjustment is an adjustment for non-calf revenue. The cow-calf enterprise is a multiple product enterprise that includes selling feeder calves, open heifers, cull cows, cull bulls, etc. The non-calf revenue adjustment in this example was \$3,500 for cull cows, heifers, and bulls sold from this enterprise. Thus, you would subtract \$3,500 from the overall production costs.

The third adjustment is for the opportunity cost on owned capital. The adjustment for opportunity cost on owned capital provides the farmer some return on owned capital. In this example, it was assumed that the farmer owned free and clear \$70,000 worth of cows, land, and machinery and equipment. Using three percent as a long-term investment alternative, the opportunity of owned capital amounted to +\$2,100 ($0.03 * \$70,000$).

The fourth and final adjustment is for unpaid labor and management. In this example it was assumed that the farmer provided about 10 hours of labor and management per brood cow per year at a rate of \$8 per hour. This adjustment totals to +\$4,000 ($10 \text{ hours} * 50 \text{ brood cows} * \$8/\text{hour}$).

After summing the six cost categories and the four cost adjustments described above, you have calculated the feeder calf production cost for your cow-calf operation. In this example, the estimated feeder calf production costs total \$22,000 for the 50-head beef cowherd. The feeder calf production cost divided by the number of brood cows exposed provides an estimate of your feeder calf production cost per brood cow. Likewise, the feeder calf production cost divided by the number of calves provides an estimate of the production cost per calf. Lastly, the estimated feeder production costs divided by the total weaning weight of all feeder calves provides an estimate of the feeder calf production cost per hundredweight (unit cost of production, UCOP). Thus, in this example the feeder calf production cost per brood cow, per calf, and per hundredweight were \$440 per cow, \$489 per calf, and \$91.67 per hundredweight, respectively.

Setting the Feeder Calf Price Objective

The final two steps to setting the feeder calf price objective involve summing the various items that make up the price objective and determining the individual heifer and steer price objectives. The items that make up the feeder calf price objective in this example include feeder calf production cost, growth/investment capital, retirement/savings, and personal reward, as shown in Table 1 and Table 3. The values for these items will vary greatly from one cow-calf operation to another and over time. After summing these items, you have determined an overall feeder calf price objective that may be expressed in dollars per hundredweight (\$111.67/cwt.), dollars per calf (\$596/calf), and total dollars (\$22,000).

The final step is to determine the individual heifer and steer price objectives by adjusting the overall feeder calf price objective based on the individual group weights of heifers and steers and the current market price difference between heifers and steers. Dividing the total heifer weight (include all heifers)

by the total weight of all feeder calves provides a heifer weight ratio of 0.46 (11,000 lbs./24,000 lbs.), while dividing the total steer weight by the total weight of all feeder calves results in a steer weight ratio of 0.54 (13,000 lbs. / 24,000 lbs.). These ratios will be used to adjust the steer-heifer price difference before it is added (for steers) or subtracted (for heifers) to the average feeder calf price objective.

The current market price difference between the heifers and steers can be obtained by reviewing the most current Alabama Feeder Cattle Auction report, <http://www.ams.usda.gov/lsmnpuubs/cfaal.htm>, and comparing the market price reported for the average weight of heifers and average weight of steers of a given frame and muscle score that are representative of your feeder calves. Simply subtract the heifer price from the steer price to obtain the steer-heifer price difference. The steer-heifer price difference is usually a positive number.

The heifer price objective may be calculated by subtracting from the feeder calf price objective the product of the steer-minus heifer price difference times the steer weight ratio. In this example, the heifer price objective is calculated as follows:

Heifer price obj. = Feeder calf price objective – (steer-heifer price difference * steer weight ratio),

where, the steer weight ratio is the estimated weight of steers divided by the total weight of the calf crop.

Thus, the heifer price objective = \$111.67/cwt. – (\$4.00/cwt. x (13,000/24,000))
= \$111.67/cwt. – (\$4.00/cwt. x 0.54)
= \$109.50/cwt.

The steer price objective may be calculated by adding to the average feeder calf price objective the product of multiplying the steer-minus price difference times the heifer weight ratio. In this example, the steer price objective is calculated as follows:

Steer price obj. = Feeder calf price objective + (steer-heifer price difference * heifer weight ratio),

where, the heifer weight ratio is the estimated weight of heifers divided by the total weight of the calf crop.

Thus, the steer price objective = \$111.67/cwt. + (\$4.00/cwt. x 11,000/24,000)
= \$111.67/cwt. + \$4.00/cwt. x 0.46)
= \$113.50/cwt.

Now you are ready to check the market price potential for feeder calves. Before determining your heifer and steer price objectives, you would not have known what an acceptable feeder calf market price was. The heifer and steer price objectives, \$109.50/cwt. and \$113.50/cwt., respectively, provide you with numerical values that can be used to compare with the current feeder calf market prices.

If current market prices are higher than your price objectives, you will have an opportunity to spread the additional money among your itemized price objectives. However, if the current market prices are lower than your price objectives, you will need to examine alternative production and marketing strategies that will allow you to attain your feeder heifer and steer price objectives. Strategies may include alternative market locations, alternative types of markets, and alternative market periods.

Table 3. Setting the feeder heifer and steer price objectives.

	<u>Total \$</u>	<u>\$ / Calf</u>	<u>\$ / Cwt.</u>
Feeder calf production cost, UCOP	\$22,000	\$489	\$91.67
Growth/investment capital	\$2,400	\$53	\$10.00
Retirement/savings	\$1,200	\$27	\$5.00
Personal reward	\$1,200	\$27	\$5.00
Feeder calf price objective ----->	\$26,800	\$596	\$111.67
Total number of heifers, Hd.	22	Avg. Wt.	Hfr. weight ratio
Estimated weight of heifers, Lbs.	11,000	500	0.46
Total number of steers, Hd.	23	Avg. Wt.	Str. Weight ratio
Estimated weight of steers, Lbs.	13,000	565	0.54
Steer-heifer price difference, \$/Cwt.	\$4.00		
	<u>Total \$</u>	<u>\$ / Calf</u>	<u>\$ / Cwt.</u>
Feeder heifer price objective ----->	\$12,045	\$547.50	\$109.50
Feeder steer price objective ----->	\$14,755	\$641.52	\$113.50
	----- \$26,800		

Items That May Skew the Feeder Calf Price Objective Estimate

Be aware of items that may skew the feeder calf price objectives. The items that skew the feeder calf price objective estimates may be traced back to the financial and production data entries. Therefore, an infinite number of factors could influence the price objective estimates such as changes in input prices and level of input use, animal health, inadequate and/or inconsistent management practices, weather, tax management, and governmental policies and regulations. Some specific examples that may skew the price objective estimates include:

- Accelerated depreciation
- Buying inputs for future time periods to reduce your current taxable income.
- Large increases or decreases in input prices (fertilizer, hay, feed, etc.).
- Weaning calves earlier or later than normal.
- Abrupt changes in cattle inventory (expanding or liquidating).
- Adverse weather (drought, floods, hurricanes, etc.)
- Herd-health issues.
- Large purchases of inputs that are used over a long time period.
- Proper allocation of production costs among enterprises
- Trade and regulation issues relating to inputs
- Governmental policies and programs

If any of these or other items are expected to skew the results of your feeder calf price objectives, you should attempt to make the adjustments needed to correctly set reasonable feeder calf price objectives. In addition, you may want to go back to the spreadsheet and examine what a 10 percent reduction in feeder calf production cost or a 10 percent increase in the pounds of calf production and/or both would have on the feeder calf price objective. This will help you understand the sensitivity of your feeder calf price objectives.

Summary

Setting feeder calf price objectives is well worth your time and effort. It will help you identify and get focused on the goals and objectives of your cow-calf operation. It will also help you to become more familiar with the financial and production capabilities of your cow-calf operation and what effect they have on feeder calf price objectives. Without knowing the financial and production capabilities of your cow-calf operation, you will not be able to make informed feeder calf marketing decisions. A ballpark feeder calf price objective is better than no price objective at all.

If you are a farmer wanting to improve your cow-calf profits, knowing the feeder calf price objectives (based on the financial and production data of your cow-calf operation) will improve your chances of success. Knowing the financial cost and production data and feeder calf price objectives in advance for your operation will also allow you to react to the opportunities/problems that you will certainly face in the future.