



Beef Tips

January 2010

Department of Animal Sciences & Industry

www.asi.ksu.edu/beeftips

Upcoming Events

K-State Winter Ranch Management Seminar

Jan 11, 2010
Manhattan, KS
www.KSUBeef.com

4-State Beef Conference

Jan. 13, 2010
Holton, KS
785-364-4125

KS Hay & Grazing Conf.

Jan. 13, 2010
Manhattan, KS
620-431-1530

Applied Reproductive Strategies in Beef Cattle

Jan. 28 –29, 2010
San Antonio, TX
www.beefrepro.info

KSU Cattlemen's Day

March 5, 2010
Manhattan, KS
www.KSUBeef.com

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Costs more important in determining profit differences than revenue

Kevin Dhuyvetter and Michael Langemeier, Agriculture Economics

Kansas Farm Management Association (KFMA) data presented in the November 2009 Beef Tips indicated net returns or profits for beef cow enterprises vary over time and among producers. To further explain differences in profits among these operations, the relative importance of gross income, total cost, feed cost, labor cost, depreciation and machinery cost and herd size was examined for high, middle and low profitability groups based on per cow return to management.

Data was included for any operation that had a minimum of three years of data over the 2004-2008 time period. Operations were excluded for the following reasons: average selling weight over 700 pounds (presumed backgrounding operations), fewer than 10 cows, no recorded production, cattle purchases greater than 20 percent of their herd in any one year, or net sales of breeding stock were greater than 20 percent in any one year. There were 65 operations with multi-year average profits to analyze.

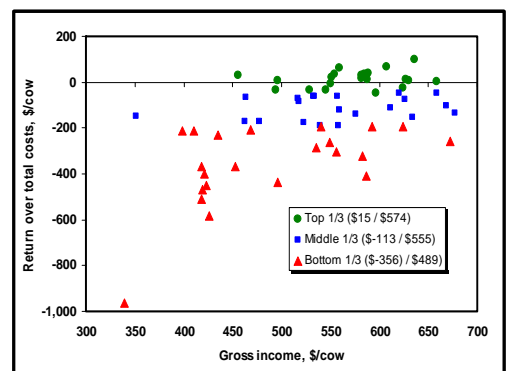
The top profit group (table 1, page 4) was characterized by a gross income per cow that was 17 percent higher than that of the bottom profit group. Though calf price was similar, the top profit group devoted more of their labor to livestock production, had a larger herd size, and produced slightly larger calves. In addition to having a higher gross income per cow, the top profit group had a total cost per cow that was 34 percent lower than that of the bottom profit group. The largest differences in per cow costs, in absolute dollars, were for feed (\$71.47 difference), labor (\$54.41), and interest (\$45.81). It is important to note that the top profit group had a positive average profit per

cow of \$15.05 while the bottom profit group had an average loss of \$356.42 per cow. The results in table 1 (page 4) indicate that it was possible for individual operations to have a gross income and cost advantage over their competitors.

The figures discussed below are scatter graphs illustrating the relationship between different sets of variables for all 65 operations. The high-, mid-, and low-profit operations are identified with different symbols in all figures (red triangles represent operations in the bottom 1/3, blue squares represent operations in the middle 1/3, and green circles represent operations in the top 1/3). The correlation between the variables is reported in the figure title. Correlation is a statistical measure of how variables move together and is bounded by -1.0 and 1.0. A value of -1.0 would indicate the two variables move together perfectly, but in opposite directions, while a value of 1.0 indicates two variables move up and down together proportionally. Values close to zero indicate the two variables have little relationship to each other.

continued...see Beef Cow Profits on page 3

Figure 1. Profit versus Gross Income (correlation = 0.57)



Tally Time – Keeping Track of Energy

Sandy Johnson, livestock specialist

“You can’t manage what you don’t measure.”

Tally time is devoted to measuring things so that we can manage them. Measuring and managing takes time and too often things like feeding cows or moving hay seem more pressing. Two things that will be important to measure this year to ensure cow productivity and welfare through the winter will be body condition and forage quality. Producers have been encouraged to use these two measurements for a number of years and many do, or at least they intend to.

Energy is the nutrient we need to adjust upward for cold stress. Unfortunately this may be a bad year for energy content in forages because there were lots of hay fields that received rain between swathing and baling which results in lowered energy content. Feedstuffs with lower than normal energy values combined with more days of harsh winter weather can result in real problems for cows just trying to maintain condition and even more so for young and thin cows.

Table 1 shows the forage analysis from two fields of forage sorghum that were baled this summer. Field A received considerable rain between swathing and baling and its low TDN value is a result of the highly soluble (and digestible) carbohydrates being literally washed out of the forage before baling.

Table 1. Nutrient analysis of hay from 2 fields

Item	Field A	Field B
Dry Matter	76.2	71.3
Crude Protein	11.8	8.4
TDN	46.2	57.0
NEm	0.38	0.55
NEg	0.13	0.27

The KSU BRANDS ration balancing program was used to estimate cow performance when hay from each field was provided free choice to mature cows or 2-year olds during the last 90 days before calving. The sample from field B meets 98 percent of energy requirements of mature cows where as field A only meets 67 percent, with cows projected to lose over 2 pounds per day in body weight or 70 percent of one body condition score in 30 days.

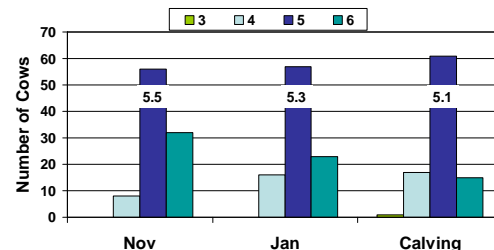
If energy is supplemented as 4 pounds of corn and fed with forage from field A, energy requirements are at 80 percent for mature cows and 73 percent for 2 yr-olds. The forage from field A is not a good match for the requirements of late pregnant or lactating cows. Finding out that the energy is this low by feeding rather than a forage test would result in increased feed costs and/or lowered weaning weights the following year from late calving cows.

Figure 1 shows actual body condition score data from late November to calving for a group of commercial cows last year. The group averaged a body condition score of 5.5 in November and declined to 5.1 by calving. An acceptable change for mature cows given their starting point. If the figure represented a group of replacement heifers, the goal would be a score of 5.5 to 6 at calving.

If you’ve been unsure about body condition scoring cows, the resources listed at the end of the article can help you review or learn. Or contact your local county extension agent for help.

If you won’t be running cows through the chute to assign individual scores, you can still write down scores for 10 to 20 cows (up to 30 for groups over 100 head) and average those for an estimate. If you aren’t comfortable with the 1 to 9 system, use thin, moderate and fat categories. If you are good with a camera, you could even take pictures to track body condition. What ever system gets you to record a repeatable measurement you can reference is better than only having it in your head.

Figure 1. Body condition score change in spring calving cows



A small investment in the time and money for forage samples can pay big dividends and reduce the probability of trying to play catch up at calving. Failure to have cows in good body condition at calving results in delayed rebreeding and later born and lighter calves the following year. If the typical forage analysis costs \$20, the increased weaning weight of one calf that is 21 days older would pay for the cost. Good risk management for a cow herd includes regular body condition scoring, forage analysis and ration balancing.

The links below may be helpful for review or to learn about condition scoring. Several are listed so you can look at multiple photos of cows at various scores. <http://beef.unl.edu/learningmodules.shtml> - still photos; <http://www.cowbcs.info/> - still photos and videos; <http://pubs.caes.uga.edu/caespubs/pubcd/B1308.htm> - descriptions and photos; <http://www.oces.okstate.edu/osage/4-h/commercial-cattle-grading/ANSI-3283.pdf>

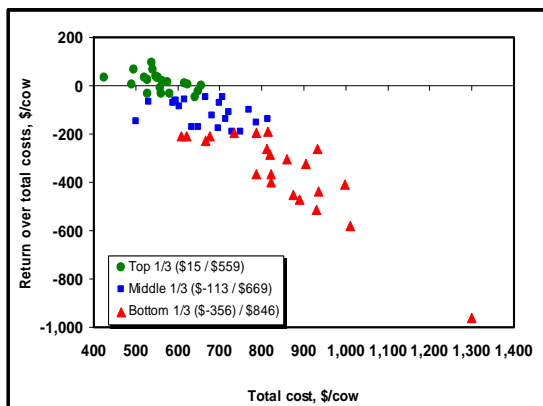


Beef Cow Profits continued from page 1

Profit and gross income were positively correlated as expected (figure 1; page 1) indicating that operations generating greater income tended to be more profitable. However, with a correlation of 0.57, clearly having high gross income did not guarantee high profit. Note that a number of the bottom 1/3 operations had high gross income. Likewise, some of the most profitable operations had moderate gross income levels.

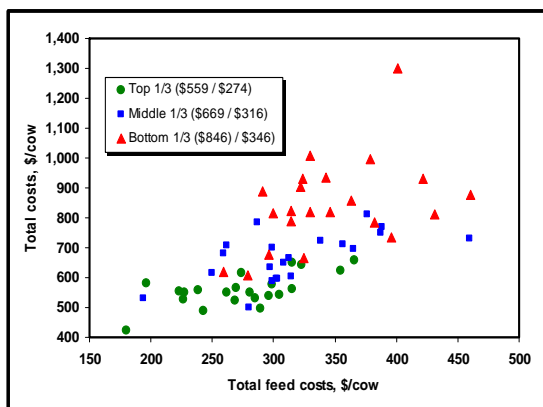
Figure 2 illustrates the relationship between total costs and profit. This relationship is negative as expected and very strong (correlation of -0.90). The strong negative correlation indicates that higher costs consistently led to lower profits. This result confirms what was shown in table 1 (page 4); the majority of the differences in profits were due to costs and not due to gross income.

Figure 2. Profit versus Total Cost (correlation = -0.90)



Given that cost management is so important, the next question is “*what drives differences in costs across operations?*” Figure 3 shows feed costs versus total costs. While feed costs represent almost half of the total costs, it is clear that other costs are important as some of the top

Figure 3. Total Cost versus Feed Costs (correlation = 0.64)



1/3 operations had higher feed costs than some of the bottom 1/3 operations.

As expected, higher labor costs per cow and higher depreciation and machinery costs per cow were also associated with higher total costs per cow (figures 4 and 5). Furthermore, the relationship between depreciation - machinery costs and total costs was quite strong (stronger even than feed costs). The relatively lower depreciation and machinery cost per cow experienced by some of the operations is likely related to economies of size, which will be discussed next.

Figure 4. Total Cost versus Labor Cost (correlation = 0.58)

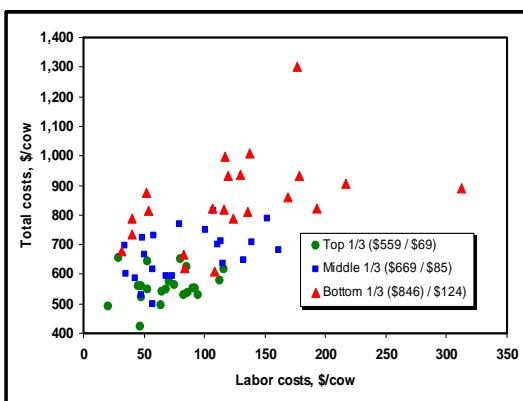
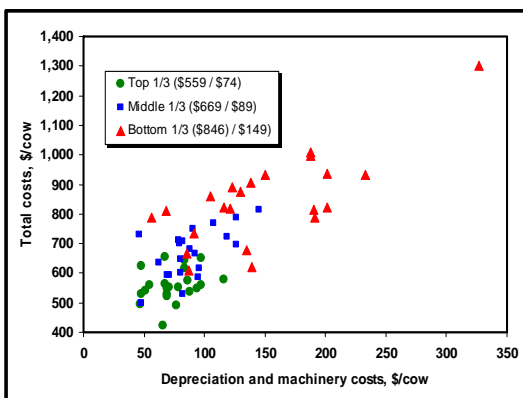


Figure 6 plots the total cost per cow against the number of cows in the herd. The negative relationship indicates that economies of size exist (i.e., producers with larger operations tend to have lower costs per cow). Though not illustrated, feed costs, labor costs, and depreciation and machinery costs per cow were also negatively related to the number of cows in the herd. Several points need to be made with

Figure 5. Total Cost versus Depreciation and Machinery Costs (correlation = 0.81)



“The majority of the differences in profits were due to costs and not due to gross income.”

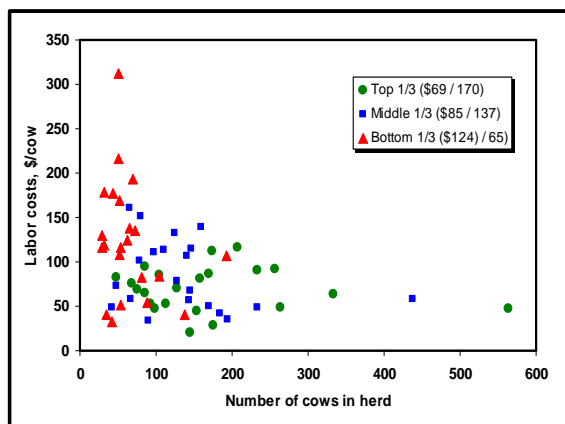
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“....
profitability differences between producers at a point in time are much larger than differences in average returns across time.”

Beef Cow Profits continued from page 3

regard to economies of size. First, there were only a few herds in this analysis with over 300 cows so we cannot say much about the costs for very large operations. That is, while it appears that costs decrease, on average, as herd size increases from 50

Figure 6. Total Cost versus Size of Herd (correlation = -0.48)



to 250 cows, we cannot say what they might be for herds with 1000+ cows. Second, there was a tremendous amount of variability in costs for a given herd size, which suggests that simply being a “large” operation does not guarantee one of having low costs. In other words, while economies of size exist on average, there are smaller operations that compete quite well with larger operations.

Gross income, total cost, feed cost, labor cost, and depreciation and machinery cost per cow were all significantly correlated with beef cow enterprise profitability. Economies of size were also evident. The results presented in this article emphasize the importance of maintaining good whole-farm and enterprise records. The complete summary of the research reported in this article (“Differences between high, medium, and low profit cow-calf producers”) is available online at: <http://www.agmanager.info/livestock/budgets/production/default.asp>.

Table 1. Beef Cow-calf Enterprise, 2004-2008 (min of 3 years)

	Profit Category*			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
	Head / \$	Head / \$	Head / \$		
Number of Farms	22	21	22		
Labor allocated to livestock, %	48.0	35.4	30.7		
Number of Cows in Herd	170	137	65	105	161%
Number of Calves Sold	156	129	58	97	168%
Weight of Calves Sold	591	584	573	18	3%
Calf Sales Price / Cwt	\$108.73	\$109.99	\$108.68	\$0.05	0%
Gross Income	\$573.90	\$555.38	\$489.33	\$84.56	17%
Feed	\$274.36	\$316.05	\$345.83	-\$71.47	-21%
Interest	\$94.09	\$117.00	\$139.90	-\$45.81	-33%
Vet Medicine / Drugs	\$15.85	\$15.73	\$15.54	\$0.30	2%
Livestock Marketing / Breeding	\$8.15	\$11.44	\$10.72	-\$2.56	-24%
Depreciation	\$26.36	\$25.28	\$59.51	-\$33.16	-56%
Machinery	\$47.71	\$63.34	\$88.99	-\$41.28	-46%
Labor	\$69.48	\$84.90	\$123.88	-\$54.41	-44%
Other	\$22.85	\$35.10	\$61.38	-\$38.53	-63%
Total Cost	\$558.84	\$668.84	\$845.75	-\$286.91	-34%
Net Return to Management	\$15.05	-\$113.46	-\$356.42	\$371.47	

* Sorted by Net Return to Management (Returns over Total Costs) per Cow

“Knowledge for Life”

The **Kansas Hay and Grazing Conference** will be held on Wednesday, January 13, 2010, at the Kansas Farm Bureau Building, 2627 KFB Plaza, Manhattan, Kansas. This is a public conference for anyone interested in livestock grazing, hay production/utilization or buying/selling of Kansas grass and hay. Keynote speaker for the conference is Dr. David Davis, University of Missouri-Columbia.

Registration fee (\$45.00 if pre-registered by January 6, 2010 or \$60.00 at the door) will include: 2010 membership in the Kansas Forage and Grassland Council, conference lunch and breaks, conference proceedings and a 2010 KFGC discount coupon book. For more information, contact Gary Kilgore or Karen Walters (620-431-1530; kwalters@ksu.edu).

Retained Ownership Webinar

There are still a lot of calves across the country that haven't left ranches yet and this year the markets offer a good opportunity for retained ownership of those calves. In the December 16, 2009 webinar, Drs. Darrell Mark and Galen Erickson, both with University of Nebraska, discuss the economic and management decisions associated with retained ownership of those calves, and the opportunities to place them in a commercial feedyard. The webinar archive is available at <http://beef.unl.edu/learning/retainedownership.shtml>.

Four State Beef Conference

Area cattlemen should mark the dates of January 12th (Lewis, IA & Tecumseh, NE) and 13th (King City, MO & Holton, KS) on their calendars and make plans to attend the 26th Annual 4-State Beef Conference. Speakers and their topics for the 2010 conference are as follows: Dr. Richard Randle, UNL— “Whole Herd Health: Common Health Problems”; Dr. KC Olson, KSU- “Mineral Nutrition”; Dr. Karl Harborth, KSU – “Factors Affecting Sale Barn Prices”; and Dr. John Lawrence, ISU – “Replacement Heifers: Buying vs Raising”.

More information is at <http://www.extension.iastate.edu/feci/4StBeef/> or contact Jody Holthaus (jholthau@ksu.edu; 785-364-4125).

Feeding the Cowherd for Maximum Profit School Set for Jan. 13 and 14

An intensive two-day school on Feeding the Cowherd for Maximum Profit will be held Jan. 13th and 14th, 2010 from 4 p.m. to 9 p.m. each day at the Colby Community Building in Colby, Kan. This hands-on program is designed to help producers refine their understanding of cow nutrition and find the most cost effective means to achieve optimal cow performance with today's rising feed costs.

Registration cost is \$145, which includes the book *Feeding the Cowherd for Maximum Profit* (an \$80 value), meals and refreshments. Class size is limited to the first 25 registered. Deadline for registration is Jan. 8, 2010. For more information contact Sandy Johnson, sandyj@ksu.edu, or Lori Fabian, lfabian@ksu.edu, 785-462-6281.

Plan to Protect Personal Interests

At this time of year, farmers and ranchers often make a New Year's resolution to review or begin plans to protect their business interests and assets. However, discussions and plans are often so complex and uncomfortable that some details are never addressed.

There are many items to consider and ongoing legislative changes will have significant impacts on estate taxes and health care issues. For example, under the Deficit Reduction Act of 2005, eligibility for care through Medicaid may be delayed by one month for every monetary gift over \$50.00 that is given to any person or organization in the prior five years.

One Hays attorney recommends taking several steps. Make a plan now that includes essential estate planning documents (a minimum of a will or trust), power of attorney for business decisions, power of attorney for health care decisions, and a living will. Consider needs for long term care to avoid pitfalls that could jeopardize the ability to find, get, and pay for good care. This might include self-pay, long term care insurance and/or Medicaid. Though earlier is better, it is never too late to plan to help yourself, your spouse and/or your children.

To learn more about planning to protect your personal and family interests, mark your calendar to attend Full Circle...An Aging Expo on Friday, April 23rd at the Colby United Methodist Church, Colby, KS. For more information contact Libby Curry, 785-462-6281 or lcurry@ksu.edu.