K-STATE Research and Extension

Beef Tips

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Upcoming Events

Range Beef Cow Symposium
Nov. 29-Dec. 1, 2011
Mitchell Event Center,
Mitchell, Neb
www.rangebeefcow.com
Early registration ends 11/20/11

Optimizing Cow Herd Resources
Dec. 13, 2011
Sylvan Grove, KS;
smolzahn@k-state.edu
Phillipsburg, KS
rboyle@k-state.edu

Kansas Junior Beef Producer Day
Jan. 7, 2012
Manhattan, KS
www.YouthLivestock.ksu.edu

Winter Ranch Management Seminar
Jan. 10, 2012
Multiple locations
See www.KSUbeef.org
for closest location

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Feed cost largest expense in custom calving

Sandy Johnson, livestock specialist and Kevin Dhuyvetter, farm management specialist

Drought is having a large impact on livestock producers because of the shortage of feed and forages. Cow/calf producers may be considering trying to find someone else that has ample feed resources to overwinter and calve out cows until they have sufficient forage to bring them back. The types of transitional arrangements can vary from feeding cows for 30 to 60 days to literally taking over a herd permanently. Developing a workable agreement for both parties takes some thought and discussion.

Let's consider a case where the owner wants to send cows to a different location to be fed and calved out. Points to be discussed between the parties include: 1) Current body condition of cows, desired condition at calving and when returned; 2) Ability of given feed resources to meet body condition targets; 3) Health program, veterinary services and medicine costs; 4) Tagging, castration, dehorning and branding; 5) Differences between locations in disease challenges and mineral needs; 6) Acceptable calf loss, abortion loss and cow death loss; and 7) Payment terms and contingencies. These various issues should be discussed prior to moving the cows. The other obvious point of negotiation is what is an appropriate level of compensation?

The charge for calving should consider if they are cows or heifers. On a per head basis, calving heifers is generally worth $5 to $10 more than cows. The range of charges from two reports indicated $20 to $50 per live calf. Determine if the rate is to be based on a live calf at birth, at pasture turn-out, weaning or some other time point. Consider incorporating an incentive payment (e.g., $5 per calf) for each calf at delivery. Cow condition and the health program of cows received will impact calf health and survival.

When estimating compensation for cow care, the basic premise is that the caretaker should receive a reasonable return for the resources they provide. While what is reasonable for some resources might be relatively obvious, others are more difficult to value. It is recommended that feed should be priced at its opportunity cost (i.e., what it could be sold for) as opposed to its cost of production. The owner of the cows may request information on nutrient content of intended feedstuffs to ensure desired performance.

The most challenging part to price for this example is the yardage associated with non-feed costs such as labor, utilities, fuel, machinery and building maintenance, repair, and depreciation. Keep in mind that by body weight mature cows will require roughly twice the space (and yardage cost) of a 700 pound calf. Table 1 (page 3) shows an example of how both feed and non-feed costs might be summarized to determine a compensation rate for wintering and calving out calves.

Feed costs (Part A) are based on daily feed requirements times an average market price. Part B in the table shows estimated costs on a per head basis. Costs that fit this category might be things like vaccinations, veterinary charges and hauling costs but are left blank as these costs are assumed to be paid by the cattle owner as opposed to the caretaker. Part C includes costs that are estimated on a per day basis for the entire group such as labor, equipment and fuel use. In the example provided in the table, the caretaker estimates it will take an average of one hour per day of additional labor for each day in the 120-day period and that a tractor will be used for feeding for about a third of this time. The

continued...see Custom Calving on page 3

"You can't manage what you don't measure."

Tally Time – Monitoring heifer development

Sandy Johnson, livestock specialist

Rations delivered in a dry lot setting have been commonly used to assure sufficient gains for heifers to achieve puberty and conceive at 14 to 16 months of age. Historically, recommendations have been to have heifers reach 60 to 65 percent of their mature body weight prior to breeding. As weaning weights and growth rates of cattle have improved over time, that target has become relatively easy to achieve, especially in a feedlot setting. From time to time there were reports of heifers that were artificially inseminated in a feedlot setting that apparently stopped cycling after they went to pasture. Generally there were no data to sort out possible problems. Now we may have a better understanding of what happens to heifer gain when taking feedlot developed replacement heifers to pasture.

Let's consider the performance of one group of heifers receiving a sorghum silage based diet. Heifers averaged 522 pounds at weaning and gained 1.1 pounds per day for the first 30 days post weaning. The next weight was taken in February when heifers averaged 774 pounds and had gained 2.2 pounds per day. To reach 60 percent of a mature weight of 1325 pounds by the end of April, heifers only needed to gain 20 pounds more. Three weeks prior to breeding, heifers weighed 865 pounds and averaged a body condition score of 7. From weaning to breeding, heifers gained 2 pounds per day whereas 1.4 pounds per day would have achieved a target weight of 60 percent. In more recent research, target weights for heifers as low as 53 percent have been successful, which would have required only 0.9 pounds per day of gain.

Yearling operations rough cattle through the winter and take advantage of compensatory gains when these calves are turned out on spring grass. While weights and condition of these heifers were not recorded after turnout, experience says the most likely outcome was a loss of condition on grass. Pregnancy rate to AI for these heifers was only 45 percent, lower than expected. Included on the list of possible reasons why AI pregnancy rate was not higher was the change in diet when the heifers went to pasture shortly after AI. Nutritional stress around the time of breeding has been shown to be detrimental. Heifers that were provided 85 percent of energy and protein requirements had reduced embryonic development on day 3 and 8 compared to those that received 100 percent of requirements.

We know that grazing is a learned behavior and when exposed to novel feedstuffs, young livestock will consume small amounts and increase consumption if no negative effects occur. Considerably more time and energy may be spent foraging when animals are introduced to novel foods. Since these heifers had been in the feedlot from weaning until turnout after AI, they may not have consumed enough forage in the early days after turnout, resulting in some embryonic loss.

A South Dakota study (Perry and co-workers) originally designed to compare early weaned heifers developed on range from weaning to breeding to heifers weaned at a traditional age and developed in the feedlot, showed a large difference in gain the first month heifers were on native range as yearlings. The first 30 days on spring pasture, heifers that had been developed on range over the winter gained 2 pounds per day while the feedlot developed heifers only gained 0.3 pounds per day. Average daily gain for the remainder of the grazing season was not different.

Two additional studies by Perry and coworkers were developed to look at heifer performance when turned out on spring grass. In one study, feedlot developed heifers were moved to pasture after an AI program and half received a supplement (5 lbs/hd/day DDGS) the first 30 days on pasture. Unsupplemented heifers lost 37 pounds and supplemented heifers gained 45 pounds when forage quantity was not limiting. Pregnancy rate to AI was higher in the supplemented group.

A study done in two replicates compared feedlot developed heifers that grazed for 30 days prior to AI to heifers that remained in the feedlot through AI. Immediately after AI, all heifers grazed the same pasture. Gain for 35 days post AI was higher or tended to be higher for heifers that grazed prior to AI compared to those that remained in the feedlot. Pregnancy rate to AI was numerically higher for heifers that had grazing experience prior to AI but more observations are needed to conclude this reproductive response could be expected consistently.

These studies indicate performance of yearling heifers the first month on grass may be improved by previous grazing experience or supplementation. Avoiding nutritional stress during the breeding season may reduce embryonic loss and increase the number of early pregnancies. Over-conditioned heifers are expensive to produce and are not positioned to take advantage of spring grass. Weighing heifers at the beginning of the development phase is the first step in achieving targeted gains. Monitoring gains at least twice before breeding should allow time for adjustments to be made.

Custom Calving …. *continued from page 1*

tractor is assumed to burn 10 gallons of fuel per hour which works out to an average of 3.33 gallons per day. Part D of the table includes those costs that are simply entered as total dollars for the feeding period and includes things such as utilities, repairs, and depreciation and interest on facilities. These costs can be difficult to estimate because of their "fixed cost" nature and because caretakers may be using facilities for cows of their own in addition to those they are taking in. The values in the table simply represent an example of what values could be, but they will vary between operations based on the type of facilities being used.

In the example provided in the table, the costs are estimated at $3.34 per cow per day, which is comprised of $2.34 for feed (70.1%) and $1.00 (29.9%) being yardage type expenses. It is important to remember that the values in the table are provided as an example of how costs might be estimated as opposed to suggesting what rates should or will be in specific situations.

Producers with the luxury of extra feed and labor resources may be able to help producers in drought areas with wintering cows. The guidelines presented here and the spreadsheet shown in Table 1 (Cow Wintering Costs; available for download on www.agmanager.info – click on "Decision Tools" and then "Livestock") can be used to develop an equitable plan for both parties (at this page there is also an Extension bulletin and Excel spreadsheet pertaining to leasing beef cows).

"The charge for calving should consider if they are cows or heifers."

Table 1. Estimated costs of wintering and calving out cows

Number of Cows cared for	50					
Total days of care	120					
A. Feed Inputs	lbs/hd/day	price, $/lb	$/hd/day	Total/hd for period	Total for herd	Percent of total
Cane hay[1]	31.00	$0.0650	$2.02	$241.80	$12,090	60.3%
DDGS[2]	2.50	$0.1150	$0.29	$34.50	$1,725	8.6%
Mineral	0.15	$0.2500	$0.04	$4.50	$225	1.1%
xxx	0					
xxx	0					
Sub-total	33.65	$.0695	$2.34	$280.80	$14,040	70.1%
B. Per head inputs	units/head	price, $/unit				
Vet, medicine	0					
Hauling	0					
xxx	0					
Sub-total			0	0	0	0
C. Per day inputs	units/day	price, $/unit				
Labor	1.00	$15.00	$0.30	$36.00	$1,800	9.0%
Tractor[3]	0.33	$35.00	$0.23	$28.00	$1,400	7.0%
Diesel fuel	3.33	$3.25	$0.22	$26.00	$1,300	6.5%
Sub-total			$0.75	$90.00	$4,500	22.5%
D. Per period inputs	units	price, $/unit				
Utilities	1	$250.00	$0.04	$5.00	$250	1.2%
Facility repairs	1	$250.00	$0.04	$5.00	$250	1.2%
Facility dep & int	1	$1,000.00	$0.17	$20.00	$1,00	5.0%
Sub-total			$0.25	$30.00	$1,500	7.5%
Total			**$3.34**	**$400.80**	**$20,040**	**100.0%**

[1] Based on 30 lbs for 60 days pre-calving and 32 lbs for 60 days post-calving

[2] Based on 1 lb for 60 days pre-calving and 4 lbs for 60 days post-calving

[3] Tractor is assumed to be used for 1/3 of the total hours

Consider both energy and protein during drought supplementation

Justin Waggoner, beef systems specialist

"One of the easiest ways to reduce hay waste is to feed hay more frequently in smaller amounts."

Traditionally, when cow-herd supplementation is discussed we focus on meeting the protein needs of the cow, with goal of maximizing forage intake by supplementing protein, the most limiting nutrient in the available forages. However, this year drought has severely limited the supply of both grazed and harvested forages in many regions. In this scenario both energy and protein are limiting cow performance and therefore, supplements should be evaluated on both their energy and protein contributions to the nutrition program. When evaluating potential feedstuffs as supplements consider both the cost per unit of energy (TDN, net energy maintenance or metabolizable energy) and of crude protein.

The major concern regarding energy supplementation in a non-drought situation, when forage supply is adequate is the "substitution effect"; essentially the energy supplement (starch or grain-based) reduces grazed forage intake which compromises overall energy balance. Under non-drought conditions, fiber-based as opposed to starch-based energy sources are recommended. However, in a drought situation when forage supply is critically low, meeting the energy requirements of the cow using the most economical feedstuffs available (cost per unit of energy basis) is our first priority and the source of supplemental energy (fiber vs. starch) is of less importance.

If a commercially blended supplement is used (e.g. range cubes), consider the inclusion of an ionophore. The use of ionophores (Rumensin and Bovatec) has become a standard practice in growing cattle diets. Rumensin is the only product approved for use in mature beef cows and must be delivered in at least 1.0 pounds of feed per day. Research conducted with cows indicates that cows fed 200 mg/d of monensin (Rumensin) required 5 to 10 percent less feed to maintain the same weight and body condition as cows that did not receive Rumensin.

During a drought situation, non-traditional grazing opportunities often present themselves. The high price of forages often makes baling look attractive, However, in almost every, if not every situation, grazing forages presents a lower cost alternative to haying. There are a number of different opportunities that may be available (grazing re-growth in wheat stubble, failed corn, milo, soybeans, etc). However, some of these grazing opportunities may carry risk (nitrates). If you have questions regarding any of these non-traditional grazing opportunities consult your local K-State Extension professional.

If pastures are commonly rotated during the grazing season, another option that some producers may want to consider is to re-graze pastures previously grazed once forage has become dormant. The objective is to encourage cattle to graze under-utilized areas of pastures that were not previously utilized efficiently by the cattle. Consider mineral placement or placing supplements in these areas to encourage grazing behavior. Pastures must be evaluated frequently to assess the amount of available forage, and over-grazing should be avoided to minimize long-term effects on the pasture.

Most producers will be relying heavily on harvested forages this fall and winter. Forage prices have increased considerably this year and as forage prices go up the economic value associated with hay waste also increases. One of the easiest ways to reduce hay waste is to feed hay more frequently in smaller amounts (i.e. delivering hay daily versus one time per week). This concept applies regardless of whether hay is rolled out on the ground or fed in feeders.

There is no easy way to manage through a drought. Some of the key elements to successfully managing a cattle operation through a drought are managing number of head per day, evaluating both short and long term outcomes associated with decisions and not being afraid to think outside the box. Thankfully drought is not the norm and resides outside the box.

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Body condition score now or get behind on nutrition later

Chris Reinhardt, beef specialist

Knowledge for Life

Body condition score (**BCS**) on a beef cow is the closest thing we have to a dip stick for determining, at a glance, her nutritional status. But scoring cows properly and really benefitting from this tool requires a bit more effort and observation than simply looking and thinking, "They look a little thin". Body condition at the time of calving will affect the health of the calf and the ability of the cow to breed back in a timely manner. The reason for talking about BCS *now* is that there's still time to adjust nutrient supply to get the cows into the target BCS by calving time.

Body condition scores are assigned on a scale of 1 (extremely thin) to 9 (obese). To properly evaluate an individual cow, you should look at her topline, brisket, ribs, flank, round, and tail head. A borderline thin cow (BCS = 4) will clearly show 3 to 4 ribs first thing in the morning, will have no obvious fat deposits in the brisket or tailhead, and you can see the individual vertebrae along the topline. The cow still shows some muscle through the round, and you could say she looks "healthy but thin". In a borderline fleshy cow (BCS = 6) the ribs and vertebrae will not be obvious, as they are covered by fat. The muscling down through the round will be plump and full, but muscle definition is still apparent, and there will be small but noticeable fat deposits behind the shoulder, in the flank, brisket, and around the tailhead. The "ideal" or "target" BCS for cows at the time of calving is the BCS = 5. This cow will show the last 1 to 2 ribs first thing in the morning before feeding, have good fullness of muscle in the round with definite muscle definition, the spine will be apparent but individual vertebrae will not be discernible, and there are no obvious fat deposits behind the shoulder or around the tailhead. We would say this cow has a good "bloom".

A change in BCS (from BCS 4 to 5, for example) requires the addition of 75 to 100 pounds of live body weight, depending on the mature size or frame size of the cows. If you are two months from the start of calving and would like to add 0.5 to 1.0 BCS, you'll need to feed the cows for : 1) maintenance; 2) fetal growth; and 3) gain of an additional 1.0 to 1.5 pounds per day. This means increasing the amount of good quality hay as well as the amount of supplement. Thin cows (BCS 4 or below) can be separated off and fed a higher plane of nutrition. The argument can be made that this creates "welfare cows". However, good record-keeping will indicate whether these cows are perennial "hard-keepers" or if they are simply too young or too old to compete with the mature cows. If they're too young, another year of maturity should cure this; if they're too old, you may consider culling them after weaning time. The key here is that good record keeping allows *YOU* to cull intentionally based on productivity, not based on lack of observation and management.

If you can have cows at a BCS 5 at the time of calving the cows should provide adequate colostrum and nutrition for their calf and breed back in a timely fashion. Cows which calve below a BCS 5 will delay their return to estrus and breed back late. If these cows do not maintain a 365-day calving cycle, they could after 1 to 2 late breedings effectively "cull themselves" due to being open at preg check time. Young cows are especially susceptible to this possibility because they are gestating a calf, nursing a calf, and still growing frame and muscle themselves. Unfortunately, young cows are the future of your herd and possibly your most progressive genetics. Hopefully these cows aren't culled simply for lack of nutrients.

Body condition scoring the herd is a simple process, and can be done on a large paper tablet. Make columns for BCS 3, 4, 5, and 6 and as you pass through the herd first thing in the morning, make a tick mark for each cow in each of the columns. Multiply the number of 3's by 3, the 4's by 4, etc., add up the total score and divide by the total number of tick marks. This should give you an average BCS for the herd. But more important than the average is how many cows you've got in the critical scores of 3 and 4. 4's can be easily fed into the 5 range, but 3's could potentially not cycle in time to stay in the herd. If 3's can be fed up into the 4-range, they'll at least have a chance to breed, albeit late during the normal breeding season.

Take a little time to truly, critically evaluate the nutrient status of your cow herd this winter, and use this simple, but powerful tool to manage the fertility and health of your herd going into next spring, and give yourself full control over the genetics of your herd for years to come.

"The reason for talking about BCS now is that there's still time to adjust nutrient supply to get the cows into the target BCS by calving time."