

SISKIYOU STOCKMAN

What's New in the "Top of the State". A report for Siskiyou Livestock Producers put out by the Farm Advisors Office, Cooperative Extension of the University of California, located at 1655 South Main Street, Yreka, California 96097

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Smaller cows or fewer cows?

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- Smaller cows or fewer cows
- Upcoming meetings and events
- Red Books Available

Calendar

Nov 8	Annual Siskiyou County Cattleman's Fall Dinner, Yreka, CA 6:30 p.m.
Nov 19 – 21	California Cattlemen's Association Annual Meeting, Reno, NV
Nov 24	Shasta All Breeds Bull Sale, Cottonwood, CA
Dec 2 -4	California Alfalfa and Forage Symposium, San Diego, CA
Dec 7 – 10	Farm Bureau Annual Meeting, Burlingame, CA
Jan 9	Special Siskiyou County Feeder Sale, Cottonwood, CA

A hot topic among beef producers is the methods to reduce feed demands and costs. Cost of feed has risen dramatically, drought has reduced feed supply as well as restricted irrigation water supply, and generally land for cattle feed has shrunk over the years. Some producers desire increased amounts of forage for their weaned calves to raise their selling weights in response to predicted demand for heavier in-weights for feedlots. One approach to creating more feed for weaned calves when feed is restricted is to reduce feed demands for cows. Others want more forage to convert into hay for the high hay market. With current conditions a reasonable response by beef producers is to consider reducing herd size so less feed is required, or raising smaller cows that require less feed. Each option has different outcomes and consequences. We have made some comparisons of those options to demonstrate the differences.

For our comparisons, we use a herd of 100 cows and only a small difference between cow size; mature weights of 1,100 or 1,200 pounds. We are not suggesting that 1,100 or 1,200 pounds is the ideal cow size. We are looking at a difference in size, in this example 100 pounds. Producers may want to weigh a few cows to

determine their actual weight. We are only comparing cow size so in this example milk production is the same for all the cows. Cows of 1,100 pounds mature weight will consume between 70 and 100 pounds less dry matter feed each month (NRC, 2000) than 1,200 pound cows of equal milk production (Figure 1).

Annually the smaller cow will consume about 1,192 pounds less of hay equivalent feed. The required quality of the feed is the same since they both produce the same amount of milk. The amount of feed consumed varies due to their size differences.

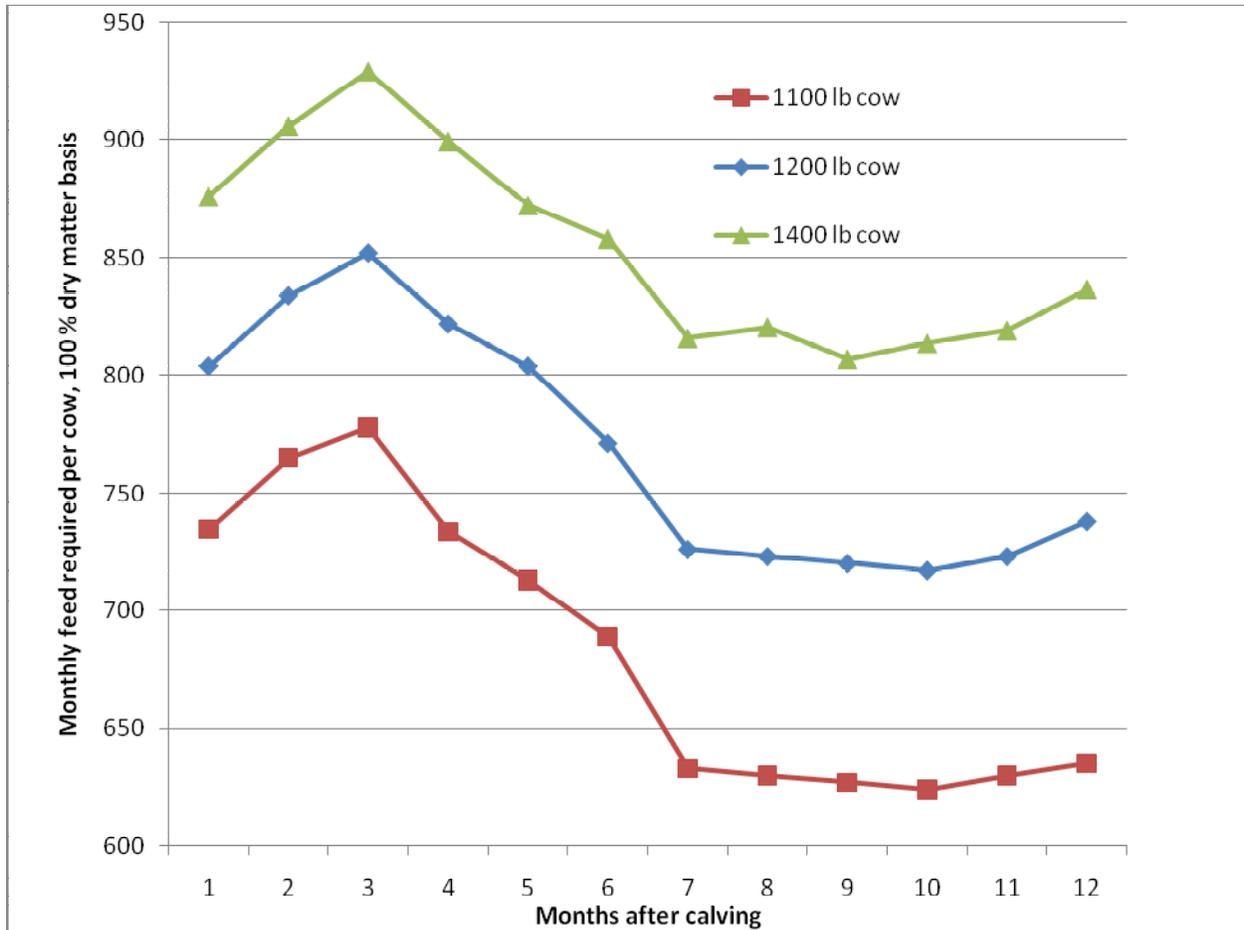


Figure 1. Comparison of the monthly feed requirements (shown on a 100 percent dry matter basis) for cows of 3 different mature weights but the same milk yield.

The cost of feed varies throughout the year depending on source but for this example we can estimate the annual average cost at the hay equivalent of \$80 per ton (this would be a mixture of pasture and supplement). Therefore the 1,100 pound cow will consume about 1,192 pounds less feed, costing \$48 less e.g. $(\$80/2000) \times 1190 = \47.69 (Table 1). For a herd size of 100, the smaller cows require about 60 tons less hay equivalent feed and at \$80/ton

basis about \$4,768 dollars less in feed. Specific dollar values will vary.

If instead of reducing cow size we wanted to reduce the *herd* size (keeping the same size cows), but we wanted to reduce the feed level to the same feed level as smaller cows, we would need to reduce to about 88 cows (88.42 cows). A herd size of about 88 head of 1,200 pound cows would require about the same amount of feed as 100 cows of 1,100 pound (Table 1).

Table 1. Feed, feed costs and income from simulations of 1,100 pound, 1,200 pound herds of 100 head or 1,200 pound cows (88 head) eating the same amount of feed as 100 head of 1,100 pound cows. Feed requirements based on NRC, 2000.

	1,100 pound cow, 100 head	1,200 pound cow, 100 head	1,200 pound cow, 88.42 head	Difference between 1,100 & 1,200	Difference between 1,200 cows; 100 or 88 head
Total annual feed dry matter basis, lbs./cow	8,191	9,264	9,264	-1073	
Total annual feed on hay equivalent basis, lbs./cow	9,101	10,293	10,293	-1192	
Total annual feed cost/cow @ \$80 basis	\$ 364	\$ 412	\$ 412	\$ (47.69)	
Feed required for the herd (hay equivalent basis)	910,111	1,029,333	910,137	-119,222	-119,197
Feed costs for the herd (size as indicated)	\$ 36,404	\$ 41,173	\$ 36,405	\$ (4,769)	\$ (4,768)
Estimated 9 month weaning wt of steers, lbs/hd	655	682	682	-27	0
Number of steers sold	45	45	39.789	0	-5.2
Number of heifers sold	38.25	38.25	33.82065	0	-4.4
Total \$ from steers	\$ 32,423	\$ 33,759	\$ 29,850	\$ (1,337)	\$ (3,909)
Total \$ from heifers	\$ 24,298	\$ 25,383	\$ 22,443	\$ (1,084)	\$ (2,939)
Total calf sales	\$ 56,721	\$ 59,142	\$ 52,293	\$ (2,421)	\$ (6,849)
Total sales minus feed costs	\$ 20,316	\$ 17,968	\$ 15,888	\$ 2,348	\$ (2,081)

Perhaps the first and most obvious consequence of this type of change would be lighter weaning weights or fewer calves sold. Smaller cows with similar milk production and muscling to heavier cows will generally be smaller frame size and wean a smaller calf. This can be estimated (NRC, 2000) and for our purposes steers calves at 9 months of age are estimated weighing 655 for 1,100 pound cows and 682 for 1,200 pound cows are used. The difference is 27 pounds. We can calculate the weight of sale calves and income based on a 90 percent calf crop and \$1.10 per pound sale price, 50 percent heifers at 5 cents discount, 50 pound lighter weaning weight for heifers and 15 percent replacement heifer retention rate. Based on these estimates changing to smaller cows shows an increase in income over feed cost of about \$2,348, while changing to a smaller herd is almost the opposite with a reduction of about \$2,000 annually (Table 1).

The most sensitive value in this example is the estimated weaning weight of the calves. If the difference in weaning weight of calves between

the smaller and larger cows was about 50 pounds instead of 27 (as used in the example), then smaller cows would be about equal in economic returns.

The smaller herd size with the same size cow *would* be a reduction in income over feed costs but income would decline more than the reduction in feed costs. The smaller herd size is probably not as deleterious as shown here because other costs that are “per head based” would likely decline and could account for the roughly \$20 per head difference.

Based on these estimates it would appear that smaller cows offer some potential for reducing feed costs while not significantly lowering income. There are some other un-intended consequences and additional alternatives. Mature cows of 1,200 pound size generally have finished steer calves of about 1,180 pounds. If the dressing percent is 61 percent then the carcass weights would be about 720 pounds. This is a desirable carcass weight. Cows of

about 1,100 pounds would be expected to produce steer calves finished at 1,050 pounds and a carcass weight of 640, which is on the light side. There could be price discounting, which could easily wipe-out any feed cost savings: the proverbial rock and hard place.

There is a relatively simple solution to this dilemma: a way to have reduced feed costs while still producing ideal size market animals. It is much simpler than recording data for age and source verification. Breed the mature cows to a larger frame size bull to produce intermediate frame size calves that will have the desired carcass weight. Producers could also use EPDs for growth and carcass traits to select bulls for growth and larger carcass traits for this specific breeding scheme (terminal sires). Another alternative might be to use a different bull breed for these terminal crosses; for example, Charolais bulls on adult English-breed type cows. Always sell all of these calves, steers and heifers. Only use the growth-type (larger frame size) bulls on mature cows that have grown out to avoid calving problems and **don't use much larger** bulls. Note that feed use will be slightly higher for these cows (stimulated to produce more milk by larger calves), and actual forage intake by the larger calves before weaning. Use younger females to develop replacement heifers. These will be bred to bulls to produce replacements that grow into adults with mature size of 1,100 pounds.

Producers often don't have control over feed costs nor the desired carcass weight. But they do have control over breeding decisions. There are good cattle in all breeds of varying mature size. Using this type of system, called terminal sires, requires discipline, self-confidence and long range planning. But it is something that can pro-actively be accomplished. In many cases younger females are already being bred to different bulls than mature adults. A terminal sire system would just make those breeding plans more specific. From this example, smaller cows clearly reduce feed costs, but may have reductions in sales that wipe-out any gains. A terminal sire program could allow smaller cows, for feed savings while still for most of the herd, production of highly desired calves.

The root of the feed cost issue is animal maintenance expenditures. Some producers have attempted to select for improved cow efficiency by comparing the cows output (the calf weight) to her own weight. Her own weight reflecting the amount of feed required. This ratio has been shown to be no better than selecting for weaning weight alone for improving efficiency.

Actual feed intake and feed efficiency has been examined in more detail with the advent of computer assisted feeding stations. Research has shown that a series of measurements can be made to calculate a residual feed intake, RFI. This value is defined as the actual feed intake minus the expected feed intake and may be a better value than feed to gain ratio or conversion. RFI is more independent of growth rate, size and maturity of the animals. Australia and Canada have been using RFI, while it is just beginning to be used in the U.S. In the coming years, there may be opportunities to improve efficiency by selection using RFI. RFI could be used in conjunction with smaller cows to find those animals that are inherently more efficient in the use of nutrients.

Historically, when feed conditions are not limiting, larger cow mature size has generally been more profitable. More recently conditions have changed and feed conditions seem to be trending more and more towards limitations that may be conducive to smaller cow size. This must be balanced with the demands from others in the beef production chain that tend to favor larger carcasses. During tough times producers can also take a good look at problem cows. It is always a good time to remove cows that may have at best only a hope of raising a calf or that favorite cow that needed to be shipped 2 years ago.

Upcoming meetings and events

Opportunities to meet with fellow livestock producers and agriculturalists are upcoming. Several events are occurring over the several months.

1. **Annual Fall Dinner.** Locally, the Siskiyou County Cattlemen's and CattleWomen have their fall dinner November 8 at the Yreka Community Center. Special entertainment, a ventriloquist, is featured and is sure to brighten the program. For reservations contact Cliff Munson 598-6166, Matt Parker 520-2337 or Joe Sammis 397-3456.
2. **California Cattlemen's Association Annual Meeting.** November 19 – Nov 21, Reno, NV.
3. **Shasta All Breeds Bull Sale.** November 24, Cottonwood, CA.
4. **California Alfalfa and Forage Symposium,** Dec 2 – 4, San Diego, CA.
5. **California Farm Bureau Federation Annual Meeting.** Dec 7 – 10, Burlingame, CA.
6. **Special Siskiyou County Feeder Sale,** Jan 9, Cottonwood, CA.

Red Books Available

Popular "Red Books" are available at the Farm Advisors Office in Yreka for \$5 each including tax.

This is your copy of the Siskiyou Stockman, which you requested, or which we thought would be of interest to you.

Sincerely,



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