



Ridin' Herd

► by **Rick Rasby**, Extension beef specialist, University of Nebraska

Will flushing solve nutrition woes?

With breeding season just around the corner for spring-calving herds, producers will soon find out how well their nutrition program was for the cow herd, especially for the young females. Because young females are lactating for the first time, repairing their reproductive tracts and still growing, their postpartum intervals — the time from calving to first estrus or ovulation postcalving — are at least 10-15 days longer than that of mature cows. Quality of the diet both before and after calving is critical to minimize the postpartum interval.

Don't feed them to fail

If these young females have insufficient nutrient intake before calving or experience some dystocia at calving, the postpartum interval will be extended.

I've heard it said that one way to avoid calving difficulty in young females is not to feed them adequately before calving. Data would suggest that undernutrition to first-calf heifers before calving has very little effect

on calf birth weight (assuming the heifer was bred to a calving-ease bull), dystocia score or percentage of females needing assistance.

However, females underfed to calve in low body condition [body condition score (BCS) of 4 or lower] had significantly lower reproductive rates in their second breeding season compared to those fed to be in adequate body condition (BCS 5.5-6).

Instead of starving calving difficulty out of

these females, they were fed to fail in their subsequent breeding season.

Flushing beef cattle

Flushing is a management term for providing high-quality feeds, usually grains, prior to the start of the breeding season to increase reproductive performance. Flushing has been used in the swine industry to increase the number of ovulations in sows. Can this concept be applied to young beef females that calve in less-than-adequate body condition?

David Lalman at Oklahoma State University (OSU) conducted research investigating the effect of changing body condition after calving on pregnancy rate in first-calf cows (see Fig. 1). As expected, young females calving in a BCS of less than 5 (green line) and maintaining that BCS through 12 weeks postcalving had the lowest pregnancy rates.

Heifers calving in a BCS of less than 5 (black line) then fed increased energy postcalving achieved a pregnancy rate of 66%, which is well below an acceptable rebreeding rate for females during their second breeding season. Note that this treatment would be somewhat like flushing the female, because there is a substantial increase in weight gain.

Interesting in this data set is that heifers calving in a BCS greater than 5 and fed extra energy after calving (red line) had a pregnancy rate only three percentage units higher than heifers calving in a similar BCS and fed to maintain weight postcalving (94% vs. 91% pregnancy rate).

Can increasing the energy level to young females after calving affect the postpartum interval? Table 1 illustrates the effect of increasing body condition postcalving on the postpartum interval of first-calf females.

Again, to gain body condition after calving, a substantial amount of energy needs to be added to the diet. If heifers calve in a BCS 4 and experience no change in BCS postcalving, the postpartum interval is about 131 days. If they calve in a BCS of 5 and BCS does not change, the postpartum interval is 103 days. If they calve in a BCS of 5.5 with no change postcalving in BCS, the postpartum interval is 89 days.

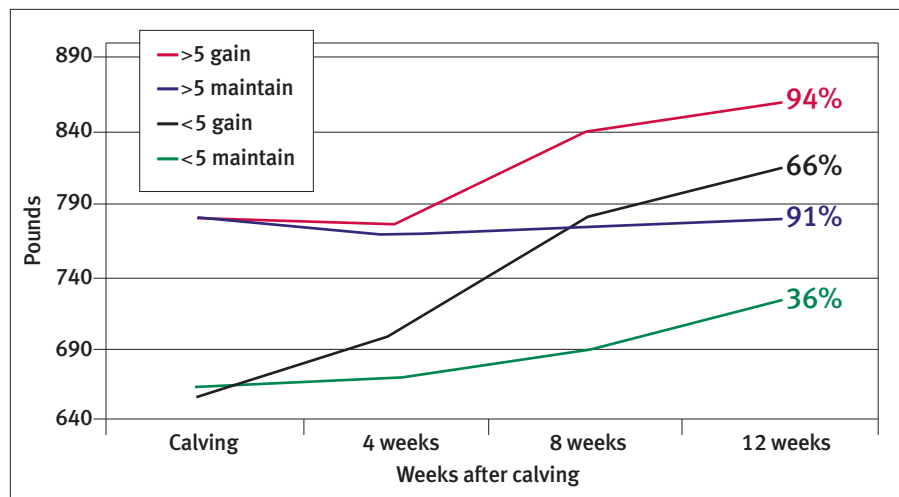
To maintain a 365-day calving interval, cows must become pregnant 80-85 days after

Table 1: Number of days from calving to first heat, first-calf cows

Condition score at calving	Condition score change after calving to Day 90						
	-1	-0.5	0	0.5	1	1.5	2
3	189	173	160	150	143	139	139
4	161	145	131	121	115	111	111
5	133	116	103	93	86	83	82
5.5	118	102	89	79	72	69	66

Source: Lalman et al., 1997

Fig. 1: Heifer weights at and after calving and pregnancy rate



calving. (Gestation length is about 283 days for beef cows and 275-280 days for heifers.) If first-calf cows calve in a BCS of 5.5, they have an opportunity for a 365-day calving interval.

The difference in the postpartum interval for a first-calf cow that calves at a BCS 4 with no change in BCS, and for one that calves at a BCS 5 with no change is 28 days. If she calves in a BCS 5.5, the difference in postpartum interval is 42 days. If she calves in a BCS 4 and BCS increases one condition score — which would be quite a feat after calving for March-calving heifers — postpartum interval is reduced only 16 days and she still doesn't come close to maintaining a 365-day calving interval.

Some would say all they want for the first-calf cow is to get her rebred with her second calf. To a certain extent, I would agree. But give her a chance to have a reasonable postpartum interval and ensure that she cycles before the end of a defined breeding season.

Postcalving management effects on young beef females

OSU researchers reviewed 53 reports published from 1970 to 2004 on the effect of postcalving nutrition and management in heifers calved first at 2 years of age. The review indicated that pregnancy rates are

similar in both first-calving and older females, but that longer postpartum intervals to first estrus and decreased pregnancy rates are common in rebreeding first-calvers. So, higher nutrition and management are required if acceptable performance is to be realized from rebreeding 2-year-olds.

Dietary energy restriction has the opposite effect on those two responses, regardless of age or parity. In the review, neither dietary fat nor undegraded intake protein (UIP) supplementation consistently improved reproduction in first-calf cows.

The greatest positive effect on rebreeding was realized from managing for body condition before calving, so that the cows calved in adequate body condition (BCS 5.5 to 6.0) and were provided adequate nutrition to minimize loss of condition and body weight after calving. The authors noted that positive effects from good management must be balanced against any corresponding costs. (Prof. Ani. Sci. 21:151)

There is one study I know of where there was a “flushing” effect on cows. The key word here is *cows*. Cows that were thin after calving and slightly underfed until 14 days before the start of the breeding season, then fed a high-energy diet until 30 days into the breeding season responded with enhanced reproductive performance. The “flush” diet

consisted of 8.8 pounds (lb.) to 13.2 lb. of ground corn per head per day and free-choice corn silage.

Final thoughts

For young beef females, feeding to adequate body condition before calving is more effective than trying to feed to gain body condition after calving. Playing catch-up after calving is usually expensive and not practical.

There is data that indicates 70% of the supplemental energy fed postcalving is partitioned to milk production. So instead of increasing BCS, milk production is enhanced. Bottom line, flush the “flushing” concept when it comes to nutritional management of young beef females. Manage for body condition before calving and work to maintain BCS postcalving.



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Editor's Note: “*Ridin' Herd*” is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.