LOW COST COW/CALF PROGRAM

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BCS & Gaining Weight

It is almost daily that we receive inquiries concerning successful rebreeding after calving. Our pat answer is optimal BCS at calving and that the cows be gaining weight (over and above the weight of the products of conceptus) through the calving period. Optimal BCS is determined by the time of the year that you calve and your location (latitude). As for timing, the cow that calves closest to the longest day of the year has the shortest postpartum interval (PPI) to first estrus. Conception is considerably higher when breeding during the third cycle than the first or second cycles. With a short PPI, 40 days or less, the cow has the opportunity to experience two cycles prior to breeding on her third. Calving in late June and early July (northern hemisphere) allows for a lower BCS than when calving at any other time of the year. Because of photoperiod impact, cows located farther north can tolerate a lower BCS than those farther south. When relating BCS at calving to conception rates, the herd's average BCS won't work. The thinnest cow in the herd must be in satisfactory condition to have the opportunity to rebreed in a timely manner. Many respond to this with "My gosh, the whole herd is going to be butterball fat" or some similar comment. Does this say something about culling criteria? We often are asked about BCS and nutrition prior to and during breeding. This is not a biggy. In a low-cost program, the land's highest quality forage must be used to condition the cows prior to calving. It follows then that forage energy will be declining post-calving. With less dietary energy consumption coupled with lactation, body weight and BCS likely will be reduced. Unless the cattle completely fall out of bed, this situation is perfectly acceptable. Conception will be OK but lactation and calf gain may not be all that shiny. However, production-oriented folks, who are striving for heavy weaning weights, shouldn't be reading this in the first place.

Expert Speak

Researchers at Clay Center, NE recently reported[1] results of a study about this very subject. Heifers (437 days of age) were AI'ed to a single bull over a 21-day breeding period, beginning Oct. 30. Those bred (69) were divided into three treatments: **M-M-M-M**, **L-H-M-M** and **L-L-L-H**. The experiment was divided into four feeding periods. Period 1 was 94 to 186 days gestation and the heifers were fed moderate (M) or low (L) level of feed. Period 2 was from 187 d to calving and the heifers were fed M, high (H) or L level of feed. Period 3 was from calving to 27 d of lactation and feed levels were either M or L. Period 4 covered the period from 28 d lactation to about 63 d of lactation. The M-M-M-M heifers were fed to have moderate BW gains during pregnancy and lactation. The L-H-M-M heifers were fed to have low gains from 94 through 187 d of gestation, followed with rapid gain from 188 d to calving and moderate gain during lactation. L-L-L-H heifers were fed to have low BW gains from 94 d of gestation through 25 d of lactation and rapid gain thereafter to breeding. Between 63 to 69 d after calving, the heifers and their calves were moved to a breeding pasture. Heifers were multi-sire mated, (25:1) for 64d.

Did They Rebreed

All heifers gained weight during the last trimester but this is misleading since live weight included the products of conceptus. BCS is a more meaningful measurement because it reflects the net body weight of the heifer. The M-M-M-M lost measurable condition, while the L-L-L-H heifers declined big-time in BCS from 187 d gestation to calving. The L-H-M-M heifers "held their own" over the same period. Calves were weaned at 152 d of age.

BCS of First-calf Heifers

Treatment	187 d	Calving	Breeding
M-M-M-M	6.3	5.6	5.6
L-H-M-M	5.8	5.6	5.3
L-L-L-H	6.0	5.1	5.6

Weights at birth, 28 d and weaning reflected the post-calving energy consumed by their dams. Even the production-oriented people can't get too upset over the lighter weaning weight for the L-L-L-H treatment. Using the heifers with BCS 5.1 at calving early August, we calculated the probability of conception during the 64 d breeding season. We estimated that 62.3% were bred in the first 21 d. Of the 37.7% still open, 61.3 will get bred during the second 21-d period. That leaves 14.6% not bred. Exposing these remnants during the third 21 days, 59.8% will get with calf. This leaves 5.9% open, for an overall conception rate of 94%. Actual 64-d conception rates for the three groups were: M-M-M-M 90%, L-H-M-M 95% and L-L-L-H 93%.

Body Weights of Calves

Treatment	Birth	28 d	Weaning
M-M-M-M	69.7	125.9	303.1
L-H-M-M	70.1	126.8	296.3
L-L-L-H	62.2	109.8	286.8

Conclusions

The authors conclude that it may be OK to bounce nutrient availability around a bit, with bred heifers. Also, maintaining cows at a lower BW over extended periods will work. Then they say that additional feed still needs to be provided at critical times in the production cycle. The concern is for calf performance when bred heifers are maintained at low body weight over an extended period. They recommend that you don't go home and do this until there is more information. I interpret this to mean that all of you, who are summer calving and have your herd living off the land without energy supplementation, have it wrong. Are all publicly-owned research operations production oriented?

Schools In 2005

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[1] Freetly, HC, CL Ferrell and TG Jenkins. 2005. Nutritionally altering weight gain patterns of pregnant heifers and young cows changes the time that feed resources are offered without and differences in production. J. Anim. Sci. 83:916.