

LOW COST COW/CALF PROGRAM

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Shorten The PPI

The first-calf cow is 20% more fertile during her third estrus cycle than her first. The second cycle falls somewhere in between. Thus, she must have two normal cycles prior to visiting the bull. That means a short postpartum interval (PPI). In order for her to calve within a year following her first calving, she must rebreed by 85 days (assumes 280 d gestation). Two very critical physiological factors in play at the time of calving do help shorten the PPI. First, her body condition must be suitable for the particular day and location when she calves--**photoperiod impact**. When day length is short, she must be in a much higher BCS than if the day is long. Further, even when calving on a day of long photoperiod, the farther south the ranch is located the higher the BCS must be. Second, the heifer must be gaining weight at the time of calving. This is net gain over and above the products of conception.

Too Thin

If the heifer's BCS at the time of calving is below that which is necessary, what can be done to attain a decent conception rate? Placing them on a high energy-containing diet immediately after calving would seem to be a logical assumption. **It is not!** A recent report from Columbia, MO¹ (39° N) discusses this very issue. Heifers bred to calve in late December were fed a low-quality hay diet during the last trimester of pregnancy. They lost weight and BCS declined from 5.8 to 4 by the time of calving. The 36 heifers were allotted to four groups of nine each and fed diets of differing levels of energy (NE_m/lb = 0.43, 0.56, 0.69 or 0.81) immediately postpartum and continuing until first estrus.

Did The Energy Help

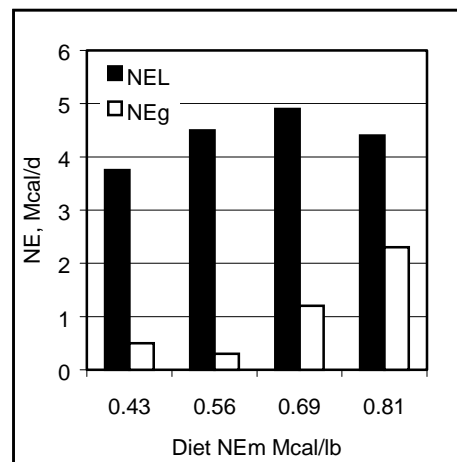
Results are shown in the table at the top of the next column. Initial body weight and BCS were similar for all four dietary groups. All dietary energy levels resulted in increased BCS, both at 90 d postpartum

NE _m /lb	Diet			
	.43	.56	.69	.81
Body Wt	827	816	809	811
BCS				
Calving	4.1	3.9	3.9	4.0
+ 90 d	4.4	4.1	4.7	5.5
Estrus	4.3	4.2	5.0	5.8
PPI, d	131	128	120	107

and at first estrus. Increasing dietary energy intake did shorten the PPI but not enough to produce a second calf within a year. There was not the slightest hope for the heifers to experience three cycles by 85 days after calving.

Where Is The Energy

In this study, milk production was assessed when cows averaged 30, 60 and 90 d postpartum. Net energy for lactation (NE_L) was calculated from total milk produced and percentage milk fat. Net energy required for maternal tissue gain was calculated from NRC equations. The results are shown in the chart below. Increasing



energy intake increased milk production. The diet containing 0.81 Mcal reduced the level of lactation but that was due to a high level of grain and a low level of fiber. The diet was similar to a fattening diet and not a diet suitable for lactation. As energy consumption increased from 0.43 to 0.56 Mcal, the requirement for NE_L increased and NE_g for maternal tissue gain decreased. This is termed energy partitioning. At this particular level of energy consumption, dietary energy supports lacta-

tion rather than body conditioning. As the results show, higher levels of energy must be fed if cows are to be conditioned while lactating.

By Comparison

The equations used in the School (to project PPI and conception rate) assume that heifers and cows are gaining weight at the time of calving. Given a BCS of 4 and calving in late December at 39°, we project a PPI of 88 days. **That's first estrus, not third.** If calving on June 15 at this location, a BCS of 5.8 would result in a PPI of 37 days.

Rumors

"The Low Cost Cow-Calf School is one of the best organized, documented and presented workshops that I have attended in 20 years. I would recommend it to anyone serious about being in the cow-calf business." Thank you, Jim Gerrish....Missouri

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¹ Lalman, D.L., J.E. Williams, B.W. Hess, M.G. Thomas and D.H. Keisler. 2000. Effect of dietary energy on milk production and metabolic hormones in thin, primiparous beef heifers. J. Anim. Sci. 78:530.