



THE CUTTING EDGE OF NUTRITION

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Young & Promiscuous

The replacement heifer must calve by her second birthday if she is to fit into the cycle of the cow herd. Let's do the mathematics, then take a look at the biology. Two years = 730 days.

Calving age 730 d
Gestation -280 d
Breeding age 450 d

Since the heifer is 21% more likely to conceive during her third estrus than her pubertal estrus, we must subtract an additional 40 to 50 days. Thus, she must achieve pubertal estrus by 400 days of age.

What tools can we use to help meet this time frame? Photoperiod has been discussed before. The heifer born nearest to the longest day of the year will commence cycling at an earlier age than one born near the shortest day of the year. (At 40°, 365 days if born in June vs. 435 if born in December). Early vs. late maturing breeds will alter this timing.

Size of the heifer, as she approaches breeding age, is always a consideration. The larger heifer will have a higher BCS, a larger pelvic area and a higher conception rate. Therefore, growth rate becomes important. We try to manage the herd so that she gets some extra goodies. After weaning, the heifers may have the first opportunity to graze in the fresh paddocks. Some ranchers pen the young ladies and feed them a high energy-containing diet. Creep feeding a high energy diet is a common practice.

Baby Fat

The U of IL did some creep feeding¹. At 39° 45' N & 90° 53' W, 123-day old heifers nursing their dams were divided into two groups. One group had access to creep feed (85% corn, 15% SBM) while the other group did without. The calves con-

¹ Buskirk, F.D., D.B. Faulkner, W.L. Hurley, D.J. Desler, F.A. Ireland, T.G. Nash, J.C. Castree & J.L. Vicini. 1969. Growth, reproductive performance, mammary development and milk production of beef heifers as influenced by prepubertal dietary energy and administration of bovine somatotropin. J. Anim. Sci. 74:2649.

tinued to nurse for another 112 days. The crepey heifers consumed 5.5 lb per day of the high-energy supplement. Their performance reflected the extra energy. All of

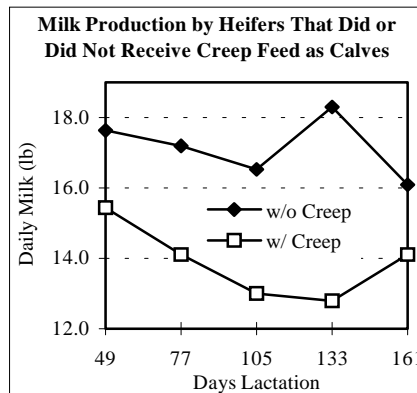
Heifer Performance		
w/o Creep vs. w/ Creep Feed		
	w/o	w/
Breeding wt lb	853	877
Calving wt lb	1095	1195
Wt at Weaning lb	1241	1389
Hip Height in		
At Breeding	48.0	49.4
At Calving	51.3	52.5
BCS		
At Calving	5.7	5.9
At Calf Weaning	7.4	7.5
Pelvic area in ²		
At Breeding	33.0	34.6
At Calving	51.0	52.5

the right things happened when the additional energy was offered. In addition to body weight gain and body size as indicated in this table, the Creeped heifers had a higher conception rate – 86% vs. 78%.

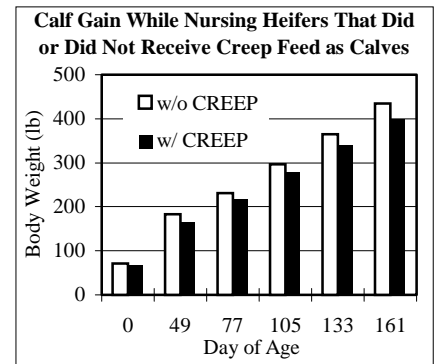
Are They Worth A Dam?

All desires that accompany supplemental feeding were achieved. With most operators, the story ends there. The authors extended their observations, however, through lactation.

Below are Lactation curves comparing the two treatments. On average, the heifers supplemented when they were calves produced 3.5 fewer pounds of milk each day



than the non-creep fed heifers. Reduced lactation levels are reflected in the next chart which shows relative calf performance while nursing. The calves from the non-creep fed heifers weighed 434.7 lb after nursing for 161 days. Their mates out of creep fed heifers weighed 400 lb. Please note that the birth weights also favored the non-fed heifers.



Udder Details

The bulk of the cells in mammary tissue consists of either fat cells or epithelial cells. The fat cells contribute to the size of the bag and udders but it is the epithelial cells that are secretory. They contain DNA. The mammary glands of the creep fed heifers had considerably less DNA than did the non-supplemented heifers.

A few open heifers **destined** for the feedlot may be better than high conception rates and all the herd's offspring **destined** to poor performance.

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