LOW COST COW/CALF PROGRAM

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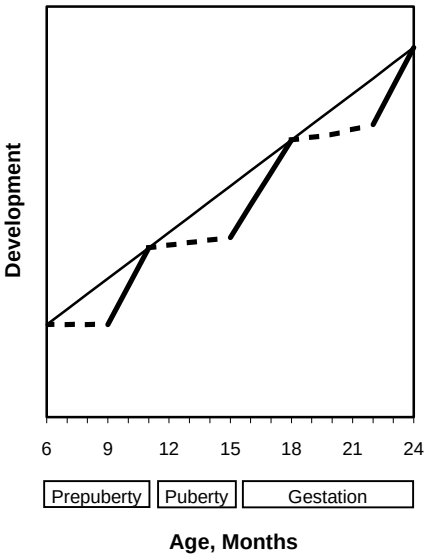
Heifers Climbing Stairs

Several universities have published numerous studies of optimal prepubertal nutrition of the heifer calf. It can be concluded that a stair-stepped (coined by North Dakota State U)[1] gain is most desirable for the heifer that is destined to become a longtime member of the brood herd. A schematic of a stair step with Holstein heifers (plagiarized from NDSU) is shown here[2]. It illustrates a period of little or no body weight gain, followed by a nutritionally managed period of compensatory gain. The restrict-then-feed cycle is repeated. Most of the early stair step work was involved with dairy heifers. Getting the heifer into the milking parlor at the youngest possible age can be a big factor of economics to the dairyman. This is accomplished by feeding for rapid growth, resulting in early puberty. Subsequent lactation, however, is another matter. With the accelerated body weight gain, fat cells are formed in the udder at the expense of cells that produce milk. Milk production is something less than genetic capacity and the impediment is permanent.



Smaller Beef Breeds

The above schematic is with large framed cattle. With smaller cattle, the restricted-gain phase commences at a younger age. It has been suggested that the critical age in the formation of the udder is that of around 3 to 9 mo of age. In spite of what research has demonstrated, there is an insistence on the part of ranchers in general that the replacement heifer must experience consistent body weight gain from birth through puberty and breeding. This is understandable because getting the heifer with calf is of prime importance. After all, an open, replacement heifer is not going to be much of a contribution. Age is not a problem with the beef heifer but size is, relative to potential empty mature body weight (EMBW). Assuming that the heifer is meant to calve as a two-year old (730 d of age), she must be bred by 15 mo of age (450 d). Being aware that the heifer is about 20% more likely to conceive during her third estrus cycle compared to her pubertal cycle, the goal is to have her experience puberty no later than 13 mo of age (380 – 390 d). At this age, her empty body weight (EBW) must be 65% of her eventual EMBW. Age at puberty aside, the question arises regarding conception with heifers that at one time experienced limited gain. The following table summarizes three experiments with beef heifers at NDSU. The restricted-gain period varied somewhat among the experiments. Estrus was synchronized prior to the breeding season. Expression of heat was monitored and the heifers were AI, followed by a visit with the bull. About 20% of the heifers that experienced an easy-push-up-the-hill remained open. About 94% of those forced to climb the stairs got pregnant. The point is - heifers that experience a period of little or no gain can still conceive.

Cumulative % heifers conceiving to AI, by day of breeding season or open.

	AI	21-d	42-d	63-d	Open
Control	27.1	42.7	70.8	80.2	19.8
Stair	21.7	52.5	85.0	94.2	5.8

The Natural Way

A low-cost program should fit naturally into the stair-step scheme. A July-born calf (that stays with its mother through the winter) experiences the restricted-gain phase at about the right time. With the onset of lush green forage, compensatory gain will give it the size to experience pubertal estrus as a yearling. All is well and good except for a couple of pitfalls. If the herd evolved from a winter-calving herd that always had been supplemented with dietary energy, it may be a little tough to find sufficient energy for the compensatory-gain phase. They may be too big for the land only. Many ranchers, who have been summer calving for quite some time, recently have experienced reduced conception rates of their replacement heifers. I believe it is called drought. The grass won't grow without moisture and the calf will not achieve an EBW of 65% EMBW, in a timely fashion. With the low-cost program, the mow is generally empty. Carrying heifers for such a long period (and having them come up open) is a great disappointment. Salvage is by selling as a feeder or breeding for someone who is into fall calving. Philosophically, one can say that it was meant to be. How many cattle should be on land that is experiencing drought? And what should be the stocking rate during the recovery from drought? The solution for some would be to feed the heifers. Can you really afford to feed your way out of drought?

Rumors

Still not sure about summer calving? Then go to www.lowcostcowcalf.com and consider a Dr. Dick Diven's school. Make this your last "out of cycle" calving and learn to enjoy "stress free calving."

Thanks, Chip Hines ..... Nebraska

Schools In 2004

Tucson, AZ March 30 – April 2

Additional Scheduling in Progress

Dick Diven

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[1] http://www.ag.ndsu.nodak.edu/dickinson

[2] Ford, JA and CS Park. 2001. Nutritionally directed compensatory growth enhances heifer development and lactation potential. J. Dairy Sci. 84:1669.