

LOW COST COW/CALF PROGRAM

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A New Idea, Profitability

In the School, we emphasize the necessity of conception. It is critical to the financial success of cow/calf operations. Weaning rate is equally as critical but first, you've got to get them pregnant. The cow that calves today must be bred within 85 days, if she is to calve on this date next year. How can we enhance this necessity? The young cow that is experiencing her third estrus cycle since calving - when the bull visits - is 20% more likely to conceive than she would if cycling for the first time. Thus, her first cycle postcalving must occur within 43 days. In many cases, this means doing all that can be done to shorten the postpartum interval (PPI). Body condition of the cow - *at the time of calving* - is probably the most important criteria to be satisfied when shortening the PPI. Anestrus that occurs between calving and first estrus is a period of healing and recovery. Major endocrine system changes must take place while the reproductive tissues are prepared for ovulation and pregnancy. Energy is required for all of these processes. Dietary energy supplied by very-high-quality forage will not suffice. Additional energy is needed and it only can come from energy stored in the cow's fatty tissues. Another important contributor to reining in the PPI is that the cow be gaining weight during the calving period. The significance of this period of weight gain is most easily observed should the cows experience weight loss at calving. It can be a disaster. Another contribution that can shorten the PPI is photoperiod impact. The cow that calves closest to the longest day of the year will have a shorter PPI than the cow calving closer to the shortest day of the year. Equations developed to reflect this relationship certainly are not straight lines. However, on average, the PPI is shortened by 0.404 to 0.430 days for each day later than late Dec through late Jun. The studies suggest that the shortened PPI actually occurs following the impact of sunlight. In the northern hemisphere, Jul calving should reap better results than Jun calving. Once all of this is considered, be mindful that BCS and gain-

ing weight at the time of calving have a greater impact on shortening the PPI than anything else. In a low-input program, this conditioning must come from the forage produced by the land and not from the hay bale or grain bin. Thus, the land determines the exact time of calving. In the 12-month cycle, the cow's highest dietary energy requirement is for conditioning (weight gain mostly in the form of fat deposition). *In the high-production model (heavy weaning weight), high-quality forage must be used for lactation and supplemental energy must be fed to condition or maintain condition prior to calving.*

A Little Foreplay?

One trick that seems to help reduce the PPI is the exposure of cows to bulls shortly after calving. Montana State University recently reported¹ the results of a study of this kind. Fifty-six "spring calving," first-calf cows (weighing 1100 lb) were used in this study. Calving season began Jan 22 and ended Mar 1. *In what months would winter calving occur?* Half of the cows were not exposed to bulls (NE), with the remaining half placed with vasectomized bulls (BE) at 15, 35 or 55 days postpartum. Two lots were used in this study. The lots were arranged in such a way that animals in one lot could not see or smell the other group. *Noise abatement was not in place so did the NE group hear any moans and groans from the BE group?* We stated above: that in order for the cow to have an opportunity to breed on her third cycle postcalving, she must commence cycling by 43 days. Stimulation by the bulls then must occur within 28 days for the cows exposed 15-days postcalving; when exposure occurred at 35 days, there were only 8 days remaining. Observations were made at 10-day intervals so we must round up to the nearest day. For the cows exposed beginning at 15-days postcalving, 44% were cycling by 45-days postcalving. When exposure commenced at 35-days postcalving, only 10% came into heat by 45-days postcalving. None of the NE cattle were cycling by 45-days postcalving. The 55-day postcalving treatment was not practical to

begin with. For any of these young cows to commence cycling by 45-days postcalving, bull stimulation was necessary. It commonly is accepted that bull stimulation can shorten the PPI. This study was the extreme. These cows did not have a chance without it. They birthed their calves in the dead of winter when average day length, during the calving period, was 10.03 hr in Bozeman. (*Photoperiod on July 1 extends for 15.38 hr*). The BCS (of these cows) was 4.7. That is low, no matter where or when they calved. These cows were two years old when they calved so were themselves born during the winter months. Photoperiod also impacts the age of puberty. Heifers born closest to the longest day of the year will commence cycling at a younger age than those born closest to the shortest day of the year. If the first-calf cow is to calve on her second birthday (730 days of age), she must be bred by 450 days of age. If we want her to be cycling for the third time at this age, she must experience pubertal estrus by about 400 days of age. If she is born, in say Jul, she can experience pubertal estrus earlier than that. With each estrus cycle, she becomes more sexually mature. While she is immature in many physiological characteristics, a higher degree of sexual maturation can be achieved by allowing her to experience as many cycles as possible prior to breeding. Selecting pregnant replacement heifers, after only 21-days breeding, is also a plus for rebreeding the first-calf cow.

Katrina/Rita

Following the news reports in the aftermath of the storms, I've learned that all of the damage, destruction and loss of life were the result of negligence. Heavy rains, high winds and storm surges had nothing to do with it. Amazing. Next drought, sue your county agent!

Schools In 2005 - 06 Scheduling in Progress

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¹ Berardinelli, JG and PS Joshi. 2005. Introduction of bulls at different days postpartum on resumption of ovarian cycling activity in primiparous beef cows. J Anim Sci. 83:2106.