Heifer nutrition role in precocious puberty

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Summary

Based on the findings of these four experiments, the hypothesis could be accepted that feeding a high-energy, concentrate-based diet to heifers weaned at three to four months of age will induce precocious puberty in a majority of heifers.

Feeding a high-energy diet from early weaning to approximately 200 days of age consistently had a similar effect on age at puberty as feeding this diet through 11-12 months of age. Hence, the signal that induces precocious activation of the reproductive axis may well occur early in life for heifers and, in some cases, before the age at which early weaning was performed in the experiments.

These experiments suggest the existence of a critical time in which nutritional management can induce precocious activation of the reproductive axis and, consequently, puberty.

The Bottom Line

Advantages of puberty before 10 months of age in Bos taurus heifers in North America are limited. In fact, precocious puberty accompanied by inadvertent pregnancy is detrimental to the economic efficiency of beef cattle production.

In these cases, calving typically occurs after the normal calving season for the herd. The heifers are of smaller body size than heifers calving for the first time at two years of age and have a greater risk for dystocia, call death loss at calving and an extended postpartum recovery period (Laster and Gregory, 1973; Short et al., 1994).

Furthermore, in heifers destined to be sold as market animals, precocious puberty negatively influences profitability.

While the economic advantages of nutritionally induced precocious puberty are not obvious in Bos taurus heifers, advantages could be realized in Bos indicus-influenced heifers in the southern U.S. (many of which still calve at two-and-a-half to three years of age).

An even greater effect would be realized in countries such as Brazil, where essentially all Bos indicus heifers calve for the first time at three or four years of age (Day and Nogueria, 2013).

References


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