



Repro Tracks

► by **Bill Beal**, beef cattle reproductive physiologist, Virginia Tech

Things to avoid in heifer management

Selecting, rearing and breeding replacement heifers are critical steps in the success of a commercial or purebred cow-calf operation. Management practices involving the feeding of replacement heifers and the extra-label use of synchronization drugs have been “in the news” lately. Purebred breeders should carefully consider some of the current and proposed practices when deciding how to manage replacement heifers.

Breeder question No. 1

I have been injecting estradiol benzoate (EB; 1 mg) 24 hours after pulling a CIDR® and giving Lutalyse® to synchronize estrus and induce ovulation in my heifers. Our pregnancy rates with timed artificial insemination (AI) breeding 24 hours after giving the EB have been between 55% and 65%. I'm happy with this treatment and our pregnancy rates, but my veterinarian says he can't provide the EB anymore. I don't understand. Why not?

Response: Estrogen compounds are potential carcinogens in humans. They are not approved for use in animals, in part, because the safety of their use has not been demonstrated, as required under the Federal Food, Drug and Cosmetic Act. On April 5, the Center for Veterinary Medicine of the Food and Drug Administration (FDA) issued a stern warning (see www.fda.gov/cvm/cvm_updates/ecpup.htm) reminding veterinary practitioners that there were no FDA-approved estrogenic products. The agency noted they were aware various estrogens had been prescribed by veterinarians for use in beef and dairy cattle. The FDA warned that the manufacturing or distributing of estrogenic compounds for use in food-producing animals is illegal.

Licensed veterinarians are permitted to prescribe extra-label uses of approved animal drugs. The Animal Medicinal Drug Use Clarification Act (AMDUCA) allows limited extra-label use when the health of an animal is threatened or suffering, or if death may result from failure to treat. Veterinarians were prescribing the extra-label use of estrogens with the hope they were covered under the rules of AMDUCA. However, the FDA made it clear that the extra-label use of estrogen compounds for reproductive management purposes did not qualify under those provisions.

Veterinarians risk having their licenses

revoked if they manufacture, prescribe or distribute any of the estrogenic products (e.g., estradiol-17 β , estradiol benzoate, estradiol valerate or estradiol cypionate) for use in reproductive management. This is unfortunate because estrogens provided the most effective method of inducing emergence of a new follicular wave and served as a reliable method for inducing estrus and ovulation in cattle.

There are no plans by pharmaceutical companies to seek FDA approval for the use of estrogenic products in food-producing animals. Given the increased scrutiny by the FDA, it is likely that veterinarians will immediately stop prescribing the use of estrogens. Likewise, producers should stop using them to protect against liability. Hopefully the use of approved drugs to control follicular wave emergence and the timing of ovulation will receive more emphasis in the future.

Breeder question No. 2

I read an article in BEEF magazine that claimed replacement heifers reach puberty at lighter weights than in the past, and it recommended feeding replacement heifers less to save money. How much feed should I cut back on my purebred heifers?

Response: I read the same article by Clint Peck (“Heifers at Any Cost?”; April 2006). As I remember, he quoted Trey Patterson, who indicated that based on research done at the Padlock Ranch in Wyoming, feeding groups of commercial heifers to reach an average of 55% of their mature weight by the beginning of their first breeding season (rather than the traditional recommendation of 60%-65%) could reduce the cost of developing herd replacements.

Feeding heifers to reach a lower average target weight would surely reduce feed costs. However, more heifers in the group may not

attain the “threshold weight” needed to begin cycling prior to the beginning of the breeding season if the target weight is lowered. That could result in more heifers breeding late or not breeding at all in a short breeding season. A higher rate of open heifers is “no big deal” in a commercial herd if more heifers are being retained than are needed as replacements and if the market for open commercial heifers at the end of the breeding season is a lucrative one.

The practice of feeding commercial heifers to a lower average target weight is a good example of developing strategies that optimize production rather than maximize production. In the commercial cattle world, where each replacement heifer has approximately equal value, this is a great idea. Optimizing production recognizes costs and returns rather than just the attempt to increase returns at any cost. However, in a purebred herd, lowering the average target weight for a group of replacement heifers to reduce costs may result in a disproportionate decrease in returns.

Unlike the value of commercial heifers, the value of purebred heifers varies widely based on differences in pedigrees and performances. If reducing the target weight for a group of purebred Angus heifers results in heifers with more valuable pedigrees or more desirable ultrasound carcass characteristics failing to become pregnant, the returns from the group of purebred heifers may be reduced to a far greater extent than the reduction in feed costs.

Simply put, all purebred heifers are not created equal, and the disparity in value of an open purebred heifer vs. a pregnant purebred heifer argues that purebred heifers should probably be fed so that a very high percentage ($\geq 90\%$) reach puberty prior to the beginning of the breeding season. In my opinion, feeding groups of heifers to 60% of their mature weight prior to breeding is still the best advice for purebred breeders.

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Editor's Note: Beal is a beef cattle reproductive physiologist at Virginia Tech. He conducts research involving estrus synchronization, AI, embryo transfer and the use of ultrasound technology. This column is designed to provide answers to questions about reproductive management commonly posed by commercial and purebred breeders. If you have questions or comments related to the reproductive management of cows or bulls, e-mail them to Dr. Beal at wbeal@vt.edu or mail them to him at the Dept. of Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA 24061-0306.