

Vet Call

by Bob L. Larson, DVM, University of Missouri



Use of growth implants in cow-calf operations

Although many trials have shown the use of growth-promoting implants returns more per dollar invested than any other management tool available, many cow-calf producers fail to take advantage of the economic benefits offered by these products.

A recent survey of cattle producers from 15 states revealed that only 38 percent of calves are implanted with a growth promotant during the suckling phase. A summary of research trials involving four different implants and more than 3,900 suckling calves found the average improvement in weaning weight compared to non-implanted calves was 18.5 pounds.

Growth-promoting implants utilize either naturally occurring hormones or synthetic counterparts. Implants approved for use in suckling calves have estrogenic activity which stimulates the pituitary gland to increase production of growth hormone and insulin—like growth factor 1. These act to enhance protein and calcium deposition which results in greater muscle and bone growth.

Nutrition must be adequate in order for calves to have the greatest response to an implant. Weight gain improvements are marginal when energy and protein are not sufficient to maintain the increased potential growth implants allow.

Because of the economic return from the use of growth implants in the suckling phase, producers should utilize these products in all steers grown on the farm or ranch. The only exception would be producers who market animals for particular branded products that prohibit the use of implants. The timing of implanting suckling steer calves depends on the marketing arrangements of the farm or ranch. Label directions for implants approved for use in suckling calves indicate calves should be at least 30 to 45 days of age (depending on the implant) at the time they are first implanted.

On-farm trials also demonstrate that the best performance enhancement occurs if calves are implanted when they are at least 45 days of age. This could be due to the fact

that animals younger than this do not have the receptors necessary to utilize the hormones contained in the implants.

Even though implants are profitable tools to use in steer calves, purebred producers and producers who raise their own heifers should recognize the situations when implanting suckling calves should be avoided. No implants are approved for use in bull calves because of the serious negative effects of these hormones on future fertility. Heifers can also experience decreased fertility when implanted during the suckling

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phase. The most consistently serious effects occur if heifers are implanted near the time of birth, if they are implanted more than one time, or if they are implanted near the time of onset of puberty (which often coincides with weaning).

Implants from two companies are approved for use in suckling heifers that are to be retained as replacements, but I do not recommend implanting calves identified at a young age as likely replacements. There are no benefits to implanting replacement heifers since producers do not benefit economically from maximum growth. Instead, economic benefits from replacement heifers occur due to early onset of puberty high rates of fertility and a long productive life in the cow herd.

Numerous studies have shown that heifers implanted with growth promotants at two to three months of age have a larger pelvic area as yearlings than heifers that were not implanted. However, the advantage of implanted heifers as yearlings is lost by the time they are ready to calve as two-year-olds. There is also no improvement in the rate of dystocia in implanted heifers.

Heifers implanted with approved products according to label directions (older than 30 or 45 days of age and less than 400 pounds) have been shown to have the same or slightly lower percentage cycling at the beginning of the breeding season and

slightly lower pregnancy rates as long as nutrition is adequate. This occurs even though uterine weight is reduced and the number of uterine glands is decreased. However, if implants are utilized according to label directions and energy or protein is restricted, fertility can be seriously affected. Age at the onset of puberty is increased, the percent cycling at the start of the breeding season is decreased and pregnancy rate is decreased.

Because of the economic trade-offs associated with implanting heifers,

producers should base their decision on whether or not to implant on how likely it will be that heifers will be retained in the herd. If a producer saves 20 percent or more of the heifer calves to breed as replacements, the heifers should not be implanted at any time during their life. If a producer will be sending more than 80 percent of the heifers to the feedlot however, the weight gain advantage of implanting will exceed the negative effects on reproduction.

Another strategy some producers utilize is to only implant heifers born late in the calving season or from poorer-performing cows because they are not likely to be saved as replacements. If any heifer was implanted at two to four months of age and then identified as a possible replacement, it's imperative that she not be implanted a second time.

Like many tools available to beef producers, growth-promoting implants offer the potential for substantial economic gain. Still, the negative aspects must be recognized and avoided.

Bob Larson's E-mail address:
vmlarson@ext.missouri.edu