



Growth Promotant Implants for Cattle

Growth implants can reduce the cost of beef production when implemented with the proper strategy. These small pellet implants, placed under the skin of a calf's ear, slowly release growth stimulant over a period of time resulting in increased muscle growth and size. A variety of implants and options are available and should be considered before implementing a program.

The proper development of an implant strategy can improve daily gains up to 20%, improve efficiency up to 15%, and reduce cost of production at least 10%. Improper implant use and lack of management adjustments with certain implant programs may reduce quality grade and increase undesirable side effects. Perhaps no other technology returns more per dollar invested than implanting.

to prevent infection and abscesses can reduce infection, but should not substitute for proper technique. Implant placement should be in the middle 1/3 of the back side of the ear between the two major cartilage ridges (see Figure 1).

Available implants

While investing in an implant strategy can mean significant payback, the decision of which implant strategy will work best for your operation is complicated. More than 30 brands of implants are available for feedlot cattle as of spring 2016. This means there are at least 1,100 possible implant combinations in a reimplant program, and more than 39,000 possible combinations if the cattle are fed long enough to be given three implants. One helpful approach to developing an implant system is to categorize currently available implants by active ingredient and relative potency. Table 1 is one example of this approach. Implants within a category should give somewhat similar responses, and the decision should be based on price, convenience, availability, and general preference.

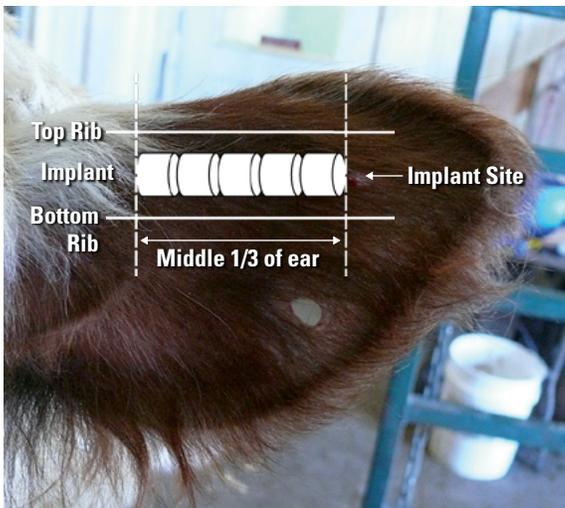


Figure 1. Proper implant placement

Implant administration

Proper implant administration can improve the response to implanting. Surveys by the major implant companies have shown up to 15% of implants administered may cause problems such as ear abscesses or crushed or missing implants. Proper use of disinfectants, using sharp needles, and taking the proper time to ensure quality implanting are important. Recent availability of implants with antibiotics

Table 1. Brand names and ingredients

	Active ingredients	Brand names
Medium potency estrogen or estrogen-like implants	EB20/PROG200 (estradiol benzoate, 20 mg; progesterone, 200 mg)	Synovex-S ^{3,5} , Component E-S ^{3,5}
	EB20/TEST200 (estradiol benzoate, 20 mg; testosterone, 200 mg)	Synovex-H ^{4,6} , Component E-H ^{4,6}
	E 25.7 (estradiol, 25.7 mg)	Compudose ^{1,3,5,6}
	E 43.9 (estradiol, 43.9 mg)	Encore ^{1,3,5,6}
	Z72 (zeranol, 72 mg)	Magnum ⁵
Lower potency estrogen or estrogen-like implants	Z36 (zeranol, 36 mg)	Ralgro ^{1,2,3,4,5,6}
	EB10/PROG100 (estradiol benzoate, 10 mg; progesterone, 100 mg)	Synovex-C ^{1,2} , Component E-C ^{1,2}
Androgen implants	TBA 140 (trenbolone acetate, 140 mg)	Finaplix-S ⁵ , Component T-S ⁵
	TBA 200 (trenbolone acetate, 200 mg)	Finaplix-H ⁶ , Component T-H ⁶
Combination (higher potency) implants	E24/TBA120 (estradiol, 24mg; trenbolone acetate, 120 mg)	Revalor-S ⁵ , Component TE-S ⁵
	E14/TBA140 (estradiol, 14mg; trenbolone acetate, 140 mg)	Revalor-H ⁶ , Component TE-H ⁶
	E28/TBA200 (estradiol benzoate, 28mg; trenbolone acetate, 200 mg)	Synovex Plus ^{5,6}
	E20/TBA200 (estradiol, 20 mg; trenbolone acetate, 200 mg)	Revalor-200 ^{5,6} , Component TE-200 ^{5,6}
Lower potency combination implants	E8/TBA40 (estradiol, 8 mg; trenbolone acetate, 40 mg)	Revalor-G ^{3,4} , Component TE-G ^{3,4} , Synovex T40 ^{3,4}
	E16/TBA80 (estradiol, 16 mg; trenbolone acetate, 80 mg)	Revalor-IS ⁵ , Component TE-IS ⁵ , Synovex T80 ⁵
	E8/TBA80 (estradiol, 8 mg; trenbolone acetate, 80 mg)	Revalor-IH ⁶ , Component TE-IH ⁶
	E10/TBA100 (estradiol, 10 mg; trenbolone acetate 100 mg)	Synovex Choice ^{5,6}
Longer duration combination implants (150-200 days)	E40/TBA200 (estradiol, 40 mg; trenbolone acetate 200 mg)	Revalor-XS ⁵
	EB28/TBA200 (estradiol benzoate, 28 mg; trenbolone acetate 200 mg)	Synovex ONE-F ^{5,6}
	EB21/TBA150 (estradiol benzoate, 21 mg; trenbolone acetate 150 mg)	Synovex ONE-G ^{3,4}

Approved animal use:

¹ Suckling calves – steers

² Suckling calves – heifers

³ Stockers – steers

⁴ Stockers – heifers

⁵ Feedlot – steers

⁶ Feedlot – heifers

Developing a strategy

STEP 1 – Terminal implants

When developing an implant strategy, keep in mind that the most important implant in terms of improving performance and reducing cost is the last implant used prior to marketing.

A common implant strategy currently recommended is to use a combination implant as a terminal implant the last 80-140 days (80-100 days is ideal)

prior to slaughter. Remember that cattle given combination implants not only grow faster and more efficiently, but must be fed to an additional 50-150 pounds heavier to reach the same endpoint. This may require an additional 10-20 days on feed. With this in mind, estimate a slaughter date and count back 80-100 days to find the best date for administering the terminal implant.

Until recently, the choice of implant for a terminal implant was affected by the sex of the animal. Now, both the E24 TBA120 implants and E28 TBA200 are cleared for steers as well as heifers. When the feed additive MGA is fed to heifers, their natural estrogen production increases, so implanting with an androgen implant (TBA200) produces nearly the same response as a combination implant. This is particularly true with older, heavier heifers.

STEP 2 – Early implants

Once the timing of the terminal implant is determined, determine the number of days from arrival or first implant until the terminal implant date. This number of days will help narrow the implant choice for early implant(s). If the number of days on the early implant exceeds 140, then either two implants are needed to cover this period or a longer acting implant (E25.7, 180-200 days or E43.9, 300 days+) is required. Medium potency estrogen or estrogen-like implants are most commonly used during this phase. Implants from this group should provide similar responses if the period is 70-100 days. For periods less than 60-80 days a low potency estrogen or estrogen-like implant often is the implant of choice. Some recent limited data suggests that using a low potency implant as the first implant may have less negative carcass effects.

Other considerations

These recommendations reflect the current thinking relative to the best tradeoff between optimum performance and carcass quality. More aggressive implant programs (high potency combination implants given early and reimplanted) yield maximum performance and lowest cost of gain, but also increase the risk of lower quality grade. Therefore, the marketing system should be a consideration when choosing the best implant strategy. Markets that demand leaner beef and more retail product are best met by a more aggressive implant strategy. High quality markets demand either less aggressive implant strategies or longer feeding periods and heavier weights. Some moderate

dosage combination implants recently released for use in the feedlot appear to offer improved carcass quality without giving up a large performance response when used as the terminal implant.

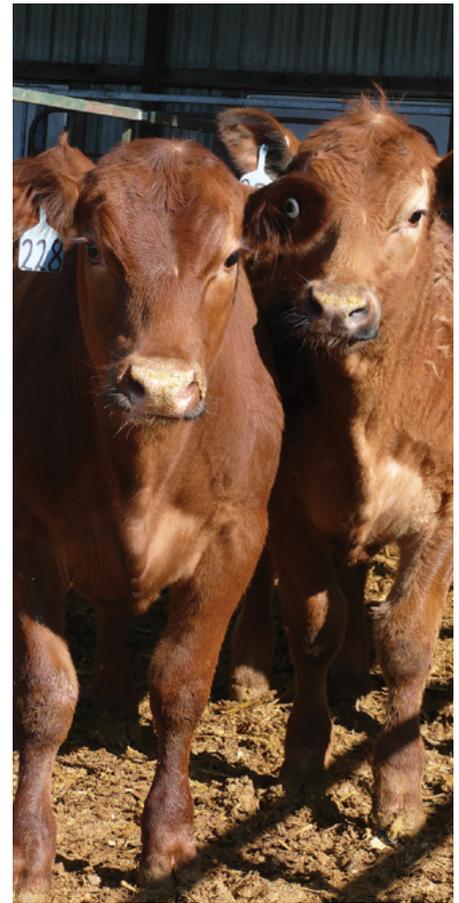
Extended duration combination implants

Revalor-XS and the Synovex-ONE implants offer the performance response benefits of a combination implant and a delivery system that allows the implant to pay out over an extended period, as long as 150-200 days. These newer implants can reduce the need for a reimplant in a typical feedlot situation.

What if I sell my calves before harvest weight?

Calfhood implants can add 20-40 pounds (3%-5%) to weaning weights. If heifers that may be kept for breeding are implanted it should be done after 45 days of age. Stocker cattle that are gaining over 1.5 pounds per day will increase weight gain 8%-18% or 15-40 pounds during the grazing season. Cattle implanted as calves or stockers may have a slightly lower response to feedlot implants than those not implanted. **Remember: The most important implant you give is the last one before you sell the cattle.** In the feedlot that is the terminal implant. If you background calves, the implant used during the last 80-120 days will give you the most return per dollar invested.

For information on the hormone implant effects on the beef product see IBC-48, "[Understanding Hormone Use in Beef Cattle](http://www.iowabeefcenter.org/information/IBC48.pdf)" (<http://www.iowabeefcenter.org/information/IBC48.pdf>).



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