

Implanted Growth Promotants For Beef Cattle, Part 2

# What Implantable Products Are Available For Cattle?

**Editor's Note:** The safety of beef from cattle implanted with growth promotants was discussed in Part 1 of this article. Now, in Part 2, application of such implants will be discussed.

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UNIVERSITY PARK (Centre Co.) — The active ingredients in different implantable products and the animals for which they have been approved are presented in Table 2.1.

Implants are categorized as natural steroid, synthetic steroid-like, and nonsteroid compounds. Although most cattle producers are familiar with the correct use of implants, three factors must be emphasized: (1) Implants should be used only in those animals and in those dosages which have been approved and are recommended on the product label; (2) Each producer should develop an "implant strategy" for the use of these products within his/her own system; (3) "Doubling-up" implants (using two products simultaneously or implanting too frequently) is usually a waste of money and can decrease animal performance and/or carcass quality.

**Common Mistakes And Corrective Measures**

Because implants act much like hormones, their use represents replacement or supplementation of hormones.

Castrated males produce little natural estrogen (female hormone), and their androgen (male hormone) production is low.

**Composting Training Sessions To Be Held**

CREAMERY, (Montgomery Co.) — A Master Composter training series will be offered again this year by Montgomery County Cooperative Extension's Recycling Education Program.

The training includes three Thursday evening sessions from 6:45 p.m. to 8:45 p.m. on Oct. 20, 27, and Nov. 3, and will cover in-depth information on the biology of composting, composting techniques, troubleshooting, and alternatives to composting. It will take place at the Upper Dublin Township building on Loch Alsh Road in Upper Dublin.

At the final session on Saturday, Nov. 5, a compost park will be constructed. Compost parks are working exhibits of various types of compost bins complete with detailed signs about the bins, and brochures on how to compost. The parks are maintained by Master Composters.

The training is free, but registration is required. To register, call the organic waste Recycling Education program at (610) 454-1245.

Table 2.1 Manufacturers, active ingredients, and approved beef cattle uses of growth promotant implants<sup>a</sup>

Implant	Manufacturer or distributor	Active ingredient(s)	Approved uses in beef cattle <sup>b</sup>
<i>Naturally occurring steroid products</i>			
Compudose	Elanco	24 mg estradiol	Calves steers heifers
Synovex-C	Syntex	10 mg estradiol and 100 mg progesterone	Calves (>45 days old <400 lb)
Calfoad	Upjohn	20 mg estradiol and 200 mg testosterone	Heifers (> 400 lb)
Implus-H	Upjohn	20 mg estradiol and 200 mg testosterone	Heifers (> 400 lb)
Synovex-H	Syntex	20 mg estradiol and 200 mg progesterone	Steers (> 400 lb)
Implus-S	Upjohn	20 mg estradiol and 200 mg progesterone	Steers (> 400 lb)
Synovex-S	Syntex	20 mg estradiol and 200 mg progesterone	Steers (> 400 lb)
<i>Synthetic steroid-like products</i>			
Finaplix-H	Hoechst-Roussel	200 mg trenbolone acetate	Heifers (> 400 lb)
Finaplix-S	Hoechst-Roussel	140 mg trenbolone acetate	Steers (> 400 lb)
Revalor-S	Hoechst-Roussel	24 mg estradiol and 120 mg trenbolone acetate	Steers (> 400 lb)
<i>Nonsteroid anabolic agent</i>			
Ralgro	Malincrodt Veterinary	36 mg zeranol	All cattle

<sup>a</sup>It is recommended that bulls intended for breeding purposes not be implanted with any product since there may be interference with normal sexual development and subsequent fertility level, however, recent research with Ralgro and Synovex-C indicates implanting heifer calves does not decrease subsequent fertility in them.  
<sup>b</sup>Strict adherence to use of products only in approved beef cattle classes and weights is essential (read the product label)

Therefore, estrogens are the primary and androgen the secondary hormones to be replaced or supplemented in steers.

In heifers, androgen level is very low, and estrogens fluctuate. Therefore, androgen production is the primary hormone and estrogens the secondary hormones to be replaced or supplemented in heifers.

All of the companies manufacturing growth-promotant implants have developed excellent instructional materials that should be reviewed by any individual who implants cattle. Almost anyone can insert implants, but it is easy to make mistakes that render the implant ineffective.

Table 2.2 summarizes problems observed in misusing implants, the probable causes, and how these mistakes can be remedied. Basically, the person doing the implanting must not work too quickly, must place the implant in the proper position (middle third of the ear from head to tip), and must

use sanitary procedures with both ear and implanting equipment.

**Growth And Carcass Changes**

Implant side effects such as stagginess, bulling, and vaginal prolapse have been reported. While there is individual variability in how animals metabolize compounds administered through implanting, adverse side effects such as these usually are due to poor implanting technique.

For example, if an implant is crushed or placed too close to the base of the ear, the level of hormone in the animal will be increased immediately due to a high early absorption rate. If implants are placed in the cartilage, form abscesses, or have pellets missing, a low level of circu-

Table 2.2 Implanting mistakes and solutions<sup>a</sup>

Problem	Cause	Solution
Abscess or serum around implant	Lack of sanitation, infection	Disinfect equipment, dry ears, improve restraint
Bunched pellets	Needle moved, poor restraint	Improve cattle restraint
Retrograde abscess	Infection after implanting	Pinch injection site after implanting sanitation
In cartilage	Poor needle, too fast, improper placement	New needle slow down, place implant properly
Crushed pellet	Needle not fully inserted	Fully insert needle
Missing implant	Not advancing cartridge, through the ear, abscess in skin	Check implant position pinch implant site shut
Separated pellet	Rapid withdrawal of needle, processing too fast	Slow down, withdraw needle slowly
Partial implant	Needle too short, too fast, poor restraint	Use needle provided with implant application slow down, good restraint
Pellet too close to head	Inexperience	Implant only in middle one third of ear
Walled-off implant	Abscess	Improve sanitation

<sup>a</sup>From Compudose Technical Manual (1982)

lating compound will result.

This wide variation of hormone level among individuals within a group can lead to bulling and riding problems. Again, this is not the fault of the product, but rather of the manner in which it was implanted.

Under recommended usage, practically every implant will provide a 5- to 25-percent increase in average daily gain in most types of cattle. Increases in feed-conversion efficiency are less, usually ranging from 5 to 15 percent. There may be an increase in appetite, but even if feed consumption is not increased — such as in a controlled, limit-feeding situation — there should still be an increase in growth rate. The increase in feed-conversion efficiency may be nil or negligible.


Growth-promoting implants act by diverting nutrients within the

animal's body to muscle deposition and by extending the animal's growth period. Although meat from implanted cattle seems to have less fat, the same amount is simply distributed throughout an increased amount of available muscle tissue, giving the appearance of a leaner meat. If implanted and nonimplanted animals of similar frame size are slaughtered at the same weight and compared as to carcass quality grade (marbling), implanted cattle usually grade lower. However, if slaughtered at the same compositional endpoint (fat thickness, for example), carcass quality grade usually does not differ. Some studies have indicated increases in average daily gain of up to 25 percent and a \$40 per head return over cost from the use of implants. Average return over cost is \$5 to \$15 per head.

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