



## Implanting Cattle I: Proper Technique

This paper examines some basic concepts about implants and provides step-by-step instructions to properly implant cattle successfully.

### Why Do We Implant Cattle?

Of all the procedures and practices involved with raising cattle, few are understood by the public less than implants. Many of us are asked why we use "hormones" in raising cattle. Let's begin our implant discussion with a few basics about these products. We use implants for one simple reason: Implants safely and effectively improve the efficiency of beef production. Usually we receive about \$7-10 return for each \$1 investment in implants. An implant in the ear of a feedlot animal dissolves at a prescribed rate over several months and stimulates the animal's hormonal system and causes it to grow faster and more efficiently. Improvements in both ADG and F/G reduce cost of gain.

### Are Implants Safe?

There is a raging legal battle between the United States and the European community about implants. The Europeans have banned importation of beef from implanted animals and this keeps the topic in front of the US public with a steady stream of media coverage. Even though US and European scientists have concluded that the use of implants are safe and pose no health risks to consumers, unsubstantiated fear of adverse side-effects and lost market share by European beef producers have been a powerful force in maintaining the controversy. Here are the real facts about safety of implants:

With modern laboratory technology we can detect the increased tissue levels of estrogen in steer meat when cattle are implanted with zeranol (Ralgro) or estradiol. As table 1 shows, this increase is from 2.8 ng estrogen per 8 oz. meat from non-implanted steers to 3.2 and 5.2 ng for beef from steers implanted with zeranol and estradiol, respectively. These levels are only a fraction of the average level of 34 ng estrogen which is naturally present in beef from cows and heifers. Depending on where in the estrous cycle

Table 1. Estrogen Intake from Various Foods

Source	Portion size	Estrogen, ng*
Steer Beef, Non-Implanted	8 oz	2.8
Steer Beef, zeranol implanted	8 oz	3.2
Steer Beef, estradiol implanted	8 oz	5.2
Cow Beef	8 oz	34
Milk	8 oz	34
Peas	3 oz	340
Eggs	2	1,750
Cabbage	3 oz	2,050
Soybean Oil	1 Tblspn	20,000

\* ng=one billionth of a gram (0.000000001 gram)

the cow was at the time of slaughter, the level of estrogen may range from 3.3 ng to 245 ng in 8 oz of meat.

When we look at other sources of estrogen in the diet, beef supplies a tiny amount compared with other sources of natural estrogens in the typical diet: 8 oz of milk contains 34 ng, 3 oz of peas contain 340ng, 2 eggs contain 1,750 ng, 3 oz of cabbage contains 2,050 ng, and 1 tablespoon of soybean oil contains 20,000 ng of estrogen! A person would have to eat the beef from 4 ½ implanted steers to consume the amount of estrogen in just 1 tablespoon of soybean oil! The point is simply this: naturally occurring estrogens are in many foods at levels much higher than the estrogen in beef. Estrogen levels in beef have not been shown to create any health risk.

### Can Problems Occur With Implants?

Two problems can occur with implants: crushing and abscesses. First, if the pellets are crushed when implanted, the active ingredients are absorbed rapidly and the implant does not have its effect over a

*From the code of the old west:*

Coolness and a steady nerve will always beat simple quickness.  
Take yer time and you'll only need to pull the trigger once.

long time. This results in less of a response and lost opportunity dollars. The second problem is one in which the implant carries bacteria into the ear and the body mounts an immune system response which creates an abscess around the pellets. In many cases the body walls off the implant site and the pellets do not dissolve properly. Again, the cost is one of lost opportunity plus the loss of labor and the implant.

### ***Avoiding Potential Problems***

We can avoid these problems by using proper implanting technique. Many manufacturers now make guns which are spring-loaded and reduce the chance of crushing the pellets. Even with direct-drive guns (the trigger exerts direct pressure on plunger), if the needle is withdrawn as the trigger is pulled, crushing can be avoided.

Preventing abscesses requires a little bit more effort, but pays back big dividends. Keeping implant guns and needles clean and disinfected is imperative to properly implanting cattle. A sponge filled with disinfectant solution in a paint tray is recommended for this purpose. Many feedlots put implant cartridges into a ziplock bag with some Terramycin® powder and shake it to get antibiotic powder on the pellets before they implant. Dry ears should be implanted without any further treatment. Wet ears, however, should be considered as dirty ears and should be cleaned and disinfected before implanting.

### ***Which Implants Should I Use?***

The choice of implant depends on breed, age, diet, season of the year, geographic location, expected performance and market considerations. Other BABY DOLL NUTRITION NEWS issues deal specifically with choosing the best implant for a particular group of cattle. For the purpose of this issue, BABY DOLL Nutrition Ltd. endorses the use of VetLife products as the implant products of choice. The two primary reasons for this support are as follows: 1) VetLife markets a variety of implant products which all utilize one, well-designed gun. Crushing pellets is not a problem with the spring-loaded implant gun. 2) VetLife is the only implant company with a focus on making a recommendation based on goals for a particular group of cattle. With products of each implant type, VetLife can effectively supply the right implant or combination of implants to meet goals of the feedlot for each group, rather than sell one implant for all cattle and hope that on average, the implant is effective. You may call VetLife toll-free for technical or product support at (888) 462-3493.

### ***Types of Implants***

The major types of implants are androgenic (male hormones) and estrogenic (female hormones). Estrogenic implants contain estradiol, estradiol benzoate, zeranol or a combination of estradiol benzoate and progesterone. Androgenic implants contain a synthetic androgen called trenbolone acetate (TBA) or a combination of TBA and estradiol. Generally, implants which contain TBA give a greater response in average

daily gain and feed efficiency, but reduce the amount of carcass fat and marbling in the animal. This reduction of marbling has great economic consequence since fewer cattle will grade choice if the implant program is not carefully designed. Under various economic conditions, more muscular cattle grading select may be more valuable than less muscular cattle grading choice. The implant product or products to use with a given group of cattle requires knowledge of a number of factors before a recommendation can be given.

### ***Getting Ready to Implant: Supplies Needed***

To properly implant, we need an animal with its head properly restrained in a head gate or squeeze chute. It helps to "catch the head short" that is hold the animal by the head rather than by the neck. This helps prevent injury to the animal and the person implanting. Several buckets with disinfectant/water solution (one large and one small), a paint tray with a sponge soaked in disinfectant/water solution, implants, sharp implant needles, large sponge, a bread knife, a two-sided brush with nylon and metal bristles, a latex glove for the operator's hand holding the ear, and a little time and patience are needed. Having everything assembled and in place prior to running the cattle in the chute makes the job easier and helps keep the cattle calm. The more gently the cattle are handled, the cleaner and easier implanting will be.

### ***Doing the Job Right: Easy Steps to Implanting***

- 1 Assemble all the tools and equipment.
- 2 Put disinfectant solution, knife and brush into the small pail.
- 3 Put disinfectant solution and sponge into the large pail.
- 4 Put disinfectant solution and sponge in paint tray and put implant gun in paint tray with needle resting on top of sponge.
- 5 Grasp ear with gloved hand.
- 6 If ear is clean, go to step # 10 and implant ear.
- 7 If ear is wet or dirty, scrape ear with knife a few times with motion from head to tip of ear.
- 8 Using nylon bristles of brush, clean ear a few times using motion from head to tip of ear.
- 9 Using metal bristles of brush, disinfect ear once using motion from head to tip of ear.
- 10 Implant pellets into the middle third of the ear with implant gun. Needle should be place under skin between skin and cartilage. Bevel of needle should face skin of ear (opposite of normal needle entry). This reduces bacteria carried into ear with needle. Pull needle out of ear after implanting.
- 11 Feel implants through ear with slight pulling motion which helps close wound made by needle.
- 12 Squeeze sponge in large bucket several times to clean gloved hand.
- 13 Clean needle of gun by wiping it on sponge in paint tray.
- 14 Advance cartridge in gun to prepare for next animal.

Following these steps and a little practice makes implanting consistent and effective.