

# Key Points to Consider When Developing an Implant Program

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Cattle feeders often encounter tight margins that require them to employ strategies to reduce cost of production. Growth implants can be one strategy to reduce cost of production, however matching the cattle and implant strategy can be difficult to decipher. This paper will provide some general management considerations and recommendations for use of implants and additional resources. Producers should work with their UW Extension Agents, nutrition consultants, veterinarians, animal health product representatives, market representatives or other resource people to plan and evaluate an implant program that will best fit the operation and situation.

Producers need to consider these factors when deciding on an implant strategy:

- Genetics of cattle (size, breed type, frame)
- Cost of feed
- Relative importance feedlot performance (ADG and F:G)
- Relative importance of marbling (carcass quality to marketing)
- Tolerance for dark cutting cattle
- Tolerance for behavioral effects (i.e. bullying)
- Projected days on feed
- Ability to reimplant
- Carcass weight considerations
- Nutrition program
- Age or stage of production

Implants are commonly categorized by potency (low, medium, and high) and main active ingredient (estrogenic or androgenic). The potency classification of the implants refers to the effectiveness of the implant on efficiency of muscle growth. The potency of the implant is associated to type and amount of active ingredient in the implant. Low potency implants contain estrogenic compounds as active ingredients; medium potency implants contain either a single ingredient or combination of estrogenic and androgenic; and high potency implants contain higher concentrations of androgenic (most common is trenbolone acetate, i.e. TBA) and in some products is combined with estrogenic compounds.

The natural and synthetic hormones in these products are slowly released into the animal's blood stream, thus elevating the blood hormone level enough to stimulate additional growth. The implants will repartition the energy from feed

toward more muscle growth and away from fat deposition. As a result, the animal will have a greater daily weight gain, leaner carcasses at a given weight, and more efficient use of feed.

The duration of the implant is also another important consideration and refers to the time the implant effective. The duration can vary from 60 to 400 days depending on product. Note: No withdrawal time is needed for implants. The product label is an important reference for information regarding:

1. Effective time (duration of implant)
2. Active ingredients and amounts
3. Class of cattle recommended for use (i.e. nursing, feedlot, breeding, sex)

## Management Considerations

### 1. Genetics

- Breed type: Dairy steers are lighter-muscled than most beef-type cattle. This results in dairy steers requiring more days on feed, overall less efficient feed to gain, and risk of light muscle discounts on the rail.
- Size of animal (weight and frame size): Small framed cattle will reach a desired fat endpoint quicker and at a lighter weight than medium or large framed cattle. Frame size and weight of animal can be used to determine finished weight and estimate days on feed. This is important when deciding on an implant strategy.

### 2. Days on Feed

Cattle feeders will realize the most return from an implant during the last phase of feeding or ownership. Therefore, estimating slaughter or sale time to determine what implant or implant strategy is important first step. This calculation is also important to ensure the cattle will be marketed shortly after the recommended duration of the implant. If cattle are marketed prior to this date, the return on investment of the implant will be less than if marketed after the recommended duration.

### 3. Nutrition

Nutrition and other management must provide enough energy to meet the implant demands for energy for the animal. Performance gains from implants will be reduced if energy concentration of the diet, bedding, and general

husbandry are not adequate. Implants will not make up for poor management.

#### 4. Marketing Considerations

- “Finished weight”: In order to reach the same quality grade an animal will have to be heavier if implanted than if not implanted. The greater the strength and duration of the implant program the heavier the animal will have to weigh in order to reach the same quality grade as an un-implanted animal. Typically 50 to 200 pounds of additional live weight are needed for the commonly used programs.
- Marbling: Some research has shown implants can reduce marbling deposition, which would result in lower quality grades. If producers are selling cattle directly to plant on a grid or formula, use of higher potency implants could reduce percentage of cattle grading USDA Choice or higher and thus reduce the gross return to the producer. The effect on quality grade can be reduced by implementing less aggressive implant strategies; delayed implanting; proper nutrition; and timely marketing.
- Dark Cutters: Dark cutting beef is not caused by growth implants, but with high potency, androgenic implants there is a greater risk of dark cutting cattle. This can result in greater discounts on the carcass value and buyers may also discount cattle known to have received higher potency implants due to this increased risk of dark cutters.
- Stags: With higher potency, TBA implants, this can cause steers to have a bull-like appearance (i.e. ‘cresty’ necks), especially in animals that are not castrated properly. This ‘staggy’ appearance can result in discounts in the sale ring as well as on the rail. In addition, these animals can be more aggressive and cause riding in the pens, which can result in injuries and reduced performance.

#### 5. Management/Facilities

- Facilities: Producers should take into consideration the cattle handling facilities when planning your implant program. Do you have adequate facilities to safely restrain a 1000 pound steer (or whatever size the animals are to be implanted) to implant properly without undue risk of injury to both the animals and the people?
- Long Duration Implants: The most recent type of implants to become available for cattle are long duration implants. Long duration implants can contain estrogenic compounds (i.e. Encore®), whereas one product contains a combination product, where the trenbolone acetate portion is in a protective coating that does not release until a later date after implanting (i.e. Revalor XS®). This combination implant is designed to act the same as a milder estrogen like compound followed by a moderate high potency combination implant, while requiring only implanting the cattle once. These implants can be

advantageous for cattle on feed of over 200 days, where producers do not desire to re-implant the cattle.

- Behavior: Increased riding of implanted cattle has been reported, which can be the result of overly aggressive implant programs, improper implant application, or improper castration of animal. If a producer encounters problems with riding, a milder implant program should be considered.

#### 6. Implant strategies and products

- Multiple Implants: If a multiple implant program will be used, start with a mild implant and use a slightly stronger implant for each subsequent implant to maximize effectiveness. If the same product is administered when cattle are re-implanted, the performance may not be as great as if another, more potent implant is used.
- TBA implants: The final implant commonly contains trenbolone acetate (TBA), either a TBA only implant, or a combination implant containing TBA. Research trials report TBA provides the greatest returns through improved feed efficiency and added carcass weight during the final finishing period, when the animals are the least efficient in their growth.

#### 7. Age of Animal

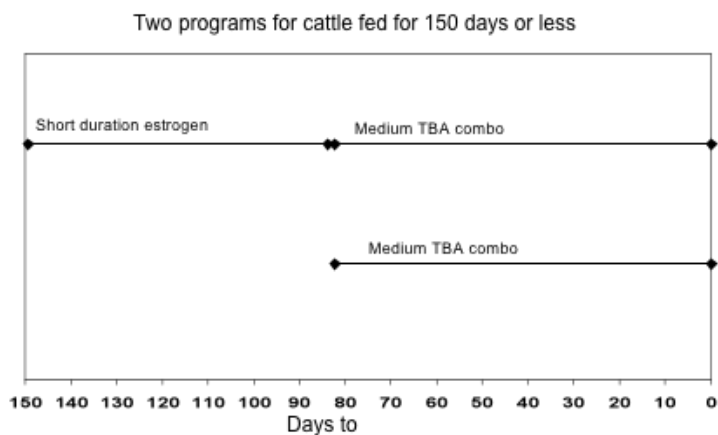
Producers, who are raising and selling younger feeder calves up to 600 pounds will not realize the same rate of return from implants as producers feeding cattle to finished weights. The lower rate of return in younger animals is because a higher proportion of weight gain is muscle than in older animals. This results in added weight at sale time for younger animals, but not as great of improvement in feed efficiency as in older, heavier animals.

#### 8. Implant technique

Producers should use good hygiene practices when implanting cattle to avoid infections and abscesses, which have been shown to render implants useless. Additionally, producers should not crush the implants when applying them or the release rate will be abnormal causing inconsistent response.

**Figures 1- 3.** Examples of implant programs for cattle fed 150, 200, and 300 days. If a producer desires to reduce the number of implants given in a 200 or 300 day program, dropping the early implants would be recommended. If the later implants would be dropped from the program, the rate of return would be less, especially for feed efficiency benefits.

Figure 1



#### Additional resources:

Implant study database at Texas Tech University <http://www.depts.ttu.edu/afs/implantdb/dbhome>

Implant resources at Iowa State University's Iowa Beef Center [http://www.iowabeefcenter.org/content/feedlot\\_mgmt\\_growth.html](http://www.iowabeefcenter.org/content/feedlot_mgmt_growth.html)

Alberta Feedlot Management Guide: Growth Implants for Beef Cattle.

Figure 2

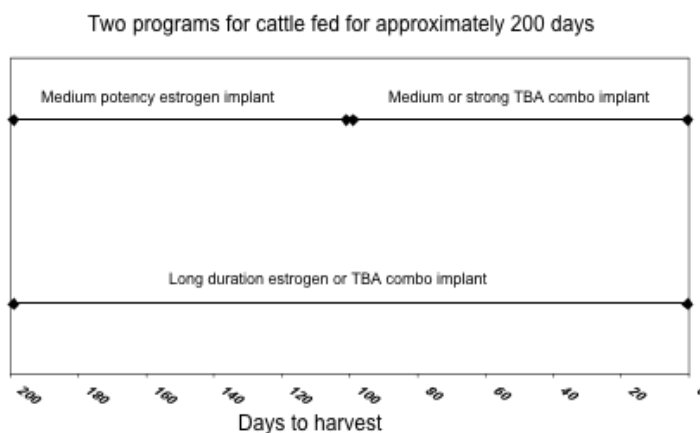


Figure 3

