

Understanding the Recent Changes in Steroidal Implant Use in Beef Cattle

Bradley J. Johnson, Ph.D.
Professor and Gordon W. Davis Regent's Chair of Meat
Science and Muscle Biology
Texas Tech University, Lubbock

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Outline



- **Benefits of growth promotants**
- **FDA implanting changes**
- **Lifetime implanting**
- **Conclusions**

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Objectives of the cattle feeding industry



- **Growth**
 - Fast growth rates
 - High rates of conversion of feed to muscle
 - High muscle to fat ratio
- **Product quality**
 - Minimal subcutaneous fat
 - Tender product



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Steroid implants with anabolic activity



PHOTOGRAPH BY SUSAN STERN

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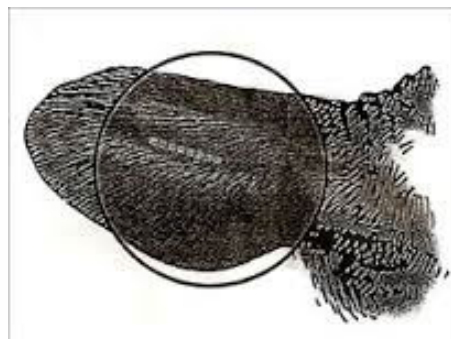
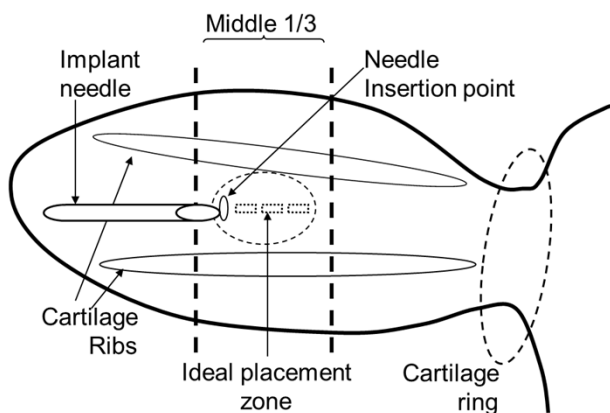
Classification: steroids with anabolic activity

- Estrogenic (female hormone)
 - ✓ *Natural - estradiol*
 - ✓ *Synthetic – diethylstilbestrol (DES)*
- Androgenic (male hormone)
 - ✓ *Natural – testosterone propionate*
 - ✓ *Synthetic - trenbolone acetate*
- Progestins (pregnancy hormone)
 - ✓ *Natural – progesterone*
 - ✓ *Synthetic- melengestrol acetate*



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Steroid implants with anabolic activity



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The use of GETs in U.S. beef production



- **Steroidal implants with anabolic activity**

- Most common and widely used GET in cattle
- Over 30 commercially-available in the U.S.
- Calf-hood, stocker, and finishing
- **Zero-day withdrawal**



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FDA's Guidance for Industry - #191

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Revalor®-XH

Intervet/Merck Animal Health

(trenbolone acetate and estradiol extended-release implant)

For Beef Heifers Fed In Confinement For Slaughter

DESCRIPTION

Revalor®-XH is an extended-release implant. One dose (implant) contains 200 mg of trenbolone acetate and 20 mg estradiol in 6 coated and 4 uncoated pellets, each containing 20 mg trenbolone acetate and 2 mg estradiol.

The small yellow pellets are coated with a polymer to provide extended release of the active ingredients. One cartridge contains 10 doses.

Manufactured by a non-sterilizing process.

INDICATIONS FOR USE

For increased rate of weight gain and improved feed efficiency for up to 200 days after implantation in beef heifers fed in confinement for slaughter.

Do not use in calves to be processed for veal. Effectiveness and animal safety in veal calves have not been established.

Not approved for repeated implantation (reimplantation) with this or any other cattle ear implant during the production phase(s) identified on labeling [beef heifers fed in confinement for slaughter] unless otherwise indicated on labeling because safety and effectiveness have not been evaluated.

Not to be used in animals intended for subsequent breeding, or in lactating dairy cows.

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GFI #191 includes – Appendix III. Target Animal Classes of Major Food Animals



- Covers guidance for all species, not only cattle
- Within “Cattle”, CVM identifies 3 major subclasses:
 - ✓Veal Calves
 - ✓Beef Cattle
(beef calves, beef steers, beef heifers, beef bulls and beef cows)
 - ✓Dairy Cattle
(dairy calves, replacement dairy heifers, dairy bulls and dairy cows)

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Beef Calves (2 variants)



Variant	Definition
1. Beef calves <2 months of age	Considered pre-ruminating and nursing their dams from birth until 2 months of age
2. Beef calves 2 months of age and older	Considered ruminating and nursing their dams from 2 months of age to weaning

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Beef Steers/Heifers (3 variants)



Variant	Definition
1. Growing beef steers/heifers on pasture (stocker, feeder, and slaughter)	Weaned growing beef steers/heifers (beef and dairy breeds) maintained on pasture and receiving the majority of their diet from grazing.
2. Growing beef steers/heifers in a dry lot	Weaned growing beef steers/heifers (beef and dairy breeds) maintained in a dry lot. They receive the majority of their diet from harvested forage (possibly with a supplement).

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Beef Steers/Heifers (continued...)

Variant	Definition
3. Growing beef steers/heifers fed in confinement for slaughter	Weaned growing and finishing beef steers/heifers (beef and dairy breeds) intended only for slaughter and confined in group pens and fed a progressively high-energy diet <i>ad libitum</i> as their sole ration until slaughter. May also be referred to as feed yard or feedlot cattle in the industry. <i>Includes growing beef steers/heifers in a grow yard (see definition below).</i>
	Growing beef steers/heifers in a grow yard – A subset population of growing beef steers/heifers fed in confinement for slaughter, these are weaned growing beef steers/heifers (beef and dairy breeds) confined in group pens and fed a moderate- to high-roughage diet <i>ad libitum</i> as their sole ration prior to the finishing stage. Grow yards may also be referred to as starter yards or backgrounding yards in the industry.

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Beef Calves

Implant Name	Indications for Use	Approved for Reimplantation in this Class
Component E-C (progesterone and estradiol benzoate implants)	For increased rate of weight gain in beef calves 45 days of age or older and weighing up to 400 pounds	No



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Implant Name	Indications for Use	Approved for Reimplantation in this Class
Component E-C w/ Tylan ⁺ (progesterone and estradiol benzoate and tylosin tartrate implants)	For increased rate of weight gain in beef calves 45 days of age or older and weighing up to 400 pounds	No
Compudose (estradiol extended-release implants)	For increased rate of weight gain for up to 200 days in beef steer calves 2 months of age and older	No
Encore (estradiol extended-release implants)	For increased rate of weight gain for up to 400 days in beef steer calves 2 months of age and older	No
Ralgro (zeranol implants)	For increased rate of weight gain in beef calves 2 months of age or older	No
Synovex C (progesterone and estradiol benzoate implants)	For increased rate of weight gain in beef calves 45 days of age and older and weighing up to 400 lbs	No




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Growing Beef Cattle on Pasture (Stocker, Feeder, and Slaughter)


Implant Name	Indications for Use	Approved for Reimplantation in this Class
Component TE-G (trenbolone acetate and estradiol implants)	For increased rate of weight gain in growing beef steers and heifers on pasture (stocker, feeder, and slaughter)	No
Component TE-G w/ Tylan ⁺ (trenbolone acetate and estradiol and tylosin tartrate implants)	For increased rate of weight gain in growing beef steers and heifers on pasture (stocker, feeder, and slaughter)	No
Compudose (estradiol extended-release implants)	For increased rate of weight gain for up to 200 days in growing beef steers on pasture (stocker, feeder, and slaughter)	No


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Implant Name	Indications for Use	Approved for Reimplantation in this Class
Encore (estradiol extended-release implants)	For increased rate of weight gain for up to 400 days in growing beef steers on pasture (stocker, feeder, and slaughter)	No
Ralgro (zeranol implants)	For increased rate of weight gain in growing beef steers and heifers on pasture (stocker, feeder, and slaughter)	No
Revalor-G (trenbolone acetate and estradiol implants)	For increased rate of weight gain in growing beef steers and heifers on pasture (stocker, feeder, and slaughter)	No
Synovex ONE Grower (trenbolone acetate and estradiol benzoate extended-release implants)	For increased rate of weight gain for up to 200 days in growing beef steers and heifers on pasture (stocker, feeder, and slaughter)	No

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Growing Beef Cattle in a Dry Lot

Implant Name	Indications for Use	Approved for Reimplantation in this Class
Ralgro (zeranol implants)	For increased rate of weight gain in growing beef steers and heifers in a dry lot	No

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Zoetis Implant Label Changes



- Synovex Choice followed by Synovex Choice (60 to 120 day later)
- Synovex Choice followed by Synovex Plus (60 to 120 day later)
- Synovex Choice followed by Synovex One Feedlot (60 to 120 day later)

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SYNOVEX® S is approved for:

- Increased rate of weight gain and improved feed efficiency in stocker and feedlot steers weighing more than 400 lb.
- For additional improvement in rate of weight gain in steers fed in confinement for slaughter, re-implant at approximately 70 days.

One implant (eight pellets) is administered to each steer by subcutaneous implantation in the middle one third of the ear.

Do not use in veal calves.

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Lifetime Implanting



- General thought is to always increase dose/potency from one phase to next
- Implanting in any phase will increase frame and extend growth potential
- Accumulation of carcass weight with increased growth in each phase

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Conclusions



- Changes went into effect July 1, 2023
- Only one phase have approved reimplanting labels
- Much to learn on implant programs for long-fed cattle
- Natural vs. Conventional

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TEXAS TECH UNIVERSITY
Department of Animal
& Food Sciences

Questions?