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Beef Tech-Line

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Implants

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What are Implants?

Implants are growth stimulants that can improve rate and/or efficiency of gain.

Implants are generally classed as estrogenic or androgenic (TBA).

Estrogenic implants contains estradiol or estrogenic type compounds (may be synthethic). These types of implants increase the circulating levels of somatotropin (ST) and insulin-like growth factor-1 (IGF-1). These substances are produced by the animal and influence how nutrients are used by the animal to produce muscle, bone and fat.

E_2 17b (highest activity)
E_2 Benzoate – 72% activity of E_2 17b
Zeranol – 30-33% activity of E_2 17b

Estrogenic implants include:

- Compudose 200
- Encore
- Ralgro (Synthetic)
- Ralgro Magnum (Synthetic)

Androgenic agent, TBA (Trenbolone acetate) is a synthetic steroid with similar structures to both estradiol and testosterone. TBA does not seem to stimulate the production of somatotropin (ST) but does significantly increase circulating levels of IGF-1. This compound has an additive effect with existing estrogenic implants of 2 to 3% for feed efficiency and 3 to 5% ADG.

TBA Implants include:

- Finiplix-S
- Component T-S
- Finiplix-H
- Component T-H

TBA plus Estradiol implants include:

- Revalor-G
- Revalor-IS
- Revalor-IH
- Synovex Choice
- Synovex Plus
- Revalor-S
- Revalor-H
- Revalor-XS

Implants – What do they do?

- Increase intake (5-10%)
- Increase lean gain (ADG 10-20%)
- Improve Feed efficiency (8-15%)

Implant Strategies

- 22-24 implants on the market
- over 2000 strategies to choose from
- Cattle are more efficient when they are younger and lighter; therefore implant strategy is more important when cattle are least efficient
- Consider working backwards from expected endpoint to initial implant
- TIMING OF THE LAST IMPLANT IS MORE IMPORTANT THAN THE FIRST!
- Strategies should be developed to reflect the targeted finish date, price spreads, genetic potential of the cattle and feeding program.
- Developing and maintaining implant strategies can be difficult but performance advantages can be achieved if properly managed

Implants Pitfalls

- Dark cutters – avoid shipping cattle with 30 days or more left on the implant
- Decreased marbling – match potency of the implant with energy of the diet
- Decreased tenderness
- NEVER stack implants by re-implanting before the preceding implant has met the re-implant window. This can lead to performance losses and severe side effects such as prolaspes.

Implant Technique

- Always read and follow the manufacturer's directions before implanting
- The only approved location is the middle third of the back side of the ear
- Improper implanting results in performance and economic loss

6% of implants are typically given incorrectly

- Abscessed 60%
- Missing, crushed, bunched etc.

Abscessed implants (Spire et al. 1999)

- Decreases ADG by 8.9%
- Decreases F/G by 8.5%
- Decreased economic return by $17.70/head

Table 1. Anabolic Implant Agents Available for Use in Beef Cattle[a]

Trade Name	Animal Approval	Relative Potency	Hormone (mg)[b]	Estrogenic Effect (mg)[c]	Androgenic Effect (mg)[d]	Reimplant Window (days)[e]
Synovex-C®	Calves < 400 lb.	Low	10 E_2 benzoate / 100 progesterone	7.2	0	45-70
Calfoid®	Calves < 400 lb.	Low	10 E_2 benzoate / 100 progesterone	7.2	0	45-70
Component E-C®	Calves < 400 lb.	Low	10 E_2 benzoate / 100 progesterone	7.2	0	45-70
Ralgro®	All classes	Low	36 zeranol	11-13	0	45-70
Synovex-S®	Steers > 400 lb.	Moderate	20 E_2 benzoate / 200 progesterone	14.4	0	70-100
Implus-S®	Steers > 400 lb.	Moderate	20 E_2 benzoate / 200 progesterone	14.4	0	70-100
Component E-S®	Steers > 400 lb.	Moderate	20 E_2 benzoate / 200 progesterone	14.4	0	70-100
Synovex-H®	Heifers > 400 lb.	Moderate	20 E_2 benzoate / 200 testosterone	14.4	200 T-4	70-100
Implus-H®	Heifers > 400 lb.	Moderate	20 E_2 benzoate / 200 testosterone	14.4	200 T-4	70-100
Component E-H®	Heifers > 400 lb.	Moderate	20 E_2 benzoate / 200 testosterone	14.4	200 T-4	70-100
Revalor-G®	Pasture steers & heifers	Moderate	8 E_2-17β / 40 TBA	8	40 TBA	120
Revalor-IS®	Steers > 400 lb.	Moderate	16 E_2-17β / 80 TBA	16	80 TBA	80-100
Revalor-IH®	Heifers > 400 lb.	Moderate	8 E_2-17β / 80 TBA	8	80 TBA	80-100
Ralgro Magnum®	Confinement steers	Moderate	72 zeranol	22-26	0	70-100
Compudose 200®	All classes	Moderate	24 E_2-17β	25.7	0	140-170
Encore®	All classes	Moderate	48 E_2-17β	43.9	0	--
Finiplix-S®	Confinement steers	Moderate	140 TBA	0	140 TBA	70-100
Component T-S®	Confinement steers	Moderate	140 TBA	0	140 TBA	70-100
Finiplix-H®	Confinement heifers	Moderate	200 TBA	0	200 TBA	70-100
Component T-H®	Confinement heifers	Moderate	200 TBA	0	200 TBA	70-100
Synovex Choice®	Confinement steers	High	14 E_2 benzoate / 100 TBA	10	100 TBA	70-100
Revalor-S®	Confinement steers	High	24 E_2-17β / 120 TBA	24	120 TBA	80-100[f]
Component TE-S®	Confinement steers	High	24 E_2-17β / 120 TBA	24	120 TBA	80-100[f]
Synovex Plus®	Confinement steers	High	28 E_2 benzoate / 200 TBA	20	200 TBA	80-100[f]
Revalor-200®	Confinement steers	High	20 E_2-17β / 200 TBA	20	200 TBA	80-100[f]
Revalor-H®	Confinement heifers	High	14 E_2-17β / 140 TBA	14	140 TBA	80-100[f]
Ravalor-XS®	Confinement steers	High	40 E_2-17β / 200 TBA	40	200 TBA	200-240 [f]

[a]As of 11/20/08
[b]E_2 = estradiol; TBA = trenbolone acetate.
[c]Zeranol has 30 to 33% the estrogenic activity of E_2-17β; E_2 benzoate has 72% the estrogenic activity of E_2-17β.
[d]T-4 = Testosterone; 1 mg TBA has 8 to 10 times the growth promotion effect as 1 mg T-4.
[e]Estimated.
[f]Should be used as terminal implants.

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Table 2. Implant Program Relative to Days from the Packer to Achieve Desired Finish End Point

Days from the packer	350 DOF Example A	350 DOF Example B	250 DOF Example	150 DOF Example A	150 DOF Example B	120 DOF Example A	120 DOF Example B	90 DOF Example A	90 DOF Example B
	↑	↑	↑	↑	↑	↑	↑	↑	↑
	↑	↑	↑	↑	↑	↑	↑	↑	↑
Day 70	↑	↑	↑	↑	↑	↑	↑	↑	↑
Day 80	↑	↑	↑	↑	↑	↑	MP	↑	↑
Day 90	↑	↑	↑	↑	MP	↑	↑	MP	HP
Day 100	↑	HP	HP	HP	↑	HP	↑		
	↑	↑	↑	↑	↑		↑		
Day 120	↑	↑	↑	↑	↑		LP		
	↑	↑	↑	↑	↑				
	↑	↑	↑	↑	↑				
Day 150	↑	↑	↑	LP	MP				
	↑	↑	↑						
Day 190	↑	↑	MP						
Day 200	HP	MP	↑						
	↑	↑	↑						
	↑	↑	↑						
Day 250	↑	↑	LP						
	↑	↑							
Day 300	MP	MP							
	↑								
Day 350	LP								

LP = low potency (Estrogenic)
MP = moderate potency (Estrogenic, Androgenic or both)
HP = high potency (Estrogenic + Androgenic)
Adapted from UNL Publication No. G97-1324-A

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Table 3. Implant Potency and Payout Period

Name	Hormonal Activity	Relative Potency	Re-Implant Window	Optimum Payout Period (days)
Ralgro	Estrogen	Low	45-90 days	60-90 days
Synovex C	Estrogen	Low	45-90 days	60-90 days
Ralgro Magnum	Estrogen	Moderate	70-100 days	80-120 days
Syovex S/H	Estrogen	Moderate	70-100 dayas	80-120 days
Finaplix S/H	Androgen	Moderate	60-80 days	60-80 days
Revalor IS/IH	Androgen Estrogen	Moderate	70-100 days	90-120 days
Syovex Choice	Androgen Estrogen	Moderate	70-100 days	120-140 days
Revalor S/H	Androgen Estrogen	High	90-100 days	90-120 days
Synovex Plus	Androgen Estrogen	High		90-120 days
Revalor XS	Androgen Estrogen	High		160-200 days

Adapted from UNL Publication No. G97-1324-A