

Beef cattle implant selection and protocols

Eric Behlke, MS, PhD, DVM
Feedlot Health Management Services by TELUS Agriculture
Okotoks, AB T1S 2A2, Canada

Abstract

Growth-promoting implants are a technology that offer beef cattle producers a very large return on investment. However, there are many considerations relative to implanting versus not implanting, selecting the most appropriate implant protocol, and ensuring that implant strategies are compliant with current regulations.

Key words: beef cattle, implants, implant protocols

Implanting considerations

There are several factors that must be considered when making the decision to implant or not implant a beef animal. An increase in animal performance associated with implanting has been documented across several different production scenarios.¹ Depending on current feeder or live cattle prices, the return on investment associated with utilizing a growth promoting implant is typically greater than 10X. The paradigm does exist with some producers that the value of non-implanted feeder calves for niche markets will offset the value of increased gains associated with growth promoting implants. However, when formally investigated,² it was concluded that decisions to not implant nursing beef calves for the distinct purpose of receiving an increase in sale price was not supported, and that unless well-planned marketing strategies are used that capture a premium for “natural” (or non-implanted) calves, beef producers will receive reduced revenue from calf sales by choosing to not implant nursing calves. Lastly, the intended use of animals is an important consideration. Implanting suckling heifers and heifers at the time of weaning has a demonstrated detrimental effect on subsequent pregnancy rate,³ and that negative effect must be balanced with the value of the resulting gain given the current economic conditions.

Implant selection

Selecting the most appropriate growth promoting implant can initially seem overwhelming, as there are almost 30 products currently available for use in the United States (Table 1. adapted from previous AABP proceedings).¹ However, once a systematic approach is taken to understanding that each manufacturer (i.e., Elanco, Merck and Zoetis) typically has products for different production settings, the selection process hinges on understanding which types of products have a label claim and are most appropriate for the specific production setting of interest. For suckling calves, producers should consider low-dose estrogenic implants. Stocker and backgrounder operations should focus on low-dose combination, moderate-dose estrogenic, or

moderate-dose combination implants. In most circumstances, the initial implant in a feedlot scenario is a moderate-dose combination implant and the terminal implant is typically a high-dose combination implant. Last, backgrounders and feedlots have the option of extended-release implants, and these implants may become more important with the recently introduced re-implant regulations that are described in the subsequent section.

Re-implant regulations

On April 13, 2021, the following statement was issued by FDA’s Center for Veterinary Medicine: “*Unless otherwise approved and labeled for reimplantation, only one ear implant may be given to an animal during a specific stage of growth.*” Subsequently, a “grace period” was granted until the end of June, 2023 for producers and manufacturers to plan for label and management changes. Currently, there is 1 manufacturer that has 3 products with a re-implant label claim, and it is likely that re-implant claims will be added to the labels of additional products by additional manufacturers in the near future. Taken together, it is imperative that producers remain compliant with the most current labels and regulations when planning re-implant strategies.

Discussion

Several factors such as current market prices for feeder and/or live cattle, specific marketing arrangements for niche programs, and the potential for females to be retained in the herd as replacements all must be considered when making decisions regarding growth promoting implants. Once the decision has been made to utilize an implant, several options exist. However, understanding which types of implants are most appropriate and labeled for which phase(s) of production drive the implant selection decision.

References

1. Parr SL. Anabolic implant strategies in beef production: A practical guide. *Proc Am Assoc Bov Pract Conf* February 2020; 53(1):20-24.
2. Rogers GM, King ME, Hill KL, Wittum TE, Odde KG. The effect of growth-promoting implant status on the sale price of beef calves sold through a livestock video auction service from 2010 through 2013. *Prof Anim Sci* 2015; 31:443-447
3. Selk G. Implants for suckling steer and heifer calves and potential replacements heifers, in impact of implants on performance and carcass value of beef cattle symposium. *Oklahoma Agric Exp Stn P-957* 1997; 40-50.

Table 1: Implants available for use in the U.S. (adapted with permission from previous AABP Proceedings).¹

Implant	Dose ¹	When to use ¹	Manufacturer	ANT (mg) ²	E (mg) ²	A (mg) ²	P (mg) ²	Pellets	Coated pellets
Ralgro	LE	Calf - flexible	Merck		36 Z			3	
Synovex-C	LE	Calf	Zoetis		10 EB		100	4	
Component E-C	LE	Calf	Elanco	29 TT pellet	10 EB		100	4+1	
Revalor-G	LC	Stocker	Merck		8 E2	40 TBA		2	
Component TE-G	LC	Stocker	Elanco	29 TT pellet	8 E2	40 TBA		2+1	
Synovex-S	ME	Stocker/BG	Zoetis		20 EB		200	8	
Component E-S	ME	Stocker/BG	Elanco	29 TT pellet	20 EB		200	8+1	
Synovex-H	MC	Stocker/BG	Zoetis		20 EB	200 TP		8	
Component E-H	MC	Stocker/BG	Elanco	29 TT pellet	20 EB	200 TP		8+1	
Revalor-IS	MC	Initial feedlot	Merck		16 E2	80 TBA		4	
Component TE-IS	MC	Initial feedlot	Elanco	29 TT pellet	16 E2	80 TBA		4+1	
Synovex-choice	MC	Initial feedlot	Zoetis		14 EB	100 TBA		4	
Revalor-IH	MC	Initial feedlot	Merck		8 E2	80 TBA		4	
Component TE-IH	MC	Initial feedlot	Elanco	29 TT pellet	8 E2	80 TBA		4+1	
Revalor-S	HC	Terminal	Merck		24 E2	120 TBA		6	
Component TE-S	HC	Terminal	Elanco	29 TT pellet	24 E2	120 TBA		6+1	
Revalor-H	HC	Terminal	Merck		14 E2	140 TBA		7	
Component TE-H	HC	Terminal	Elanco	29 TT pellet	14 E2	140 TBA		7+1	
Revalor-200	HC	Terminal	Merck		20 E2	200 TBA		10	
Component TE-200	HC	Terminal	Elanco	29 TT pellet	20 E2	200 TBA		10+1	
Synovex-plus	HC	Terminal	Zoetis		28 EB	200 TBA		8	
Finaplix-H	HA	Terminal	Merck			200 TBA		10	
Compudose	ME	Flexible	Elanco	0.5 OTC	25.7 E2				
Encore	HE	Flexible	Elanco	0.5 OTC	43.9 E2				
Revalor-XS	HC	Feedlot	Merck		40 E2	200 TBA		10	6
Revalor-XH	HC	Feedlot	Merck		20 E2	200 TBA		10	6
Synovex one feedlot	HC	Feedlot	Zoetis		28 EB	200 TBA		8	8
Synovex one grass	MC	Stocker	Zoetis		21 EB	150 TBA		6	6

¹ LE=low dose estrogenic; LC=low dose combination; ME=moderate dose estrogenic; MC=moderate dose combination; HC=high dose combination; HA=high dose androgenic; HE=high dose estrogenic; BG=backgrounding in confinement

² ANT=Antibiotic; TT=Tylosin Tartrate; OTC=Oxytetracycline; E=Estrogenic; A=Androgenic; P=Progesterone; Z=Zeranol; E2=Estradiol 17-β; EB=Estradiol Benzoate; TBA=Trenbolone Acetate; TP=Testosterone Propionate.

