

Optaflexx™ and Zilmax™

Beta agonists: Growth promoting feed additives for beef cattle

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Growth promoters, such as implants and beta agonists, are available for use in cattle. Implants have been available for cattle producers since 1975, but beta agonists for beef cattle became commercially available in 2004. These growth promoters primarily change partitioning of energy from feed and shuttle more to muscle instead of fat deposition, thereby increasing weight gain, ribeye area, and total red meat yield when used. This factsheet will address frequently asked questions regarding using beta agonists as growth promoter for finishing beef.

What is the difference between implants and beta agonists?

Implants are products containing natural and synthetic hormones and affect the hormone status of the animal to promote growth. Implants are placed in the ear of the cattle and require no withdrawal time prior to slaughter. Beta agonists are compounds where the effects occur at the cellular level and do not affect the hormone status of the animal (not a steroid). Additionally, beta agonists are medicated feed additives and withdrawal times can vary among products.

What beta-agonists are currently available for use in cattle?

Optaflexx™ is a product available from Elanco Animal Health. This product contains ractopamine hydrochloride as the active ingredient, which is the same compound

that is in Paylean™ (labeled only for use in swine). Some feed supplements for show cattle are being marketed to contain this product. Feed supplements are available for show cattle containing this product.

Zilmax™ is a product available from Intervet, Inc. This product contains zilpaterol hydrochloride as the active ingredient. Zilmax™ is only available to commercial feedlot for use, whereas Showmaxx™ (show steer feed supplement) has been approved for sale directly to beef producers.

What are major differences between these products?

Generally, Zilmax™ is a more potent beta agonist than Optaflexx™. The differences between products in approved label guidelines and cattle performance are outlined in Table 1.

Are there any negative consequences to feeding?

Research has not observed any negative affects on animal conformation. However, cattle with poor skeletal structure (post legged, straight fronted), the added muscle could cause these problems to become more evident.

Why are these products only labeled for use in the final days of the finishing period?

Market cattle become inefficient during the last month of the finishing period, because they are depositing less

Table 1. Differences in beta agonists

Item	Optaflexx™	Zilmax™
Active ingredient	ractopamine hyperchloride	zilpaterol hydrochloride
Approved Label Guidelines		
Duration of feeding	28-42 days	20-40 days
Optimal feeding duration	28-35 days	20 days
Withdrawal time	None	3 days
Weight gain	Increased by 10-21 lbs	Increased up to 21 lbs
Feed efficiency	Improved 14-21%	Improved 14-21%
Ribeye area	Up to 0.5 sq. in.	Up to 0.5 sq.in.
Quality grade	Minimal impact	None to slight reduction
Tenderness	Minimal impact	None to slight reduction

muscle and more fat. Beta agonists redirect energy to more protein synthesis rather than fat synthesis. This allows the animal to be more efficient during this period when fed than its counterparts. When these products are fed to younger cattle these products demonstrate little or no response in muscle deposition or efficiency and results in not being cost effective.

Why are these products not labeled to be fed for more days?

Research trials have reported these products are only effective for 28 to 35 days. After this time the performance returns to the level prior to using the products. The body adapts to the active ingredient during this time and thus loses its effectiveness. Note: Feeding the product for longer the label is ILLEGAL.

What happen if you stop feeding the beta agonists?

Approximately 4 to 8 days after they are removed from the diet, performance will return to the same level prior to the use of the product. Therefore, the animal will start to shift more energy to fat synthesis rather than muscle deposition.

Can you feed more the recommended dosage?

No this is off label and ILLEGAL and veterinarians are not allowed to prescribe off label use of these products. In addition, research trials have reported feeding products at higher levels show little or no effect on animal performance or muscle deposition.

Is Paylean™ different than Optaflexx™?

Both have the same active ingredient, but fed at different concentrations. Paylean™ is only labeled for use in swine and Optaflexx™ is only labeled for use in cattle. These products can only be used in the species on the label. If used in other species this off label and ILLEGAL.

Can I feed these products to breeding stock (heifers or bulls)?

These products are NOT approved for use in breeding animals and this off label and ILLEGAL. Studies have not been conducted to know what the effects of these compounds have on reproduction.

****All medicated feed additives are to be used in accordance with the FDA approved label. Extra-label use of medicated feed additives is strictly prohibited by federal law and no one has the authority to adjust the dose as labeled, including veterinarians.***

Resources:

Adpated from: The Facts about Optaflexx: Ractopamine for Cattle. J. Cleere. <http://animalscience.tamu.edu/images/pdf/beef/beef-optaflexx.pdf>

Delmore, R. J., J. M. Hodgen and B. J. Johnson. 2010. Perspectives on the application of silpaterol hydrochloride in the United State beef industry. J. Anim. Sci. 88:2825-2828.