CAN YOU MAKE
HAY PAY?

Goodbye Pinkeye
Muscle Up
With Beta Agonists
Buckaroos
& Border Collies
“Growth enhancing technologies help us produce safe, wholesome, and nutritious beef at a lower cost,” explains Michael Engler, PhD, President and CEO of Cactus Feeders.

Established in 1975 by Dr. Engler’s father, Paul, this operation has seven feedyards in the Texas Panhandle and three in southwest Kansas, with a combined capacity of 520,000 head. Cactus Feeders constantly strives to improve its operation, whether it’s introducing new equipment, feed ingredients, or growth enhancing technologies.

Two of the newest growth enhancing technologies are referred to as beta agonists. Better known by their brand names, Optaflexx® (ractopamine) produced by Elanco™ and Zilmax® (zilpaterol) made by Intervet/Schering-Plough, they were approved for use in beef cattle in 2003 and 2006, respectively.

Ty Lawrence, PhD, Assistant Professor of Animal Science and Director of the Beef Carcass Research Center at West Texas A&M University (Canyon, Texas) recalls, “Zilpaterol was created to be a competitor to albuterol, an asthma medicine used in human medication. Consequently, the original safety tests involved giving the product to humans. It wasn’t as effective as albuterol, and was put on the shelf.” Years later, scientists discovered that when cattle were fed zilpaterol, they experienced leaner growth, and new safety trials, geared to cattle, were conducted.

These relatively new products are available throughout the United States, Canada, Mexico, and South Africa. No
The ribeye steak on the left (Carcass 9) is from an animal that did not eat beta agonists. Most cattlemen would have a difficult time telling these two animals apart just by looking at them in the pen.

The ribeye steak on the right is from an animal that was fed beta agonists. Notice this is the plumper, bigger steak. It has the same amount of marbling as the steak on the left, but the fat appears diluted because there is more muscle.

Adverse reactions in bovines or humans were discovered during extensive testing conducted by the Food and Drug Administration (FDA). In addition, South Africa, Mexico, and Canada conducted their own safety trials, before allowing beta agonists to be fed to cattle.

**JUST FOR THE FEEDYARD**

Optaflexx® and Zilmax® are approved only for feedyard use, specifically confined to animals intended for slaughter. “That’s really where the infrastructure is available to precisely apply the product in the controlled settings of the feedyard,” explains Paul Defoor, PhD, Vice-President and Director of Performance Analysis at Cactus Feeders.

Mixed in feed rations at the mill or in mix-box feed trucks, this feeding schedule provides some flexibility. Dr. Lawrence explains, “You are never locked in until the first day of feeding. Once you feed it the first day, you are legally locked into a minimum of twenty-eight to forty-two days for Optaflexx® (with no withdrawal period before slaughter) and a minimum of twenty to forty days for Zilmax® (with a three day withdrawal period before slaughter) to be within label compliance.”

Although ractopamine, marketed as Paylean®, was first approved for pork, scientists quickly saw the benefits to the beef industry. Running between twenty-five to eighty-five cents per head / per day, beta agonists enable feedyard steers, heifers and cows to gain fifteen to twenty pounds without increasing feed intake.

Dr. Lawrence explains, “If you are a feedyard producer, the advantage is found in improved efficiency, improved
average daily gain, and improved feed to gain, so it now takes fewer pounds of feed to produce a pound of gain and increased salable weight.”

Cactus Feeders utilizes both Optaflexx® and Zilmax®. According to Dr. Engler, “They have combination clearances with all the other FDA approved products we use in the feedyard today. So we don’t have to change the base ration to add these products to that ration.” He adds, “When it first came out, it didn’t have all those clearances, so it was even more complicated back then. But today, it is simpler to use.”

**HIGH STANDARDS**

As with any ration supplement, there are procedures that must be followed. Dr. Lawrence says, “Both of these (Optaflexx® and Zilmax®) are feed additives, so you are going to mix them in the mill with the feed. It’s probably not for everybody. You have to have a system in place with checks and balances.”

Dr. Engler reports, “The government has approved (beta agonists) for a specific manner of use, so we have to make sure that we use them according to the label. In some respects, that is a bit of a disadvantage because it makes your operation more complex.”

“There’s a greater overall intensity and precision required,” says Dr. Defoor. Feedyard managers must maintain paperwork documenting the use of these products.

FDA inspectors also check feedyard records. Dr. Defoor adds, “The FDA inspects our operations and procedures as they pertain to FDA-approved products. In the case of one of the beta agonists, even the feed mills have to be licensed to a certain standard.”

“It’s not right for all cattle,” explains Dr. Lawrence. “You’ve also got to consider how you’re selling these cattle. If you’re selling them on the grid system where heavy weight discounts might be something to avoid and you have big, heavy continental breeds (Charolais, Limousin, Simmental), you could cause yourself a bigger discount when adding beta agonists to them.”

He advises sorting the heavy cattle and feeding only lighter-weight animals. “Holstein and other lighter-muscled genotypes, such as Angus, Shorthorn, or Hereford, would benefit more. You’re adding muscling to something that needs it; that is a positive benefit and you won’t cause a monetary detriment to yourself.”

The average person wouldn’t notice if feedyard calves had been fed Optaflexx® or Zilmax®. Dr. Engler says, “To the same degree of finish, we have cattle that would appear the same with or without the (beta agonists). Most persons, including myself, have a very difficult time telling them apart.”

Optaflexx® and Zilmax® shift energy use for fat production to protein production. “It increases muscling, particularly in the hindquarters,” Dr. Lawrence says with a smile. “Increased muscling dilutes the fat stores, resulting in less apparent marbling. If we add three-tenths (of a square inch) more muscle that is evenly distributed and we don’t add any more fat, then we’ve diluted what was there.”

“Our rancher friends have spent a lot of time and effort to reduce the amount of fat on these carcasses by bringing in better and better genetics in the cow herd,” reports Dr. Engler. “Over the years we have improved the leanness of our carcass. We think that gives us a more heart healthy, lower fat product to compete with some of our competing meats, which started off with less fat.”

This results in healthier, leaner beef that retains the delicious beef flavor, aroma, and texture consumers crave. Dr. Engler says, “There is an extensive amount of data that says that when aged properly, and we think all beef should be aged to increase the tenderness of the beef the consumer eats, the consumer cannot tell the difference between the beef produced using these technologies and beef produced without them.”

“We use (Optaflexx® and Zilmax®),” Dr. Engler says, “so we can produce beef for the consumer with the least amount of resources, and we can pay more for feeder cattle. When the cattle feeders are making money, then the price of feeder cattle usually improves.” He continues, “To keep the ranching sector healthy, the cattle feeding sector has to stay profitable or average profitability over time, otherwise we’re not going to be there to buy the animals.”

Dr. Lawrence adds, “Optaflexx® and Zilmax® are additional growth enhancement technologies designed to improve beef production efficiency. They allow beef producers to put beef on the American table more efficiently.”

“It behooves the cattle business to sell our beef to more than just rich people. We need to produce a product for mainstream Americans. We built our business on ‘Everybody Loves Beef.’ Why not try to produce beef for everybody?” explains Dr. Engler.

“That’s why I’m proud to use these growth technologies, so that I can satisfy more and more consumers with a great meal, based on beef being at the center of the plate.”