

**We support** cattle farmers in their commitment to continue finding better ways to provide quality beef for you and your family. Zilmax<sup>®</sup> (zilpaterol hydrochloride) is a Food and Drug Administration (FDA)-approved feed supplement that improves cattle's natural ability to convert feed into more lean beef<sup>1,2,3</sup> that is flavorful, tender and juicy.<sup>4,5</sup>

## Sustainability

### Raising responsible beef

Farmers are working hard to meet consumer expectations about beef. Many improvements in the way cattle are raised have helped cattle farmers provide more high-quality beef with less impact on the environment. Research shows that today, farmers provide 13 percent more total beef from 30 percent fewer animals, and the carbon footprint of beef has been reduced by more than 16 percent.<sup>6</sup> Vital natural resources are being conserved. In fact, each pound of beef raised today (compared to 1977) uses:<sup>6</sup>

- 19 percent less feed
- 33 percent less land
- 12 percent less water (to grow the feed and the animals)
- 9 percent less fossil fuel energy

At Merck Animal Health, we know a key aspect of sustainability is continuing to help farmers find better ways to provide safe, quality, affordable beef raised in an environmentally responsible manner. The conservation of natural resources that results from feeding Zilmax to cattle has long been a focus, and is well documented. (See sidebar.)

### Keeping beef affordable

As the growing global middle class consumes more beef, overall demand is rising and driving beef prices higher. This is occurring at a time when U.S. beef cattle numbers are at their lowest point in more than 60 years.

Based on recent data, when Zilmax wasn't used, the supply of boneless beef in the U.S. was reduced by about 105 semi-loads per week. That's more than enough beef to supply the weekly demand of more than 4.3 million people in the U.S.<sup>7</sup> Going forward, it will be difficult to produce enough beef for our growing global population without the use of innovative solutions that increase the amount of meat available, while preserving natural resources.

Zilmax helps cattle make the most of what they eat. And, that means cattle farmers can continue to make progress in providing more high-quality beef as an affordable choice for all to enjoy, while conserving natural resources.

### Zilmax helps conserve our natural resources

Zilmax helps improve cattle's natural ability to convert feed into more lean beef<sup>1,2,3</sup> instead of excess fat. This means more beef from fewer cattle. Fewer cattle = less waste and less use of land, water and energy.<sup>6</sup> For example, for every 100 head of beef cattle fed Zilmax, compared to cattle not fed this type of feed supplement:

- 3,000 additional pounds of beef are produced – enough to feed 53 U.S. consumers for an entire year
- 10,000 gallons of water are conserved – enough drinking water for 39 people for an entire year
- 28,000 pounds of feed are conserved<sup>7</sup>

## Sustainability Benefits<sup>7</sup>



### References

- <sup>1</sup> FDA. 2006. Freedom of information summary. Original new animal drug application NADA 141-258. Zimax (zilpaterol hydrochloride) Type A medicated article for cattle fed in confinement for slaughter. <http://www.fda.gov/downloads/AnimalVeterinary/Products/ApprovedAnimalDrugProducts/FOIADrugSummaries/ucm051412.pdf>. Accessed Apr. 26, 2007.
- <sup>2</sup> Hilton, G. G., Garmyn, A. J., Lawrence, T. E., Miller, M. F., Brooks, J. C., Montgomery, T. H., Griffin, D. B., VanOverbeke, D. L., Elam, N. A., Nichols, W. T., Streeter, M. N., Hutcheson, J. P., Allen, D. M. and Yates, D. A. 2010. Effect of zilpaterol hydrochloride supplementation on cutability and subprimal yield of beef steer carcasses. *J. Anim. Sci.* 88:1817-1822.
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- <sup>4</sup> Mehaffey, J. M., Brooks, J. C., Rathmann, R. J., Alsup, E. A., Hutcheson, J. P., Nichols, W. T., Streeter, M. N., Yates, D. A., Johnson, B. J. and Miller, M. F. 2009. Effect of feeding zilpaterol hydrochloride to beef and calf-fed Holstein cattle on consumer palatability ratings. *J. Anim. Sci.* 87:3712-3721.
- <sup>5</sup> Hilton, G. G., Montgomery, J. L., Krehbiel, C. R., Yates, D. A., Hutcheson, J. P., Nichols, W. T., Streeter, M. N., Blanton Jr., J. R. and Miller, M. F. 2009. Effects of feeding zilpaterol hydrochloride with and without monensin and tylosin on carcass cutability and meat palatability of beef steers. *J. Anim. Sci.* 87:1394-1406.
- <sup>6</sup> Capper, J. L. 2011. The environmental impact of beef production in the United States: 1977 compared with 2007. *J. Anim. Sci.* 89:4249-4261.
- <sup>7</sup> Data on file.

Merck Animal Health

For more information, go to [www.zimax.com](http://www.zimax.com).

### IMPORTANT SAFETY INFORMATION

Zimax has a withdrawal period 3 days prior to slaughter. Not for use in animals intended for breeding. Do not allow horses or other equines access to feed containing zilpaterol. Do not use in veal calves. Not to be fed to cattle in excess of 90 mg zilpaterol/head/day in complete feed. If pen consumption of complete feed exceeds 26.5 lb/head/day (90% dry matter basis), zilpaterol should not be fed in complete feed. For complete safety information, refer to product label and Zimax website.

**Zimax**<sup>®</sup>  
[zilpaterol hydrochloride 48%]