Zilmax: Slaughterhouse Observations Raise New Concerns about This Growth-Promoting Drug

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Story at-a-glance

- Zilmax is class of non-hormone drugs recently used in animals to promote growth. It, and others like it are fed to cattle in the weeks prior to slaughter to increase weight by as much as 30 pounds of lean meat per cow
- Tyson Foods announced in September that it would stop buying Zilmax-fed cattle for slaughter due to concerns about Zilmax potentially causing health or behavioral problems for some cattle
- Zilmax is already banned for use in horses due to severe side effects, including muscle tremors and rapid heart rates that can last as long as two weeks after stopping the drug
- Before beta-agonsists like Zilmax were approved, scientists worried that this class of drug could result in increased cardiovascular risk for consumers
- Merck is actively working on getting Zilmax back on the US and Canadian markets

By Dr. Mercola

One of the reasons I stress the importance of only eating organic, grass-fed beef is because animals raised in confined animal feeding operations (CAFOs) are given unnatural inferior feed loaded with antibiotics (i.e. grains instead of grass, and most of it genetically engineered at that), along with a variety of veterinary drugs.

Many of these drugs are administered for prophylactic purposes to prevent illness, and others are given as growth promoters.

Zilmax (Zilpaterol) is one such drug. It's a beta-adrenergic agonist, also known as beta-agonist; a class of non-hormone drugs used in animals to promote growth. It, and others like it are fed to cattle in the weeks prior to slaughter to increase weight by as much as 30 pounds of lean meat per cow. Beta-agonist drugs, as a class, have been used in US cattle production since 2003.

While 26 countries currently allow beta-agonists in food production, America's use of such drugs, which also includes the beta-agonist ractopamine, for promotion of growth and lean-meat yield has created challenges in the global market, including current trade barriers in Russia[1]. Now, Zilmax is also causing trouble on our own turf. As reported in the featured article[2]:

"Zilmax became the focus of attention in the livestock industry after Tyson Foods Inc said on August 7 that it will stop buying Zilmax-fed cattle for slaughter beginning next month. Tyson, the biggest US meat processor, said it was concerned about Zilmax potentially causing health or behavioral problems for some cattle.

Merck's Animal Health unit announced on August 16 that it would halt US and Canadian sales of Zilmax, pending additional company research and review."

Merck has no plans on discontinuing the product, however; recently telling Reuters[3] that it is in fact pushing to bring the drug back to market both in the US and Canada. The company says it stands behind the safety of the drug and is working on developing a quality control program to ensure its proper use.

Zilmax Causes Serious Side Effects in Horses, So Why Use It In Cattle?

Zilmax is already banned for use in horses due to severe side effects, including muscle tremors and rapid heart rates that can last as long as two weeks after stopping the drug[4]. It's not a major stretch to imagine similar problems might occur in cattle. According to a 2008 veterinary case report[5] involving three horses that were given Zilmax:

"Within 90 minutes the horses had muscular tremors which began in the skeletal muscles of the neck, shoulder, and foreleg and spread throughout the visible skeletal muscles. Intermittent visible muscular tremors continued for up to 1 week after the initial dose of zilpaterol.

They also all had certain changes to their blood chemistry, such as elevated BUN, creatinine, and glucose and mild hyponatremia and hypochloremia... Liver and kidney changes were also noted."

Ractopamine, another beta-agonist, is yet another drug used in the US, even though it's been banned in 160 other countries due to its potential health hazards. The researchers also noted that Zilmax is about 125 times more potent than ractopamine, saying this may be why side effects were overlooked in connection with ractopamine studies.

In an email to Reuters, the US Food and Drug Administration (FDA) stated it had received "a very small number of reports of lameness or lying down" in cattle that had been fed Zilmax[6]. According to a Wall Street Journal[7] report:

"A growing number of cattle arriving for slaughter at US meatpacking plants have recently shown unusual signs of distress. Some walked stiffly, while others had trouble moving or simply lay down, their tongues hanging from their mouths. Some even sat down in strange positions, looking more like dogs than cows."

Since the animals' diet in general was unchanged, livestock scientists started suspecting the suddenly odd behavior might be associated with the addition of the beta-agonist drug, which has only recently become widely used among cattle ranchers.

Is it Really Safe to Listen to "Experts" that Were Wrong Before?

Not surprisingly, conflicts of interest are rampant among supporters of the drug, who oftentimes have direct ties to the drug companies manufacturing it.

For example, Richard Raymond[8], the US Department of Agriculture (USDA) chief responsible for promoting Zilmax is not only a paid food safety and public health consultant for Elanco[9], the Animal Health branch of Eli Lilly that produces two ractopamine products; he was also the chair of the US Codex Policy Committee, which provides guidance to US delegations on the Codex Alimentarius Commission.

Raymond has also been a defender of rbST/rbGH milk[10, 11]—another Elanco product[12]. This artificial growth hormone has been banned in Canada, Europe, Japan, Australia and New Zealand due to cancer risks and other health concerns. Although it isn't generally well-known, rbST is connected to the beef industry, in that rbST also

increases muscle area and reduces fat thickness—basically what Zilmax does—as described in a 2001 study[13].

In an August 2, 2013 article[14] penned for Facts About Beef, Raymond states he believes beta-agonists can help improve global food security, seeing how the drugs lead to six to seven pounds of additional meat per pig and 30 pounds of additional meat per market cow.

He also claims there's no published data showing that beta-agonists have an effect on animal welfare—despite the fact that such studies do indeed exist, such as the one referenced above, published in the Journal of Equine Veterinary Science in 2008[15].

Do Beta-Agonists in Meat Pose Human Health Hazards?

According to an article published in the Journal of Animal Science in 1998[16], there's data on "human intoxication following consumption of liver or meat from cattle treated with beta-agonists." (In the case of the beta-agonist clenbuterol, pharmacological effects might be expected after consuming 100-200 grams of contaminated product.) The authors write:

"The use of highly active beta-agonists as growth promoters is not appropriate because of the potential hazard for human and animal health, as was recently concluded at the scientific Conference on Growth Promotion in Meat Production (Nov. 1995, Brussels)."

Similarly, before it was approved, scientists worried that beta-adrenergic agonists illegally used could result in increased cardiovascular risk for consumers[17]. Today we don't have to worry about eating *illegally* treated meat, since these drugs are approved and widely used, but should we be concerned about cardiovascular health risks from non-organic meat products? As for Richard Raymond, with regards to such questions of safety, he writes, in part:

"It is... estimated that over 700 million pigs have been supplemented with beta-agonists since its approval 14 years ago. I am not an Ag Economist, but I can do the simple math that says if each of those 700 million pigs produced an additional 6 pounds because of beta-agonist supplementation, that would be over 4 billion additional pounds of pork, or put another way, an additional 16 billion four ounce servings of protein.

As the former Undersecretary for Food Safety at USDA, I also know that in those billions of servings of pork and beef, not one single incident of a foodborne illness or

side effect in a human has been reported. That should make us feel confident as far as human safety goes."

My question is, since beta-agonist drugs do not affect biology in the way a pathogen like, say, salmonella or E-coli might, just *how* would you know that a meat product contaminated with drug residue has affected your health? Especially if we're discussing about side effects like weight gain, or even heart- and muscle-related problems similar to those experienced by horses?

Barring an acute reaction, how would you actually pin beta-agonist side effects to any particular piece of meat in your diet? This is why you need to perform scientific studies to assess effects and risks. Clearly, to say that lack of foodborne illness reports[18] is a statement about the drug's safety for use in food animals is ludicrous, and I think he really should know better. But, for a lazy reader, such a comment just might put them at ease.

It may be worth noting that, in humans, beta-agonists are used to treat asthma, among other things. Interestingly enough, stubborn weight gain is a common complaint among asthma patients using Advair (a beta-agonist drug)—so much so that the manufacturer has added weight gain to the post-marketing side effects. Other adverse reactions to beta-agonist drugs include increased heart rate, insomnia, headaches, and essential tremor. As you can see, these are eerily similar to those experienced by horses, and it appears, some cows.

According to Randox Food Diagnostics[19], which has created tests for Zilmax residue in beef, use of beta-agonists prior to slaughter is of particular concern "as this poses a risk to the consumer and may result in consumer toxicity." Research findings to this effect include:

- A 2003 study in Analytica Chimica Acta[20]: Residue behaviour of Zilmax in urine, plasma, muscle, liver, kidney and retina of cattle and pig was assessed. Two heifers and 16 pigs were treated with Zilmax and slaughtered after withdrawal times varying from 1 to 10 days. The drug was detectable at each point of time examined in all matrices except plasma after a withdrawal period of 10 days. It's worth noting that in the US, the recommended market window is three to 10 days after discontinuing Zilmax[21]
- A 2006 study[22] on residues of Zilmax in sheep found detectable levels in liver and muscle tissues up to nine days after discontinuation of the drug

What Should You do if You Don't Want Drugs and Chemicals in Your Food?

As the US agriculture industry now stands, antibiotics, pesticides, genetically engineered ingredients, hormones and countless other drugs are fair game in your food. So if you purchase your food from a typical supermarket, you are taking your chances that it's teeming with chemicals and drugs -- even those that have been banned in other countries. So please, do your health a favor and support the small family farms in your area. You'll receive nutritious food from a source that you can trust, and you'll be supporting the honest work of a real family farm.

It all boils down to this: if you want to optimize your health, you must return to the basics of healthy food choices. Put your focus on WHOLE organic foods -- foods that have not been processed or altered from their original state, but rather grown or raised as nature intended, without the use of chemical additives, drugs, hormones, pesticides and fertilizers.

It's as simple as that!

It is not nearly as daunting a task as it may seem to find a local farmer that can supply your family with healthy, humanely raised animal products and produce. At LocalHarvest.org, for instance, you can enter your zip code and find farmers' markets, family farms, and other sources of sustainably grown food in your area, all with the click of a button. Once you make the switch from supermarket to local farmer, the choice will seem natural, and you can have peace of mind that the food you're feeding your family is as safe as possible.

We have to stop supporting our current CAFO practices for meat production. If you'd like to read more about what the damage to the organs that are well-known in processing facilities, please read Harper's article, "The Way of All Flesh".

http://articles.mercola.com/sites/articles/archive/2013/11/05/zilmax-side-effects.aspx

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