

Canadian Food System INSIGHTS

HORMONES

We all want to make safe and informed decisions about the food we eat, but what information is credible? This report uses academic, government and industry research to provide a breakdown of complex information, as well as resources, if you wish to dive into additional research. It's Good, Canada's goal is to enable Canadians to make their own choices and feel confident about the food on their plates.

IMPORTANT FACTS:

1. Like humans, all animals have natural hormones to support normal body function.
2. Beef cattle is the only livestock sector where synthetic hormonal growth promoters are registered for use by Health Canada in Canada.
3. Using hormonal growth promoters enables beef farmers to efficiently produce a healthy product that is more economical for Canadians with a smaller environmental footprint.
4. Government food inspection agencies test and analyze samples to ensure that the Maximum Residue Levels (MRLs) are below science-based limits.
5. The artificial bovine growth hormone (rbST) for increasing milk production in dairy cows is not allowed in Canada.
6. Independent and credible studies have been completed by the following organizations to further validate the safety of hormonal growth promoters: World Health Organization, Food & Agricultural Organization of the United Nations, and the Joint Expert Committee on Food Additives on behalf of the World Health Organization.

Let's Talk Hormones

Around the World

The use of hormonal growth promoters in beef cattle is approved in Canada, the United States and Australia but banned in the European Union.¹

The use of the growth hormone rBST in dairy cattle is approved in the United States and banned in Canada and the European Union.¹ Health Canada reviewed the use of rBST for dairy cattle in 1999.¹ After evaluation, it was clear that the use of rBST did not pose any risk to human health but due to animal health concerns, the use was not approved.¹

Naturally Occurring Hormones

Like humans, all animals and plants have natural hormones that help with regular body operation such as growth, reproduction, and healthy brain and organ function.

Added Hormones

Why do we need to use them?

In beef cattle, hormonal growth promoters are used to increase muscle and decrease fat deposition.¹ This process allows for improved feed conversion, meaning less feed and water is needed for growth, resulting in an increased efficiency at a reduced cost¹, ultimately providing a more accessible product to Canadian consumers.

It is estimated that using products like hormonal growth promoters can result in 11% more beef from 20% fewer cattle.² Between 1981 to 2011, the use of modern practices resulted in 32% more beef being produced on 24% less land, using 17% less water and reducing emissions by 14%.³

In dairy cattle, in countries where approved, the growth hormone rBST is used to increase the production of milk which then increases the amount of product available for the farmer to sell.¹

Why do we need to use them?

For beef cattle, the three natural hormones are progesterone, testosterone and estradiol-17 β and their approved synthetic alternatives are trenbolone acetate (TBA), zeranol and melengestrol acetate (MGA).¹

For dairy cattle, a growth hormone that is naturally occurring in the body of animals, including humans, is somatotrophin which supports skeletal, organ and cell growth.¹ The growth hormone rBST (Recombinant Bovine Somatotropin) is the synthetic version of the naturally occurring - somatotrophin.¹

How are they used?

In beef cattle, all hormonal growth promoters are small subcutaneous implants safely and humanely inserted into the animal's ear, except for melengestrol acetate which is added to feed.¹ The implants slowly dissolve over time and do not require removal.⁴ The ear does not enter the human food chain and therefore poses no risk to consumers. ⁴

In dairy cattle, in countries where approved - rBST is injected subcutaneously into a lactating cow, once every two weeks.

It's GOOD
CANADA

IS IT SAFE?

Simply, yes - the use of hormonal growth promoters in beef cattle production is safe for both animals and humans. The Canadian Food Inspection Agency (CFIA) ensures the safety of the food products we consume through strict policy and proven testing.⁵ Independent and credible studies have been completed by the following organizations to further validate the safety of hormone growth promoters: World Health Organization, Food & Agricultural Organization of the United Nations, and the Joint Expert Committee on Food Additives on behalf of the World Health Organization.⁵

Acceptable Daily Intakes (ADI): The maximum daily dietary exposure that is not expected to create any adverse health effects in humans.⁵ ADI levels are a decision point for human health impacts.⁶

Maximum Residue Level (MRL): The maximum residue level legally allowed that will not cause concern to human health based on the ADI and considers both daily consumption over a lifetime as well as total possible ADI through different sources (e.g. meat, milk, eggs). MRL's are monitoring tools for compliance to the approved conditions for use of all veterinary drugs.⁶

For more information, visit this [Health Canada resource](#).

During meat processing, veterinarians and inspectors conduct sampling tests and monitor for any health concern including unacceptable MRLs for synthetic hormonal growth promoters.⁵ Beef hormone residues are well below the MRLs established.⁵ If any product is deemed unsafe, it will be removed from the food system, and an investigation will be conducted.⁵ All of the beef at your grocery stores, including your favourite steak and hamburger meat, have hormone levels far below the enforced MRLs.

References:

1. Health Canada. Questions and Answers - Hormonal Growth Promoters. (2012). Available at: <https://www.canada.ca/en/health-canada/services/drugshealth-products/veterinary-drugs/factsheets-faq/hormonal-growth-promoters.html>.
2. Capper, J. L. & Hayes, D. J. The environmental and economic impact of removing growth-enhancing technologies from U.S. beef production¹. 3527-3537 (2011). doi:10.2527/jas2011-4870
3. Legesse, G. et al. Greenhouse gas emissions of Canadian beef production in 1981 as compared with 2011. (2015).
4. U.S. Food and Drug Administration. Steroid Hormone Implants Used for Growth in Food-Producing Animals Naturally-Occurring Hormones. (2020). Available at: <https://www.fda.gov/animal-veterinary/product-safety-information/steroid-hormone-implants-used-growth-food-producing-animals>.
5. Canadian Animal Health Institute. Hormones: A Safe, Effective Production Tool for the Canadian Beef Industry. (2002).
6. Jeong, S., Kang, D., Lim, M., Kang, C. S. & Sung, H. J. Risk Assessment of Growth Hormones and Antimicrobial Residues in Meat. 26, 301-313 (2010).
7. Experts, T. V. The Beef with Hormones - and 8 Other Foods You Might Find Them In. (2015).
8. Loy, D. Understanding Hormone use in Beef Cattle. (2011).