



# 30 Years of Responsible Use

The use of growth promoting hormones has been an approved and widely used management tool for raising healthy beef cattle since the 1960s. Designed to make raising cattle more cost efficient, the savings are passed on to the consumer at the checkout counter.

## Hormones: A Safe, Effective Production Tool for the Canadian Beef Industry

### Stringent Regulatory System Assures Safety

Although there are cost benefits associated with the use of hormones in beef production, never has there been any compromise in regards to human health. To ensure the safety of all new drugs, Health Canada's Food and Drugs Act makes it law for all veterinary drugs used in food production processes to pass stringent tests and regulations set by the Veterinary Drugs Directorate (VDD).

All new drugs must be manufactured according to regulations set by Health Canada and must prove safe for consumers and for the animal. After the products have been approved, they are issued a Notice of Compliance confirming that the product has met all the necessary conditions set by the Food and Drugs Act.

The following natural hormones and their synthetic alternatives have been approved by the VDD for use in Canadian beef production:

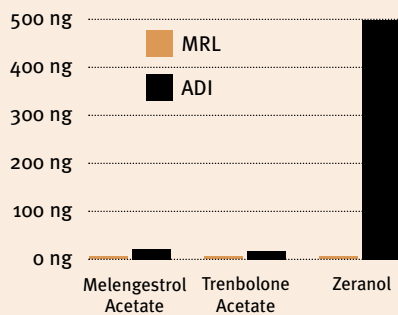
Natural	Synthetic
estradiol (estrogen)	zeranol
progesterone	melengestrol acetate
testosterone	trenbolone acetate



## Continuous Monitoring

Safeguarding Canada's food supply does not stop once the product has been approved. Canada's federal meat inspection monitoring system ensures the proper use of hormones. The Canadian Food Inspection Agency (CFIA) randomly tests samples of meat to ensure the safety of the product. If there are any problems or suspected problems with the product it is removed to prevent it from entering the food supply.

Comparison of Maximum Residue Limit (MRL) and Accepted Daily Intakes (ADI) of Hormones Used in Beef Production



Nanogram (ng) is 1 billionth of a gram

## Safety Levels

Hormones are naturally occurring substances, whether found in plants, animals or humans. As Swedish scientist Hans Kindahl indicates, "Consumers will inevitably consume hormones or hormonal metabolites as a normal component of meat and milk due to the fact that large quantities are endogenously [occur naturally] in these food products." Beef hormone residues are well below the Maximum Residue Limits (MRLs) that have been established by the Joint Expert Committee on Food Additives of the United Nations. MRLs are safety measures based on Accepted Daily Intakes (ADIs). ADIs are the maximum daily dietary exposure that is not expected to create any adverse health effects in humans. Regulations are enforced by the Canadian Food Inspection Agency (CFIA) that prevent producers from allowing residues to be in their animals prior to processing for human consumption.

The CFIA monitors all food products in Canada. This is done by sampling and testing by veterinarians and inspectors working on behalf of the provincial and federal governments. They monitor the food supply looking for many things, in addition to any kind of residue. Any product found to contain a residue that is considered unacceptable is condemned and destroyed. In the rare case where the CFIA have found a residue, it has been substantially below the maximum residue limit.

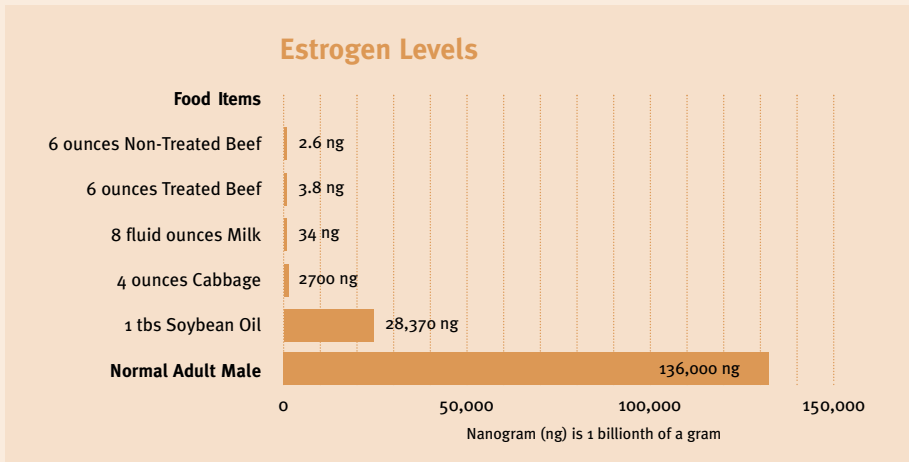
## Hormone Content in Beef Compared to Other Foods

Estrogen, progesterone, and testosterone are natural hormones already present in beef cattle regardless of whether or not they have been treated. These hormones are also present in humans. For example, on any given day, an adult male will produce 136,000 ng of estrogen. By comparison, the estrogen levels present in a 6-ounce serving of beef from a treated animal is approximately 3.8 ng. Furthermore, the amount of estrogen present in a 6-ounce serving of beef from a non-treated animal is approximately 2.6 ng. Therefore, in a single day, a human being will produce almost 36,000 times the amount of estrogen that would be present in a piece of beef produced with the aid of growth hormones.

Beef is not the only food product that contains hormones. Many foods that we eat every day contain hormones, too. For example, four ounces of cabbage contains 2,700 ng of estrogen. A glass of milk







contains 34 ng. One tablespoon of soybean oil contains 28,370 ng of estrogen—that's almost 7,500 times the amount of estrogen present in a 6-ounce piece of meat from treated cattle.

## Safety for the Future

Health Canada takes many steps to make sure that Canadians eat foods that do not pose health risks. The use of hormones in raising beef cattle has never been linked to any health problem in Canada. Other countries that have approved the use of hormones, (USA, Australia, New Zealand, Japan, Chile, South Africa and Mexico plus two dozen more) have gone without incident, as well. With stringent approval regulations and a continuous monitoring system, we can be sure our food supply will continue to be safe.

## The Beef: What Are Growth Hormones and Why Are They Used Anyway?

Business operators are always seeking out new and improved ways to run their business more efficiently. It is a matter of limiting inputs while increasing outputs. Beef producers are no different than any other business operators in Canada. They too are always looking for more efficient ways to manage their business. For more than 30 years, beef producers have relied on growth hormones to efficiently manage their herds. For more than 30 years this management tool has proven to be safe and effective.









## Scientists Agree – Hormones Are Safe

Careful and independent studies by experts at:

- World Health Organization
- United Nation's Food & Agriculture Organization
- European Community Scientific Committee (as recently as 1995)
- Joint Expert Committee on Food Additives on behalf of the World Trade Organization

along with the government review agencies of the countries shown below have all agreed that hormones used in beef do not pose a health risk to humans. The World Trade Organization, as recently as 1997 ruled against the European Union ban on North American beef stating that it is an artificial trade barrier based on protectionism rather than a human health risk.

### Countries that have Approved Hormones for Use in Beef Production

- |   |  |
|---|--|
|  US          |  South Africa |
|  Canada      |  Mexico       |
|  Australia   |  Chile        |
|  New Zealand |  Japan        |

\*plus two dozen more



## What Do Hormones Do?

Hormones are used as growth promotants in livestock production. Producers who treat their animals with hormones, at the same time feed them high-energy, nutrient-rich grains in balanced diets. Hormones also help the animal improve its nutrient absorption. Improved nutrient absorption equates to less need for feed in order for the animal to reach its finish weight (market weight). In addition, hormones help to improve meat quality by changing the deposition of fat, producing the lean meat that consumers desire. So essentially, the animal grows larger, faster, without becoming excessively fat.



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## Why Use Growth Hormones?

In order to compete in the domestic and export markets, Canadian beef producers must be able to keep the costs of running their operation as low as possible. Effective production cost management keeps the retail costs low for the consumer.

How do growth hormones allow for effective cost management? Growth hormones are administered to cattle through an implant in the ear, a part of the animal that is not used for human consumption. The hormones approved for use in beef production are estradiol (estrogen), progesterone, testosterone, and their synthetic alternatives zeranol, melengestrol acetate, and trenbolone acetate. These hormones can act in two ways:

- 1) Growth hormones act as replacements for substances naturally produced by the animal that are deficient or no longer present. For example, male cattle that have been castrated (steers) do not produce enough testosterone, an essential component for animal's growth and development. Cattle are castrated to help control dangerous behaviour and to prevent random breeding. By supplementing the animal with testosterone, it is allowed to grow at a more natural rate using a substance that would otherwise be deficient.
- 2) Growth hormones act as supplements for substances that are naturally produced by the animal. For example, cattle need hormones like estrogen to grow and develop. Supplementing these hormones, or adding to what is already present, allows the animal to grow and develop more quickly.

## What Are the Benefits?

**For the Producer** By allowing the animal to grow larger and quicker on less feed producers realize cost benefits. They have lower feed costs and therefore lower inventory costs. On average, during the feedlot stage where the animals are fed high energy grains, cattle will gain on average 1.7 kg per day. The cattle experience an 8 to 25% increase in daily weight gain with up to a 15% gain in feed efficiency. This means cattle reach market weight 17 days sooner than an animal that has not been treated. The result is a savings of \$30 to \$80 per animal for the producer.

**For the Consumer** Without the use of growth hormones, producers would experience higher costs. Like in most businesses, higher production costs mean a higher price for the consumer. In the European Union where growth hormones are not permitted for either domestic production or through foreign imports, consumers have to pay a higher price for their beef. For example, 500 g of lean ground beef in Germany will cost about \$4.60 while costing about \$3.19 in Canada for the same amount. That is a difference of 44%. Average grocery costs in Germany are only 25% higher than in Canada.

(Source: Shopping Abroad study reported in Toronto Star, October 2000)

## Management for the Future

The benefits of using growth hormones are substantial. Combined with the stringent safety measures taken by Health Canada and the Canadian Food Inspection Agency, the use of hormones in beef production will continue to be a safe and effective management tool benefiting Canadian producers and Canadian consumers.