

# Bovine growth hormones



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In the last century there has been a lot of increased research in science which has greatly influenced our daily life. Introduction of new technologies like the recombinant DNA technology has led to new developments in the agricultural, pharmaceutical and molecular biology. It is possible to produce proteins in organisms where they are not originally produced through recombinant DNA technology. A gene sequence is incorporated in an organism capable of reproducing fast to allow production of large volumes of the protein for example bacteria.

Hormones like insulin are produced this way while others that have a lot of influence in the physiological functions on humans and animals are produced synthetically for example Bovine hormone which is given to dairy cows in order to increase milk production. Bovine Growth Hormone The pituitary glands of cows naturally produce the hormone bovine somatotropin (bST) that is responsible for production of milk in cows. Some of the bST hormone reaches the liver while in circulation and stimulates production of insulin like growth factor one (IGF-1).

Combination of these two hormones leads to increased degradation of fats for energy and also prevents mammary glands cell death. The increased fat degradation is thought to be reason behind increased milk production. Due to advancement in science it was made possible to synthetically produce this hormone by recombinant DNA technology. The Recombinant Bovine Growth Hormone (rBGH) which was the first genetically engineered animal drug produced by Monsanto in 1994 which is one of the largest biotechnology companies in the world.

The hormone is injected to the cows even when they produce enough bovine somatotropin which puts the animal at risk because two hormones with the same purpose will be involved. Introduction of this hormone to dairy farmers was faced with a lot of controversy because it was shown to have health hazards to human beings who take milk from cows injected with this hormone. Monsanto went ahead to introduce the rBGH though with a lot of opposition from farmers and the public.

This hormone was shown to increase reproduction of cows by about 25%. In the process the health and reproduction of the cows decreases from the effect of the rBGH. It was criticized by many industrialized nations because they thought that it would cause negative effects on humans. It was later proved that this hormone had drastic effects on cattle and also on humans. Independent research was done by organizations like the consumers union, cancer prevention coalition and other international governments like the Canadian government.

All these organizations found out that milk from a cow injected with rBGH hormone contained high amounts of potent cancer tumor promoter IGF-1 and could also be absorbed through the gastro intestinal tract thereby leading to immunological effects. Absorption of this hormone to the body also influences cancer accelerating hormone Insulin like Growth Factor - 1 (IGF-1) that leads to abnormal growth of cells (malignant cells) which causes the major cancers like breast and prostate cancers.. Monsanto had attempted to cover up all these negative effects on humans and cows.

This was facilitated by the US Environmental Protection Agency and Department of Agriculture who went ahead licensing the rBGH and other

genetically engineered organisms without the necessary safety test. Some of the journalist from Fox company who tried to air the Monsanto story fairly and honestly. The journalist had reported about the rBGH hormone and the possible health hazards to people who take milk and beef from cows injected with this hormone. were dismissed from the broadcasting company without any definite reasons.

It was therefore evident that Monsanto was out to make huge profits without concern if their products were safe enough to be utilized in animals and the subsequent shift to humans through milk and beef. Conclusion The increased provision of funds for research has led to more discoveries and development of new scientific products. However, whenever a new product is developed it is the responsibility of developer to carry out critical safety tests to avoid endangering the lives of many people. Each and every technological innovation has its advantages and disadvantages.

Once a new product is introduced all the pros and cons of that product should be addressed accordingly. It is also the responsibility of each state to ensure that all new products developed in that state are safe and should not hesitate to take legal actions if the product is capable of threatening life.

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