

Growth Hormone

Growth Hormone is one of several biological chemicals that circulate in the bloodstream and regulate the normal functions of the body. Like Luteinizing Hormone (LH) and Follicle-Stimulating Hormone (FSH) which regulate reproduction, GH is a protein produced by the pituitary gland, located at the base of the brain. As each animal species produces a unique GH, the hormone produced by the cow is often designated bGH - bovine Growth Hormone. Bovine Somatotropin (BST) is another name for the same hormone.

The use of injected Growth Hormone (GH) to increase milk production in cattle was first reported by Russian scientists in 1937. Other experiments were conducted over the following 40 years, confirming and expanding on the initial work, but these early experiments were very limited in scope because the hormone had to be extracted from the pituitaries of slaughter cows. It took the pituitaries from several hundred slaughter cows to obtain enough GH to treat a single cow.

In the early 1980's new advances in biotechnology made it possible to produce large quantities of bGH in bacterial culture. Using *recombinant DNA* technology, the piece of genetic material (DNA) which codes for GH production in the cow is spliced into the genetic code of the bacteria. As bacterial cells grow and multiply in a liquid culture medium, bGH is produced as a by-product, referred to as either recombinant bGH (rbGH) or recombinant BST (rBST).

The availability of rbGH has made possible a large number of research and commercial trials which have demonstrated its effectiveness and safety as a means of increasing milk production in well-managed herds. As a result, the commercial use of rbGH was approved in the US in 1993.

for more information:

[Growth Hormone 1. Introduction and production responses](#), *University of Alberta Dairy Research Highlights*

[Growth Hormone 2. Milk safety](#), *University of Alberta Dairy Research Highlights*