

rBGH should be outlawed in the United States

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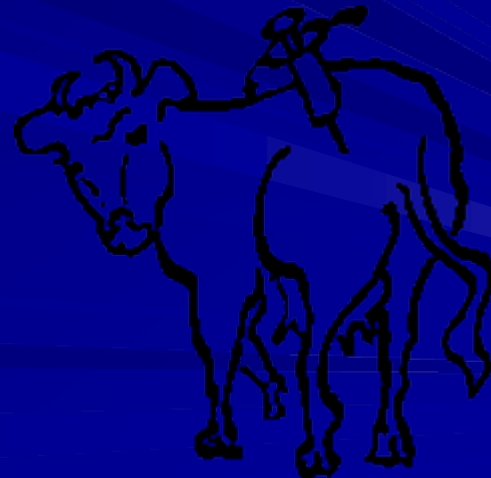
JERSEY DAIRY COWS - PHOTOGRAPH BY BILL TARPENNING - U.S.D.A.

What is BGH?

- BGH also known as BST (bovine somatotropin)
- BGH is a protein hormone that naturally occurs in the pituitary gland of cattle
- It controls the amount of milk produced by a cow
- BGH is therefore naturally found in milk extracted from cows

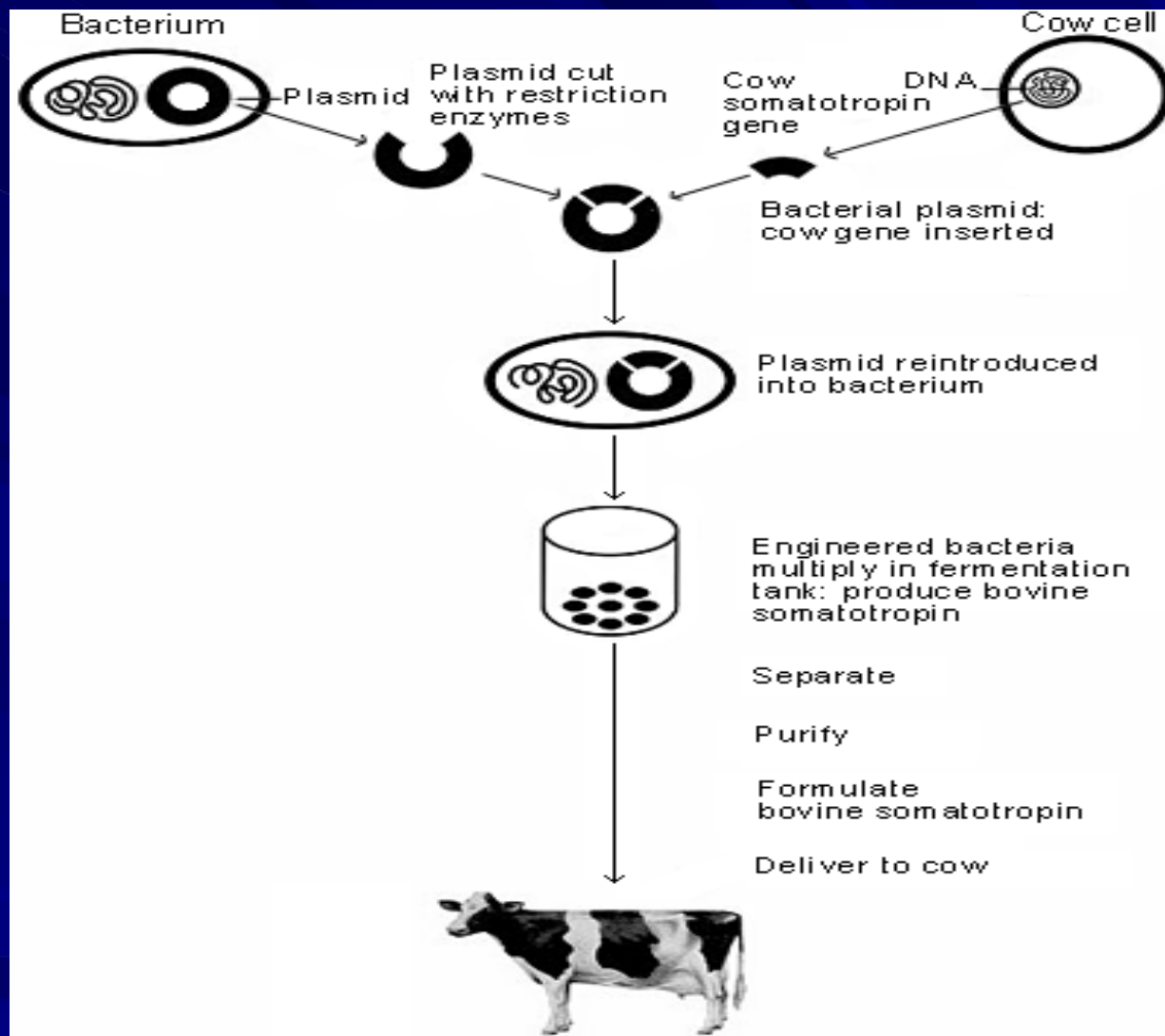
What is rBGH?

- rBGH is recombinant bovine growth hormone
- It is a synthetic version of BGH that is injected into a cow to artificially increase milk production



Scientific Production

- Gene producing BGH is spliced into the genetic information of an E.coli K-12 bacterium
- The cells then begin to make the protein coded for by the BGH.
- During the manufacturing process excess BGH is produced and the E.coli is killed and ruptured.
- Bacterial constituents, such as membranes, DNA, and proteins, are separated from the BGH.
- Highly-purified BGH is incorporated into an injectable slow-release formulation (POSILAC) via specialized pharmaceutical procedures.



History of rBGH

- Developed by Monsanto
- During WWII there were unsuccessful efforts to use BGH to increase milk production
- In 1979 Monsanto began working with Genentech to develop a functional form of rBGH
- Introduced to farmers in the United States in February 1994
- Called POSILAC Bovine Somatotrophin

POSILAC

- Of the nearly 9 million dairy cows in the United States, approximately one-third are in herds supplemented with POSILAC
- Since introduction in February 1994, POSILAC has become the largest selling dairy animal pharmaceutical product in the United States
- The product is sold in all 50 states



Legalization in the U.S.

- In November 1993 the FDA approved rBGH for use in the US
- The FDA does not require labeling of milk products containing rBGH stating that, “all milk contains hormones and milk cannot be produced in a way that renders it free of hormones.”
- Oakhurst Dairy was sued by Monsanto in 1994 for the use of the label: “Our Farmers' Pledge: No Artificial Growth Hormone.”

US Movement Against rBGH

- In February 2007 Safeway in the Northwestern US stopped buying milk products from farmers who use rBGH
- The Safeway plant in San Leandro, CA had already been rBGH-free for two years
- Chipotle Mexican Grill that has also announced it will only serve rBGH-free sour cream at its more than 530 restaurants

rBGH Outside the US

- The sale of POSILAC is illegal in virtually every developed country with the exception of the United States
- The use of rBGH is illegal in Japan, Canada, Australia, New Zealand, and the European Union
- The EU declared rBGH as safe for use in 1990, but it was outlawed in 1993

Bovine Growth Hormone

Benefits and Risks



Cows Risks

Recombinant Bovine Somatotrophin (BST or BGH) is a synthetic, genetically engineered version of natural cow growth hormone. It is designed to increase milk production.

Seven years of studies done by Monsanto, the company who developed BGH, showed an increase of mastitis, an inflammation of the mammary glands, by almost 80%. In addition, cows treated with BGH suffer suppressed immune systems and decreased fertility.

BGH makes cows sick. Monsanto has been forced to admit to about 20 veterinary health risks including mastitis and udder inflammation.

This udder inflammation often leads to milk that has pus in it. Milk with pus in it is a bit unsavory to begin with; but this milk is likely to sour more easily as well.





Cow suffering from mastitis.



Cows Benefits

Cows supplemented with BGH are healthy and have increased yields of milk

The performance of calves born to cows treated with bovine somatotropin was excellent.



Human Risks

BGH is not natural. The FDA now admits that it is up to 3 percent different in molecular structure from the normal hormone. Increased BGH levels in milk and blood have been found in injected cows. BGH and its digested products could be absorbed from milk into blood, particularly in infants, and produce hormonal and allergenic effects.

Increased levels of cell-stimulating growth factors, apparently identical to those in humans, have been reported in BGH milk. These could induce premature growth and breast stimulation in infants, and possibly promote breast cancer in adults.

The stress effects of BGH in cows could suppress immunity and activate latent viruses, such as bovine leukemia (Leukosis) and bovine immunodeficiency viruses, which are related to the AIDS complex and may be infectious to humans.



Human Benefits

The U.S. Food and Drug Administration has approved human consumption of milk and meat from dairy cows given supplemental BGH

BGH helps produce high-quality milk while using fewer resources and generating less waste per gallon of milk produced

Consumers benefit with BGH use
due to the availability of more
milk at lower prices

The human safety of dairy
and meat products from
dairy cows receiving bovine
somatotropin supplements
has been confirmed by more
than 50 countries

The logo for POSILAC features a stylized blue and white graphic on the left, followed by the word "POSILAC" in bold red capital letters with a registered trademark symbol (®) to its upper right.

Bovine Somatotropin →



Milk

[ABOUT KEMPS](#)[PRODUCTS](#)[RECIPES](#)[PROMOTIONS](#)[ASK THE COWS](#)[Homogenized](#)[2 Percent](#)[1 Percent](#)[Skim](#)[Flavored](#)[Creams & Buttermilk](#)[← Back to 2 Percent](#)

Select 2% Reduced Fat Milk (Half Gallon)



Nutrition Facts

Serving Size: 1 cup (236mL)

Amount per Serving

Calories 130 Calories from Fat 45

% Daily Values

Total Fat 5g 7%

Saturated Fat 3g 15%

Trans Fat 0g

Cholesterol 30mg 7%

Sodium 125mg 5%

Total Carbohydrate 13g 4%

Fiber 0g 0%

Sugar 12g

Protein 8g 17%

Vitamin A 10%

Vitamin C 2%

Calcium 30%

Iron 0%

Vitamin D 25%

Kemps Select Milk is from cows not treated by rbST.

Ingredients: REDUCED FAT MILK, VITAMIN A PALMITATE AND VITAMIN D3 ADDED.

Technological advantages

- Synthetic hormone is easy to mass produce
- 11 pounds per day per cow for the number of days the animal is on BST, which is a maximum of 200 days in the 335-day lactation cycle.
- Total additional milk per cow: 2,200 pounds, on average

Milk Production

- Cows need more nutrients to produce more milk
- Better farming practices and conditions is a better start
- More milk will drive down the price and reduce the profit margin (dysfunctional technology transfer)
- Regulations will need to increase to make sure only correct chemicals and dosage is used



What about the cows?

- Studies show increase in stress of cows injected with growth hormones
- No studies to show long term effects on COWS
- Chemically alters cows
- Not all cows have the same reaction
- Easier to improve living conditions and diet



Social Issues

- There are a significant amount of people that wont buy altered food
- Not enough information to be considered safe
- Animal cruelty
- Religion



Globally

- Growth hormones are illegal in most other countries
- Reduces exporting
- Globally more people find genetically engineered foods unacceptable for ethical or religious reasons.
- No technology, no matter how beneficial, is risk free



Breakthroughs needed

- A more friendly chemical
- Market segmentation
- Fully understand the side effects both in humans and cows
- Regulation to differentiate altered foods
- Alternative form



References

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