

Milk and Hormones Fact Sheet

Bovine somatotropin (bST) is a naturally occurring protein hormone in cows. bST helps young cattle grow and adult cows produce milk. A small amount of this hormone is naturally present in all milk, including organic products. When you drink milk, bST is completely broken down by digestion like any other protein.

Some dairy farmers may use a synthetic version of bST, known as rbST or BGH, to increase milk production. rbST is not added to the milk itself. The use of supplemental bST was approved by the Food and Drug Administration (FDA) in 1993 based on an exhaustive review of scientific studies.¹

Dairy farmers who use rbST say it helps boost their herds' milk production, which can benefit their businesses and help ensure a plentiful milk supply for the public.⁷ According to U.S. Department of Agriculture (USDA)'s Animal and Plant Health Inspection Service (APHIS), about 15% of U.S. dairy farmers choose to use rbST with their herds, accounting for 20-25% of cows.⁸

All milk naturally contains minute amounts of hormones, and science shows that there is no significant difference in hormone levels between organic and regular milk.⁹⁻²¹ In fact, in the first peer-reviewed study comparing conventional milk, milk labeled "rbST-free" and organic milk, researchers found that the composition of the milk itself was essentially the same, despite the use of different production practices on the farm.

Over the last 20 years rbST has been heavily researched, and separate reviews by the National Institutes of Health (NIH), the joint World Health Organization/Food and Agriculture Organization Committee (WHO/FAO), the American Medical Association (AMA) and the American Dietetic Association (ADA) have all supported the FDA's position that milk from rbST-supplemented cows is safe.¹⁻⁶

The dairy industry supports choices in the dairy case, and some farmers, manufacturers and retailers will support different types of production that may or may not include the use of rbST. But it's important to understand that carton to carton, bottle to bottle, all milk is wholesome, safe and nutritious. All milk contains the same combination of nutrients that makes dairy products an important part of a healthy diet.

Additional Resources

- Dairy Farming Today: www.dairyfarmingtoday.org
- National Dairy Council Dairy Council Digest: www.nationaldairycouncil.org/NR/rdonlyres/AA72A4E1-8BC2-428B-BDD3-16E6DA484ABD/0/dcd783.pdf
- FDA's position on the safety of rbST: www.fda.gov/cvm/RBRPTFNL.htm or www.fda.gov/bbs/topics/ANSWERS/ANS00564.html
- Cornell University rbST fact sheet: www.cfsan.fda.gov/%7Eear/CORBST.html

References

1. www.fda.gov/cvm/RBRPTFNL.htm
2. www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=hstat4.chapter.24138
3. www.fao.org/waicent/ois/press_ne/presseng/1998/pren9817.htm
4. www.cfsan.fda.gov/~ear/CORBST.html
5. www.hc-sc.gc.ca/dhp-mps/vet/issues-enjeux/rbst-stbr/rep_rcpsc-rap_crmcc_e.html
6. www.agbioforum.org/v3n23/v3n23a15-brinckman.htm Scientific Status Report - #19 Hormones and Milk. National Dairy Council, March 5, 2007.
7. *The Scientist*. "Dairy economics: Milking blood from a stone". February, 2007. Vol. 21, No. 2
8. APHIS Veterinary Services. Bovine Somatotropin Information Sheet. May, 2003. www.aphis.usda.gov/vs/ceah/ncahs/nahms/dairy/dairy02/Dairy02BST.pdf
9. Jenness, R. Composition of milk. In: *Fundamentals of Dairy Chemistry*. 3rd ed. N.P. Wong, R. Jenness, M. Keeney, and E.H. Marth (Eds.). New York: Van Nostrand Reinhold Co., 1988, p. 19.
10. Campana, W.M., and C.R. Baumrucker. Hormones and growth factors in bovine milk. In: *Handbook of Milk Composition*. R.G. Jensen (Ed). New York: Academic Press, 1995, pp. 476-494.
11. Jouan, P.-N., Y. Pouliot, S.F. Gauthier, and J.-P. Laforest. Hormones in bovine milk and milk products: a survey. *International Dairy J.* 16: 1408-1414, 2006.
12. Malekinejad, H., P. Scherpenisse, and A.A. Bergwerff. Naturally occurring estrogens in processed milk and in raw milk (from gestated cows). *J. Agric. Food Chem.* 54: 9785-9791, 2006.
13. Fritsche, S., and H. Steinhart. Occurrence of hormonally active compounds in food: a review. *Eur. Food Res. Technol.* 209: 153-179, 1999.
14. Hartmann, S., M. Lacorn, and H. Steinhart. Natural occurrence of steroid hormones in food. *Food Chem.* 62(1): 7-20, 1998.
15. Blayney, D.P. Milk and biotechnology: maintaining safe, adequate milk supplies. *Food Rev.* 17(2): 27-31, 1994.
16. Juskevich, J.C., and C.G. Guyer. Bovine growth hormone: human food safety evaluation. *Science* 249: 875-884, 1990.
17. Doughaday, W.H., and D.M. Barbano. Bovine somatotropin supplementation of dairy cows. Is the milk safe? *JAMA* 264: 1003-1005, 1990.
18. Technology Assessment Panel. NIH Technology Assessment Conference statement on bovine somatotropin. *JAMA* 265: 1423-1425, 1991. (*Nutr. Rev.* 49: 227-232, 1991.)
19. U.S Congress, Office of Technology Assessment, U.S. Dairy Industry at a Crossroad: Biotechnology and Policy Choices: Special Report. OTA-F-470. Washington, DC: Superintendent of Documents, U.S. Government Printing Office, May 1991.
20. Etherton, T.D., P.M. Kris-Etherton, and E.W. Mills. Recombinant bovine and porcine somatotropin: safety and benefits of these biotechnologies. *Journal of the American Dietetic Association*. 1993, 93:177-180.
21. Vicini J. et al. Survey of retail milk composition as affected by label claims regarding farm-management practices. *Journal of the American Dietetic Association*. 2008, 108:1198-1203.

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