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# Review of Bioactive Components in Milk and Dairy Products

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## PREPRINT

Review of *Bioactive Components in Milk and Dairy Products*. Young W. Park, Ed. Wiley-Blackwell. Ames, IA: 2009. Reviewed by Madeleine Charney, University of Massachusetts Amherst, Amherst, Massachusetts.

The Western world tends to consider cows to be the main source of milk and dairy products. However, *Bioactive Components in Milk and Dairy Products* presents the production, chemistry and nutritional qualities of milk from a variety of mammals: goat, sheep, buffalo, camel, and mare, as well as the cow. Woven into the scientific information is fascinating background of some of the animals' history and evolution. For example, Chapter 7 discusses different dairy horse breeds in regions around the world including Russia, Kazakhstan, Uzbekistan, Mongolia, Tibet, and many central European countries. Besides the in-depth chemical analysis of each type of milk, a multitude of studies reveal potential health benefits of imbibing these milks and ingesting their products. The data supports that diseases and disorders (e.g. compromised immune system, cancers, gut diseases, cardiovascular disease, and inflammation) may be at least partially alleviated through their consumption.

The book also delves deeply into the bioactive elements and possible health benefits in milk-derived components: caseins, casenates, cheeses, yogurt products, kefir (a creamy drink made of fermented cow's milk), koumiss (an alcoholic beverage made from fermented mare's milk) and whey products. There is a chapter dedicated to the potential for improving health from the calcium bioavailability and iron fortification in these products. New technologies for isolating and analyzing bioactive compounds are explored, including factors involving antioxidants, antibodies, nucleotides, and milk oligosaccharides. Probiotics (live microbial food supplements) and prebiotics (natural substances in some foods that encourage the growth of healthy bacteria in the gut) in bioactive compounds in dairy products are discussed in relationship to microbial

balance, a healthy gut and longevity. Regulatory issues are addressed, such as the laws on fortification, explicit health claims, marketing, labeling, and food regulatory codes.

This book is a welcome complement to the well-known, three-volume *Advanced Dairy Chemistry* series (Kluwer, 2006), edited by Patrick F. Fox and Paul McSweeney, which is considered the leading reference on dairy chemistry. The volumes respectively cover proteins; lipids; and lactose, water, salts and minor constituents. However, it only covers the milk of cows. Fox and McSweeney's *Dairy Chemistry and Biochemistry* (Springer-Verlag, 1998), another authoritative text limited to cow milk, adds to the rounding out this body of knowledge about dairy. *Probiotic Dairy Products* edited by A.Y. Tamime (Blackwell, 2005) focuses specifically on research findings about the health and functional aspects of dairy and fermented milk products and their ingredients.

Detailed tables, charts, and diagram enrich this book and a lengthy list of current references caps off each chapter. A detailed index makes it easy to pinpoint specific materials within the book. Recommended for academic collections which focus on agriculture, alternative medicine and nutrition.

## REFERENCES

Fox, P.F., & McSweeney, P.L.H. (Eds). (2006). *Advanced dairy chemistry: Volume 1, proteins, parts A&B* (3<sup>rd</sup> edition). New York : Kluwer Academic.

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