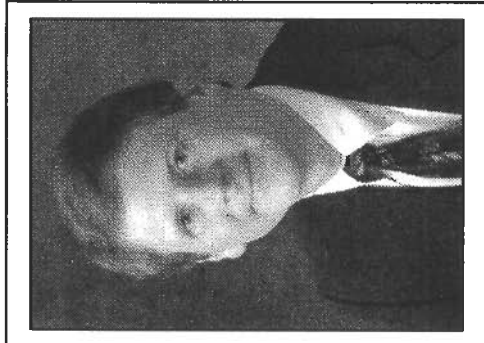


GUEST COLUMNIST



Perspective: Ingredient Technology

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learn from studying the human genome will have relevance as we view the role of bovine milk in human nutrition.

With the human genome sequence available, scores of scientists around the world are focusing in on their own areas of interest of human biology. Not to sound too dramatic, but this is akin to learning the world is round and then going out to explore it. The human genome is leading to huge amounts of data that will occupy scientists for generations. Much of this data will have relevance to understanding the role of milk in nutrition and health. The big "but" here is how to get all this organized. Dairy industry groups and corporations around the world are working diligently to get a handle on it.

A global system has emerged under the direction of Dr. Bruce German, a Canadian professor at the University of California who has close contacts with processors. Between my writing this column and your reading it, the first International Symposium on the Milk Genome and Human Health will have been held, bringing groups from around the world with a vested interest in how this will play out together to shape the project and its goals. The hardware, software and, most importantly, bioinformatics personnel are in place to organize global, non-proprietary milk genome information. A global consortium has formed and is getting bigger. Any company or institution looking to be

in the milk bioactives game will find this membership invaluable.

What does all of this science mean to the average consumer? While it seems a long way away, the reality of improved knowledge of the health behind dairy products as well as better products is right around the corner. It follows that in addition to finding new health messages associated with milk components, animal scientists will have the knowledge to go back to modify the genetics of cows to produce value-added milk. Putting this entire thing together means that consumers will have even more compelling reasons to consume dairy products and more dairy products will be available to deliver those benefits.

This does not preclude soy and others from continuing to develop health messages around their products. But it's hard to compete with perfection. In the new and improved perfection. In the end, only milk stands as the single product designed by nature to deliver nutrition and health to mammals. Other foods are nourishing because humans figured out how to process them. The whole food pyramid is important to life but when it comes to adding true balance to our diet, milk is the dominant player. Milk makes other foods better. **CMN**

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Genome project looks to unlock the key to milk's goodness

First came the human genome sequence — like a Chinese puzzle box challenging us to find where each piece belonged and what each piece said in the whole picture of human life. Luckily, intense focus by the scientific community led to the human genome being sequenced well ahead of schedule. In the process, new analytical techniques were discovered and applied, people became more adept at their work and the process became well integrated. Now we stand with our own puzzle box — a box containing the secrets of a very human activity — milk production.

All mammals share in the ability to

produce milk. Looking at the compositional range of milks leaves one in awe. While milk from marine mammals often contains little if any lactose, human milk contains substantial levels. And that's just one example. The message here is that the enormous biological diversity in the composition of milks suggests that the genetic diversity exists to produce great diversity of composition.

Since many of the components of milk from one species has a counterpart in another species, one can assume that the physiological information gained from one species can apply in some degree to another. Thus, what scientists