Q&A: RESEARCH DIVIDENDS

WITH PHIL TONG

Q: For those unfamiliar with the Dairy Products Technology Center (DTPC) at Cal Poly, can you briefly describe your mission?

PT: The DTPC’s overall mission is to support the maintenance, growth and continued economic health of the dairy foods industry. To accomplish it, the DTPC 1) delivers academic programs and industry service (education, outreach and research) that provide solutions, 2) facilitates industry activation, and 3) develops leaders for tomorrow’s workforce.

DPTC is also one of the six national Dairy Research Centers that works with the Dairy Research Institute (DRI).

Q: What current technology research holds the most potential for the U.S. dairy industry?

PT: DPTC researchers have improved our understanding of key properties that impact solubility and heat stability. We have been able to show that varying the amount and composition of minerals (particularly calcium, sodium and potassium) can influence ingredient solubility and other functional properties.

Several manufacturers have already put into practice some of the findings. Full implementation of our results can have immediate impact on the ease of reconstitution of MPCs.

In addition, evidence suggests that better control of mineral composition can minimize the loss of solubility associated with storage time of many dairy ingredients. An added benefit may be that we can also reduce the heat exchanger fouling tendency of dairy concentrates during processing into dry ingredients.

We are currently exploring how such results may be applicable to more than just high protein dairy ingredients but also to develop more “value added” SMP or NDM.

Q: What has been the biggest dairy research achievement of the past five years?

PT: The full realization of a new array of more tailored dairy ingredients with specific functional properties is a result of a compilation of research knowledge about milk proteins and how they are influenced by processing, and the environment of the protein. This strategic research, along with efforts to transfer this technology through applications research and activities of the U.S. Dairy Research Centers, other universities and industry, is fueling demand for U.S. dairy ingredients globally.

Q: How does research at DPTC meld with efforts to boost U.S. export sales and dairy consumption overseas?

PT: Several years ago DPTC took a leadership role in making our industry aware of protein standardization of milk powders. While this is now second nature to U.S. milk powder manufacturers, our industry previously elected to sell mostly NDM on the world market and was unaware of the technology and nuances of effectively utilizing protein standardization for SMP manufacture.

Our research helped our industry understand this technology and the implications of how protein standardization can influence product consistency, performance and economics. Today, the United States enjoys a significant market share in protein-standardized SMP around the world.

This effort was coordinated with USDEC efforts to bring trade missions to Cal Poly DPTC and have DPTC faculty and staff do in-country educational seminars on U.S. dairy ingredients. USDEC helped us focus our attention on emerging market needs worldwide and we responded with technology and other technical information to support the marketing efforts. This approach made it easier for U.S. suppliers to compete not just on price but on quality and service, which has led in part to tremendous growth and demand for U.S. dairy exports.

Dr. Phil Tong is director of the Dairy Products Technology Center at California Polytechnic State University. The DPTC will celebrate 25 years of service Oct. 25-27, 2012, with a series of events including a half-day symposium on dairy science and technology, an open house and a special ticketed event with Food Network’s Alton Brown (see www.dptc.calpoly.edu for more information).