



Volume 16
Number 2
2 0 0 2

University of California Agricultural Issues Center

AIC Quarterly

2002 Farm Bill raises trade concerns

After many months of legislative negotiation, the Farm Security and Rural Investment (FSRI) Act of 2002 was signed into law by President Bush on May 13. For more than six decades the United States has periodically renewed and reformulated legislation authorizing domestic farm subsidy programs and related policies. The new “Farm Bill,” the latest in this long history, has received wide media attention around the globe and here in California. As is typical, the FSRI Act includes titles on such diverse topics as food assistance for the poor, research and extension support, food safety, and aid to rural communities. The AIC will be releasing a series of farm-bill publications over the summer describing its effect on California agriculture.

Most commodities in California receive relatively little direct support from farm subsidy programs. California typically produces about 15 percent of farm value in the United States and will likely receive less than five percent of the farm payments authorized in the FSRI Act (most of which go to California’s important rice and cotton industries). Although the FSRI Act authorizes new dairy payments, the program’s limitations and its inherent production stimulus in much of the country mean that as the nation’s leading dairy state, California will likely receive a relatively small share of the payments—and face lower milk prices. Preliminary analysis suggests the net effect on the state’s dairy revenue will probably be negative.

The linkages between the FSRI Act, international trade and ongoing WTO negotiations have received considerable attention. AIC director Daniel Sumner addressed these topics in early June at the Food and Agricultural

Organization in Rome and at a seminar organized by Italian academics. One concern is the farm subsidy programs in the FSRI Act will make it more difficult for the United States to comply with its obligation on the current WTO agreement. But a greater concern is this farm bill has halted the 15-year trend towards lower and more market-oriented subsidy programs and increases the potential trade effects of U.S. farm subsidies. As a consequence, it may be much harder for the United States to maintain its leadership in efforts to further open foreign agricultural markets to trade.

Since California is the leading agricultural exporter in the nation, California agriculture has much to lose from a lack of progress in trade negotiation. The U.S. negotiating team has not changed its objectives, but the consensus view is that the FSRI Act has made their work more difficult.

AIC and CFBF review NAFTA impacts

Almost 10 years after its implementation, the North American Free Trade Agreement (NAFTA) remains controversial in California agriculture. Since 1994, most tariffs between the United States and Mexico either have been eliminated or greatly reduced as a result of either being eliminated immediately or phased out over 5, 10 (and in a few cases) 15-year periods. NAFTA has also improved the often chaotic and ineffective process by which commercial disputes between North American nations could be settled.

Continued on page 2

Inside...

- Why uses explored
- AgMRC news
- Korea visit
- AIC food studies
- Biotech conference
- Upcoming books

(NAFTA continued)

The move toward free trade between the United States and Canada began with the Canada-U.S. Free Trade Agreement (CUSTA), which became effective in 1989 and was incorporated into NAFTA. However, a number of agricultural commodities of interest, including most dairy products, were largely ignored by CUSTA.

To better understand what free trade in North America has meant to California agriculture, the AIC and the California Farm Bureau Federation have summarized the views of a large sample of California farmers and ranchers who responded to mail and web surveys, reviewed NAFTA provisions, and examined California agricultural trade, production, and price data from the NAFTA/CUSTA era. Aggregate and individual data were reviewed for 25 of California's most important commodities, ranging from almonds to wine, that are traded in North America. The changes in trade during the NAFTA and CUSTA periods were examined for those commodities and compared to changes in acreage, production and prices in California during the same period.

In agriculture, there are always many sources of fluctuation. Therefore, the study evaluated how the economic profile of California agriculture was likely affected by NAFTA in the context of many factors over the past decade, including the strengthening of the U.S. dollar, the Asian financial meltdown, slow growth in Japan, and several large crops in California and elsewhere. With so many relevant changes happening over the same period, it is difficult to determine causation from a single source, nonetheless the study does all it can to suggest where NAFTA has had its most significant effects.

Henrich Brunke and Daniel Sumner at AIC conducted the research with collaboration from the California Farm Bureau Federation and results will be finalized over the next few weeks. The complete study will be published by the California Farm Bureau Federation and AIC this summer and will be available on the AIC website and in condensed form as an *AIC Issues Brief*.

New whey uses explored

How much more will dairymen receive for milk when new uses for whey are developed? The AIC is seeking the answer to this and related questions as part of research tracing the potential economic effects of product innovations back to the farm.

Although about 135,700 metric tons of whey protein, a by-product of cheese manufacturing, is used annually in such foods as bakery products, sports bars and infant formula, approximately 32 percent of U.S. produced whey protein is wasted or put to very low-value uses as a livestock feed ingredient or a soil additive. *(continued page 3)*

Sun-Maid president joins AgMRC advisory council

Barry F. Kriebel, president of Sun-Maid Growers of California since 1986, has joined the advisory council for the multi-state Agricultural Marketing Resource Center (AgMRC). The AgMRC is a collaborative program among the AIC, Iowa State University, Kansas State University, and Oklahoma State University that focuses on value-added agriculture research and information.

Sun-Maid Growers of California, an agricultural marketing cooperative founded in 1912, is the world's largest processor and marketer of raisins and other dried fruits.

Kriebel serves as a voting member of the California Raisin Marketing Board and is a voting member on the Federal Raisin Administrative Committee. In addition, he is a member of the National Council of Farmer Cooperatives' Executive Council, an appointed member to the USDA/USDA Agricultural Technical Advisory Committee for Trade for Fruits and Vegetables, and serves on the Viticulture and Enology Industry Advisory Board for California State University Fresno. He has a bachelor's degree in economics from Stanford University and a law degree from Georgetown University, Washington, D.C, and is a member of the State Bar of California.

(Whey continued)

AIC postgraduate researcher Fiona Hutchinson, who recently completed an MS in Food Science at UC Davis, is focusing on the new applications for edible films and coatings made from whey protein by the Biopolymer Film Research Group at UC Davis led by Professor John Krochta. Seven different applications are currently being considered:

- § Grease-barrier coatings on paper and paper-board for packaging such products as fast food and dog food
- § Oxygen-barrier coatings on plastics
- § Gloss coatings on chocolate-panned confectionery as an alternative to shellac (also called confectioners glaze)
- § Oxygen-barrier coatings to prolong the shelf life of foods prone to oxidation (rancidity)
- § Moisture-barrier coatings on foods to prevent texture loss, microbial growth and unwanted chemical reactions
- § Anti-microbial coatings on cheese
- § Extrusion and thermoforming of water-soluble pouches and cups

The first five applications are developed to the point where formulations are currently available. A comparison of raw material costs for both the whey protein application and the current technology for these applications suggests that the oxygen-barrier coatings on plastics, gloss coatings on chocolate-panned confectionery and moisture-barrier coatings on foods (specifically, peanuts used in candy bars to prevent rancidity and extend shelf life) are likely to be the first of these applications adopted by industry.

If just these three applications are adopted by 75 percent of the market, an extra 24,500 metric tons of whey protein concentrate 80 and whey protein isolate would be consumed annually. This is about 85 percent of the current combined consumption of these two products. Adoption by 25 percent of the market would increase consumption by 6,300 metric tons, or 22 percent of current estimated consumption. These whey protein consumption

numbers are likely to increase further as other uses for moisture barrier coatings are developed.

These facts are the starting point for an AIC economic model being developed by Joseph Balagtas and Daniel Sumner that will trace the effects of dairy product demand shifts back through the dairy cooperatives and proprietary cheese production firms. An important feature of this model is the complex array of milk pricing regulations that heavily affect milk farm revenues. Such policies must be accounted for in assessing the effect increased whey consumption from potential new whey protein products will have on dairy income, and whether that increase offsets the research cost of product development.

Korean agriculture studied



Jung-sup Choi (KREI senior fellow), Larry Burmeister (University of Kentucky), Jung-il Kang (former KREI president), Hyunok Lee, Dan Sumner, Chul-ho Yoo (KREI senior fellow).

AIC director Daniel Sumner spent a two-month sabbatical in South Korea this spring as a Visiting Research Fellow at the Korea Rural Economic Institute (KREI) in Seoul. Sumner and UC Davis agricultural economist Hyunok Lee studied agricultural research and development and agricultural productivity in Korea, the prospects for increased dairy imports into Korea and, more broadly, how Korean agriculture is adjusting to increased globalization.

Supermarket studies look at food choice variables

Two related AIC studies are examining (1) the effect that prices, quality (fat, fiber, etc.) and availability (shelf space allocations) have on the demand for healthy foods and (2) the relative costs of healthier items and less healthy substitutes (i.e. whole wheat bread vs. white bread, low-fat vs. high fat ground beef) between stores in low income neighborhoods and neighboring stores in higher income neighborhoods.

AIC research economist Karen Jetter is conducting the studies in collaboration with Diana Cassidy, director of the Center for Advanced Studies in Nutrition and Social Marketing, UC Davis, with funding support from the California Cancer Research Program California Department of Health Services.

Study relates income with vegetable consumption

Families with household income levels at or below \$15,000 eat fewer vegetables than families with household incomes greater than \$15,000, but neither group is consuming recommended daily amounts, a study by AIC research economist Karen Jetter shows.

Total vegetable consumption in the higher income group is 15 percent higher than the lower income group, but even individuals in the higher group need to double their consumption to meet the USDA recommended four daily servings of vegetables.

The two groups were only one percent apart in total fruit consumption but, as with vegetables, both groups need to increase consumption by approximately 60% to meet the recommended three daily servings.

These findings are early results of a study that will assess the potential benefits to farmers if consumers increased their consumption of fruits and vegetables to the recommended levels.

Horticultural biotechnology issues aired at Monterey workshop

Nearly 100 invited scientists and industry representatives concerned about the future of horticultural biotechnology convened in Monterey in early March at an AIC and UC Davis Seed Biotechnology Center sponsored workshop to discuss issues, needs, and potential solutions to jump starting an industry perceived as lagging other biotechnology industries.

Although there is potential in the horticultural industry to use biotechnology to develop new and improved products ranging from tastier and longer lasting produce to slower growing lawn grasses that don't have to be mowed as often, such advances are either sitting on the shelf because growers, fearing adverse consumer reaction, don't want them, or they are withering in the laboratory because there is little or no chance of providing a return on development costs.

Available products with male sterility, modified ripening and modified oils are not being sold, and Bt corn that resists corn earworm is not being aggressively marketed, University of Florida researcher Barry Klee told the group. "Fear is the number one problem. No one wants to be first, or the only one," Klee said.

That fear may be more perception than reality. Susan Harlander of BIORational Consultants, Inc., commented that more than 70 percent of processed foods have at least one ingredient from genetically modified soy or corn. An International Food Information Council (IFIC) survey suggests that bio-engineered foods are not even on the public's radar screen. IFIC senior vice president David Schmidt said that consumers are more concerned about food safety, and in general they are not opposed to biotechnology. He also added that consumers are not well informed about biotechnology.

Acceptance of products containing genetically modified organisms (GMOs) may be a bigger issue with retailers and shippers than consumers, especially as fewer and larger chains serve a global

market-place. Twenty of the largest buyers are now responsible for 52 percent of all grocery store sales, according to Roberta Cook, UC Davis agricultural economist and Cooperative Extension specialist. This trend, Cook said, translates into fewer shippers and fewer markets for biotechnology, increasing both potential risks and rewards for biotechnology firms. "Growers will respond to shipper requirements," Cook said, noting that genetically modified organisms (GMOs) with beneficial attributes may fit retailer models, depending on their earlier GMO policy decisions.

Mary Zischke of Dole Fresh Vegetables said that biotechnology offers retailers an opportunity for product differentiation and that the biotech industry needs to offer retailers more "good news" products that feature improved quality and convenience. These products would be tastier, last longer, have improved texture and aroma, and could incorporate vitamins and antioxidants, minerals, heart-healthy oils, and other nutritional traits. Nonfood horticultural products such as uniquely colored flowers, slower growing lawn grasses, and garden plants with internal growth regulators are other candidates for leading a new wave of horticultural products.

The most successful biotechnology products to date are those with built-in herbicide tolerance or insect resistance. Most of these are large acreage agronomic crops where sales volume is sufficient to recoup development and registration costs. If the horticultural biotechnology industry is to benefit from the biotechnology revolution, it is going to have to move beyond "first generation" products to development of value-added products with compelling consumer benefits according to University of Missouri economist Nicholas Kalaitzandonakes.

The Monterey workshop participants identified several issues that need continuing dialogue and eventual resolution on the path to development of a viable horticultural biotechnology industry. These include greater reliance on the public sector and increased collaboration between public and private sectors to facilitate development and registration of products involving specialty crops. They also concurred that a policy shift in how intellectual property rights are assigned is necessary.

Researchers, public and private, increasingly obtain intellectual property rights to their inventions and either license or transfer ownership of these rights to commercial interests. Once this is done, the inventions, or more importantly, the tools to further inventions, are no longer available to the public unless future researchers can negotiate time-consuming and often expensive agreements with the intellectual property owners. Workshop participants suggested establishment of an intellectual property clearinghouse and/or a technology pool to give researchers greater access to collections of agricultural biotechnology tools and materials.

Consensus from the Monterey meeting is that the horticultural biotechnology industry needs to work together to solve common problems and tap the potential of emerging technologies.

Cosponsors supporting the AIC and Seed Biotechnology Center workshop included the UC BioSTAR Project, UC Davis College of Agricultural and Environmental Sciences, UC Division of Agricultural and Natural Resources, and the UC Berkeley Giannini Foundation.

AIC prepares books on exotic pests and trade with China

Iowa State Press will publish *Exotic Pests and Diseases: Biology, Economics and Public Policy*, a forthcoming book that grew out of AIC's major project on the topic. The first five chapters of the 15-chapter book will cover principles and issues related to exotic pests, including WTO sanitary and phytosanitary rules. The remaining chapters will deal with case studies ranging from bovine spongiform encephalopathy to biological control of yellow starthistle. Publication is expected in mid-2003.

Another AIC edited book, *Agricultural Trade and Policy in China*, features research on China's trade policy, WTO accession, commodity markets and agricultural productivity prospects and will be published by Ashgate Publishing in late 2002 or early 2003.

Advisory Board

Dan Dooley, Chair

Attorney, Dooley & Herr

William F. Allewelt, Jr., Vice Chair

President Emeritus, Tri Valley Growers

Karen Caplan

President and CEO, Frieda's Inc.

Cornelius Gallagher

*Executive Vice President
Bank of America*

Betsy Marchand

*President, State Board of Reclamation;
Tribal Gaming Commissioner,
Rumsey Rancheria*

Milenda G. Meders

Friends of Extension

Owner/Operator

Madera County farm

Richard Rominger

Yolo County farmer, American Farmland Trust National Board, former USDA Deputy Secretary

Brenda Jahns Southwick

Attorney

California Farm Bureau Federation

Dorcas McFarlane

Owner, J.K. Thille Ranches

Associate Directors

Science and Technology

Julian M. Alston, Professor

Agricultural & Resource Economics, UC Davis

International Trade

Colin A. Carter, Professor

Agricultural & Resource Economics, UC Davis

Agricultural Environmental Management

Karen M. Klonsky, Extension Specialist

Agricultural & Resource Economics, UC Davis

Resources and the Environment

Keith C. Knapp, Professor

Environmental Sciences, UC Riverside

Agribusiness Issues

Jerome B. Siebert, Extension Specialist

Agricultural & Resource Economics, UC Berkeley

Rural-Urban Issues

Alvin D. Sokolow, Extension Specialist

Human & Community Development, UC Davis

Commodity Policy and Market Issues

Daniel A. Sumner, Professor

Agricultural & Resource Economics, UC Davis

Staff

Daniel A. Sumner

Director

Gary Beall

Communications Coordinator

Jose Bervejillo

Post Graduate Researcher

Karen Jetter

Post Doctoral Researcher

Marcia Kreith

Program Analyst

Sherri Lee Smith

Business Manager

Laurie Treacher

Administrative Assistant

The *AIC Quarterly* is published by the University of California Agricultural Issues Center, One Shields Avenue, Davis, CA 95616-8514. For additions or changes to our mailing list, send an email to: agissues@ucdavis.edu; fax: 530 752 5451; or telephone: 530 752 2320.

The *AIC Quarterly*, *AIC Issues Brief*, publications, videos, events, working papers and more are on our website

www.aic.ucdavis.edu

7553

Agricultural Issues Center

University of California

One Shields Avenue

Davis CA 95616-8514

Address Service Requested

Nonprofit Org.

US Postage

PAID

UC Davis