This is the sixteenth issue of the *Giannini Reporter*, published by the Giannini Foundation of Agricultural Economics. Foundation membership is made up of agricultural and resource economists in Agricultural and Resource Economics and Policy at Berkeley and Agricultural and Resource Economics at Davis. Members and their current research interests are listed on pages 2-3 of this issue of the *Reporter*. Awards received by members in 1997, 1998, and 1999 are reported on page 4.

The goal of the Giannini Foundation is to encourage research in the various areas of interest to agricultural and resource economists and to support the dissemination of research findings. The *Reporter*’s purpose is to provide information on the ongoing research of the Foundation, the extension of that research, and other related activities. The Foundation sponsored a number of research projects during 1997-1999. Titles of these projects, as well as those to be funded for the 1999-2000 academic year, are listed on pages 4-5 of the *Reporter*.

An important aspect of Foundation research is the guidance of graduate student Ph.D. dissertations; Ph.D. recipients for 1997, 1998, and 1999 and their dissertation titles are listed in this issue on page 6.

On pages 7-9 are descriptions of the activities of the UC Agricultural Issues Center, the UC Center for Cooperatives, and the Agricultural Personnel Management Program, all located on the Davis campus. The Center for Sustainable Development, located on the Berkeley campus, is described on pages 9-10.

Abstracts of new publications of the Foundation are on pages 10-11 in this issue. A list of other available Giannini reports is given on pages 12-13. These reports may be ordered using the form on the back page of the *Reporter*. Single copies of older publications are free upon request unless otherwise indicated.

The research and extension activities of members are reflected in part by their publications. This issue of the *Reporter* lists members’ publications, from mid-1997 through mid-1999, beginning on page 14. Complete bibliographical citations are given, permitting those interested to find cited works in libraries.
Members of the Giannini Foundation

Berkeley

Peter Berck, professor. Renewable resources, water economics, portfolio choice, risk and futures.

Alain de Janvry, professor. Agricultural policy and rural development in the Third World, including price policy, technological change, land reform, integrated rural development projects.


J. Keith Gilless, associate professor. Forest economics, management, wildland fire management, regional economics, and forest industries and trade.

George E. Goldman, Cooperative Extension economist. Estimation of the local economic impacts of resource use and state and local government policy, local government finance, economic development, economics of land use.

W. Michael Hanemann, professor. Valuing natural environments, pollution control policy, water resources economic policy, agricultural, urban, and stream values of water, fisheries, public finance.

Larry S. Karp, professor. International trade policy, industrial organization, environmental and resource economics, and dynamic games.

Jeffrey T. LaFrance, professor. Agricultural policy, econometrics, microeconomic theory, and natural resource economics.

Ethan Ligon, assistant professor. Growth and development, agricultural contracts, applied econometrics, information and uncertainty.

Richard B. Norgaard, professor. Ecological, energy, and environmental economics.

Jeffrey M. Perloff, professor. Industrial organization, labor, international trade, law economics, information and marketing.

Gordon C. Rausser, dean of the College of Natural Resources and Robert Gordon Sproul Distinguished Professor. Collective decision making, quantitative models, environmental economics, law and economics, industrial organization, commodity futures markets.

Jeffrey M. Romm, professor. Resource and environmental policy, distribution, economic growth and environment; forest, river basin and water institutions.

Howard R. Rosenberg, Cooperative Extension economist. Agricultural labor management in relation to federal and state law, labor markets, and production technology; farm employment and worker contracting issues including selection, supervision, training, and compensation.

Elisabeth Sadoulet, associate professor. Economic development, agricultural policy, rural institutions, contract theory.

Jerome B. Siebert, Cooperative Extension economist. Marketing, management, resource and environmental economics; special emphasis on farm program and macro economic policy relationships to agriculture.

David L. Sunding, Cooperative Extension economist. Agricultural policy, water allocation, pesticide regulation, endangered species, technology development and adoption.

Michael Ward, assistant professor. Environmental and resource economics, econometrics, and microeconomic theory.

Brian D. Wright, professor. Commodity market stabilization, agricultural price policy, economic development, public finance, research and development, biotechnology and genetic resources, natural resource economics, and industrial organization.

David Zilberman, George and Elsie Robinson Professor. Agricultural, water, and environmental policy design; the economics of technological change; and the agricultural resource base.

Davis

Julian M. Alston, professor. Agricultural policy, agricultural markets, agricultural research and development, demand analysis, international trade.

Steven C. Blank, Cooperative Extension economist. Financial management, risk analysis and management methods.

L.J. (Bees) Butler, Cooperative Extension economist. Dairy and poultry marketing, food and agricultural policy, market structure and technological change, intellectual property rights.

Michael R. Caputo, professor. Microeconomic theory, natural resource economics.

Hoy F. Carman, professor. Agricultural marketing, impacts of taxes on agriculture.

Colin A. Carter, professor and chair, Department of Agricultural and Resource Economics. International trade, futures markets, commodity markets.

James A. Chalfant, professor. Demand analysis, agricultural production, agricultural marketing, risk and uncertainty, econometrics.

Roberta L. Cook, Cooperative Extension economist. Marketing of fresh fruits and vegetables, food distribution, international trade and competitiveness.

Y. Hossein Farzin, associate professor. Microeconomic theory, risk and uncertainty, environmental and natural resource economics, development economics.
Rachael E. Goodhue, assistant professor. Agricultural marketing and organization, agricultural policy, market learning, industrial organization.
Richard D. Green, professor. Econometrics, demand analysis, price analysis.
Arthur M. Havenner, professor. Econometrics, forecasting, optimal control.
Thomas W. Hazlett, professor. Applied price theory, regulation, law and economics.
Dale M. Heien, professor. Consumer economics with emphasis on demand analysis and regulation, agricultural marketing.
Garth J. Holloway, assistant professor. Agricultural policy, food marketing, industrial organization. (Through June 30, 1999)
Richard E. Howitt, professor. Resource economics, optimal dynamic policies, value of information, sectoral analysis, water allocation.
Lovell S. Jarvis, professor. Agricultural and economic development, food and nutrition policy, livestock economics, agricultural research policy, international trade.
Desmond A. Jolly, Cooperative Extension economist. Agricultural marketing, agricultural sustainability, food safety, technology adoption, limited resource farmers, community development
Karen M. Klonsky, Cooperative Extension economist. Farm management, pest management, sustainable agriculture, cost of production, organic agriculture.
Philip L. Martin, professor. Immigration policy, farm and rural labor markets, rural development.
Catherine J. Morrison Paul, professor. Production and market structure, cost economies, productivity, factor demand.
Quirino Paris, professor. Microeconomics, mathematical economics, mathematical programming, econometrics.
Scott Rozelle, associate professor. Development economics, economics of transition.
Richard J. Sexton, professor. Cooperatives, agricultural marketing, industrial organization.
Lawrence E. Shepard, senior lecturer, SOE. Investments, finance, consumer economics, public policy.
Daniel A. Sumner, Frank H. Buck, Jr. Professor. Agricultural policy analysis, international trade, labor supply.
J. Edward Taylor, professor. Agriculture in economic development, population and human resources, applied econometrics.
James E. Wilen, professor. Natural resources, fisheries, pollution.
Jeffrey Williams, Daniel Barton DeLoach Professor. Commodity markets, financial markets, mathematical programming, econometrics, economic history.

Davis Faculty After January 1, 2000
Stefanie Kirchhoff

University-wide
W.R. Gomes, vice president, Division of Agriculture and Natural Resources
Henry J. Vaux, Jr., associate vice president, Division of Agriculture and Natural Resources
Daniel A. Sumner, director, UC Agricultural Issues Center

Associate Members
Keith C. Knapp, professor, Environmental Sciences, UC Riverside
David F. Layton, assistant professor, Division of Environmental Studies, UC Davis
Marca Weinberg, assistant professor, Division of Environmental Studies, UC Davis

Emeriti
Irma Adelman
George B. Alcorn
Lee C. Benson
Oscar R. Burt
Harold O. Carter
Lawrence S. Davis
Kenneth Farrell
Jerry Foytik
Ben C. French
B. Delworth Gardner
Leon Garoyan
Warren E. Johnston
George G. Judge
Gordon A. King
Sylvia Lane
Elmer W. Learm
Samuel H. Logan
John W. Mamer
Alex F. McCalla
Chester O. McCormick
William McKillop
Kirby S. Moulton
Doyle A. Reed
Refugio I. Rochin
Robert C. Rock
Gordon A. Rowe
Andrew Schmitz
Stephen Sosnick
J. Herbert Snyder
Dennis E. Teeguarden
Henry J. Vaux
L. Tim Wallace
William W. Wood, Jr.
Edward A. Yeary
John A. Zivnuska

In Memoriam
Varden Fuller
Awards Received by Giannini Members, 1997-1999

This section reports awards received by members from professional organizations for July 1997 through June 1999.


Giannini-Sponsored Research Projects

Since July 1983 the Foundation has awarded funds for research projects on a competitive basis according to the following criteria:

* The research should address a problem faced by California agriculture or national resource systems now or in the future;
* The research should have a high probability of increasing understanding of a California agricultural or natural resource problem;
* The research should contribute to the ability of university academic staff to undertake further research in the subject area;
* The research should present results needed by policy makers.

A list of research projects since the 1998-99 academic year follows. Foundation members’ last names are italicized. To inquire about publications stemming from these projects, contact the principal investigators directly. Foundation members are listed by campus in this Reporter. In many cases the research is not complete, so publications may not yet be available.

Projects Funded for 1998-99

Technology Spillovers and California Agriculture, Julian Alston.

Inefficient Water Use in the Dry Milk Market, Peter Berck.

Continental Agricultural Trade Wars, Colin Carter.

Commodity Grades and Adverse Selection: Application to the California Prune Market, James Chalfant and Richard Sexton.

The Impact of Oil Price on Additions to the U.S. Proven Oil Reserves, Y. Hossein Farzin.

Economic Impact of Climate Change on Agriculture and Related Hydrologic Resources in California, Anthony Fisher and Michael Hanemann.


Firm-Level Measurement of Promotion Effectiveness, Garth Holloway.

Welfare and Environmental Effects of Banning Trade in Specific Products, Larry Karp.


Immigration and the Changing Face of Rural California: Focus on the Central Valley, Philip Martin and J. E. Taylor.

Measuring the Productivity of Pesticides in Agricultural Production, Catherine Morrison.

Transitions Among Agricultural Work, Nonagricultural Work and Other Activities, Jeff Perloff.


Econometric Analysis of Professional and Do-It-Yourself Pesticide Use in Yard Care, Michael Ward.

An Economic Analysis of Farming/Wildlife Rotation Options at Tule Lake, James Wilen and Karen Klonsky.

Supply Response for Storable Commodities, Brian Wright.

Managing Genetic Diversity of Monterey Pine in Light of Pitch Canker, Brian Wright.

The Economics of Precision Agriculture with Application to California, David Zilberman and David Sunding.

Projects Funded for 1999-2000


Predicting Vineyard Expansion and its Environmental Consequences, Peter Berck.


Patterns in China’s Agricultural Trade Balance: Implications for World Markets, Colin Carter.

The Role of Information in the Management of Nonpoint Source Pollution: The Case of Sediment Control at Redwood National Park, Y. Hossein Farzin.

Economic Impact of Climate Change on Agriculture and Related Hydrologic Resources in California, Anthony Fisher and Michael Hanemann.

Community Policy Analysis Impact Model for California, George Goldman.

Is Quality-Based Compensation an Incentive for Producers? The Case of Processing Tomatoes, Rachael Goodhue.

Residential Water Use in Los Angeles—A Disaggregated Analysis, Michael Hanemann.

Immigration and the Changing Face of Rural California: Focus on the Sacramento Valley, Philip Martin and J. Edward Taylor.

Efficiency Wages and Agricultural Workers, Jeffrey Perloff.

Milk Quality and Marketing Orders, Daniel Sumner.

Econometric Analysis of Professional and Do-It-Yourself Yard Chemical Use, Michael Ward and Scott Templeton.


Animal Waste and Contract Farming, David Zilberman.
Ph.D. Recipients and Dissertation Titles, 1997-1999

Copies of dissertations may be obtained from:
Bell & Howell, P.O.Box 1346, 300 North Zeeb Road, Ann Arbor, MI 48106. (www.bellhowell.infolearning.com)

**Berkeley 1997**


Dumas, Christopher F., *Cross-Media Pollution and Common Agency.*

Goodhue, Rachael E., *Agricultural Complementarities and Coordination: Modeling Value Differentiation and Production Contracting.*


Murgai, Rinku, *Localized Reciprocity, Self-insurance, and Agricultural Productivity in South Asia.*


**Berkeley 1997**


Dumas, Christopher F., *Cross-Media Pollution and Common Agency.*

Goodhue, Rachael E., *Agricultural Complementarities and Coordination: Modeling Value Differentiation and Production Contracting.*


Murgai, Rinku, *Localized Reciprocity, Self-insurance, and Agricultural Productivity in South Asia.*


**Berkeley 1998**


Koo, Bonwoo, *The Economics of Plant Genetic Resources: The Effects of Alternative Intellectual Property Protection Systems and Advances in Biotechnology.*


Millock, Katrin, *Monitoring and Enforcement under Incomplete Information: Essays on Nonpoint Source Pollution.*

Narain, Urvashi, *Essays on Common Property Resources with Applications to Forestry and Global Warming.*


Yarkin, Cherisa J., *Challenges and Opportunities: Pesticides, Regulation and Innovation.*

Zivin, Joshua S., *The Economic and Health Effects of Environmental Policy.*

**Berkeley 1999**


Reinelt, Peter S., *Betting with the Planet: Uncertainty and Global Warming Policy.*

**Davis 1997**

Evans, Mark, *Analysis of Vessel Performance and Mobility in the California Commercial Salmon Fishery.*


Wolf, Christopher, *Measuring and Explaining Dairy Farm Size Distributions.*

Zhang, Mingxia, *Three Essays on Imperfect Competition Analysis.*

**Davis 1998**


Hampton, Stephen, *Examination of Deforestation in Sub-Saharan Africa at the Household Farm Level.*


Olsson, Raymond, *Oilseeds Trade Dispute Between the United States and the European Community.*

Sanickirico, James, *Bioeconomics of Spatial and Intertemporal Exploitation: Implications for Management.*

The UC Agricultural Issues Center

University of California, Davis, 95616
(530) 752-2320  Web site: http://aic.ucdavis.edu

The Agricultural Issues Center is a statewide program of UC Division of Agriculture and Natural Resources (DANR) located on the Davis campus. It serves as a forum where crucial trends and policy issues affecting agriculture and natural resources in California and the nation are analyzed and the results made available to both policy makers and those affected by policies.

The Center consists of a director, several associate directors, a small professional staff, and an advisory board made up of leaders from the agricultural community and the public sector. The board provides policy guidance and contributes to formation of the issue agenda. Associate directors, chosen from UC faculty and extension specialists, provide leadership in particular program areas.

Faculty and staff from across the UC system and representatives from government, industry, and the public participate in selecting issues for study and help design and implement the research. Major projects may involve 50 or more of these experts for a year or longer and lead to large scale conferences and publication of reports.

Current staff includes:

Daniel A. Sumner, director
Ray Coppock, communications specialist
Sandy Fisher, administrative specialist
David Hart, graduate research assistant
Karen Jetter, Ph.D., program researcher
Marcia Kreith, program analyst
Nick Kuminoff, graduate research assistant
Melissa Rose, administrative assistant
Joo-Ho Song, Ph.D., visiting economist
Laurie Treacher, office assistant

Associate Directors:

Julian M. Alston, Science and technology
Colin A. Carter, International trade
Keith Knapp, Resources and the environment
Jerome Siebert, Agribusiness issues
Alvin D. Sokolow, Rural/urban interactions

The Agricultural Issues Center publishes the AIC Quarterly which includes current activities and a list of publications. Published periodically, AIC Issues Briefs provide non-technical discussions of important trends and issues. The 1998 to 1999 titles are:

Issues Brief No. 4
Science and Technology in California Agriculture

Issues Brief No. 5
Management Changes and Impacts of the 1996 Farm Act: A National Study and a California Viewpoint

Issues Brief No. 6
Organic Agriculture in California: A Statistical Review

Issues Brief No. 7
Water Transfers and Groundwater Management: An Economic Analysis

Issues Brief No. 8
Improved Data on California’s Agricultural Exports

Issues Brief No. 9
Agricultural Impacts of the Asian Economic Turmoil: A California Focus

Following is a list of recent publications that may be purchased:

California Farmland and Urban Pressures, Statewide and Regional Perspectives (1999) $20


The Measure of California Agriculture: Its Impact on the State Economy, Rev. 1998 $10

California’s Future: Maintaining Viable Agriculture at the Urban Edge (1997) $15

Farmers and Neighbors: Land Use, Pesticides and Other Issues (1996) $13

To order books or videos, send a check or credit card information (Visa/Master Card) to: Agricultural Issues Center, One Shields Avenue, Davis, CA 95616. Price includes shipping and handling; books are shipped immediately.


The AIC Quarterly and Issues Brief newsletters are mailed free of charge. For mailing list information or conference registration, e-mail aissues@ucdavis.edu, call 530-752-2320, or fax 530-752-5451.
The UC Center for Cooperatives, located on the Davis campus, was created by the State Legislature in 1987. The Center provides programs of public information, cooperative education, and technical assistance to agricultural and consumer cooperatives of all types. These programs are enhanced by findings from competitive and discretionary research and program development grants from the Center to scholars at the University of California, California State University, and other universities, and to consultants and cooperative practitioners. The funding for these grants varies with the needs expressed by cooperatives and with the Center's success in securing technical assistance and program development grants from other (i.e., non-university) sources.

The Center produces both popular and scholarly publications related to cooperatives. Current research themes include cooperative finance, member relations, and executive and director compensation. Education programs are held in the late fall and the early spring. Technical assistance for new cooperative development is extended to producers of all sizes, but there is heavy concentration on the use of cooperatives as a development tool.

The Center has a number of videos and publications in English and Spanish available for purchase. A list of recent publications follows:

**Paradise for Sale** .......................................................... $10.00
**Steps to Starting a Worker Co-op** ................................. $10.00
**Guide to Assembling a Director Handbook** ..................... $10.00
**Social Benefits of Housing Cooperatives** ....................... $10.00

**Cooperatives and Community Development**
(Course outline and reader) ........................................... $25.00

**The 1997 National Cooperative Executive Compensation Survey** .......................................................... $10.00

**Economic Facts About California’s Agricultural Cooperatives** .......................................................... Free

**The ABCs of Cooperative Child Care (video)** ............... $20.00
**El ABC del Cuidado Infantil Cooperativo (video)** .......... $20.00
**It’s the Camaraderie: A History of Parent Cooperative Preschools** ......................................................... $25.00
**Procedimientos para Establecer una Cooperativa de Trabajadores (Steps to Starting a Worker Co-op)** ... $10.00
**Democracy in the Workplace (video)** ............................ $25.00
**Taking Control: Tenant Operation and Ownership of Rental Housing (video)** ....................................... $20.00
**Cooperando** ................................................................ $10.00
**The WAGES Curriculum: Teachers’ Guide to Starting Cooperatives in Low Income Communities** .......... $10.00

Staff specialists include:

Mahlon G. Lang, director, **agricultural cooperatives, development and cooperative Education.**

E. Kim Coontz, **child care, consumer cooperatives.**

Karen Spatz, **rural development, agricultural cooperative education.**

To order the complete list of publications from the Center for Cooperatives, telephone 530-752-2408.
The UC Agricultural Personnel Management Program (APMP) conducts outreach and research on agricultural personnel issues in order to contribute to farm business success and improve farm labor well-being in California agriculture. APMP also provides public administrators and lawmakers with analyses of farm labor issues, and works to help all those involved understand public policies, laws, and regulations.

APMP academic staff provides programs on personnel management through group instruction and publications, and conducts applied research on personnel and labor issues supporting these outreach efforts. Staff also writes articles, research reports and other teaching references for newsletters, general releases, county publications, and industry and scientific journals. Information about farm labor issues is disseminated through broadcast and electronic media.

Daniel A. Sumner, Frank H. Buck, Jr. Professor, and director of the Agricultural Issues Center (based on the Davis campus) was named APMP program director in July 1999. Other academic staff working on personnel issues includes Howard R. Rosenberg, Cooperative Extension labor management specialist (based on the Berkeley campus) Gregory Encina Billikopf, area personnel management farm advisor (based in Stanislaus County) and Stephen R. Sutter, area personnel management farm advisor (based in Fresno County).

Recent and ongoing publications produced by APMP statewide and county offices include: the statewide program newsletter, Labor Management Decisions; the Fresno County Farm Advisor’s local newsletter, Agricultural Personnel Management Newsletter; and handbooks, booklets and information sheets on personnel management, legal, health, and safety topics. In the spring of 1999, the publication Who Works on California Farms, Demographic and Employment Findings From the National Agricultural Workers Survey, was produced by the APMP and the DANR Communication Services.

The APMP Web site contains a rich and continually growing stock of material, as well as structured links to educational articles, legal and government guides, teaching materials, data bases, research reports, newsletters, advice, and other resources from the APMP staff. Anyone interested may join AG-HRnet, a group sharing announcements, practical questions, and views on topics in agricultural human resource management. The site includes a gateway to the WRS-forum, an active discussion network focusing on the federal worker protection standards and related pesticide safety regulations. Access to all these web pages is through two interconnected World Wide Web locations:

http://are.berkeley.edu/APMP/

and

http://www/cnr/berkeley.edu/ucce50/7grisha.htm
The Center for Sustainable Resource Development (CSRD) at UC Berkeley was formally established in 1994. The goal is to provide intellectual and practical leadership in the identification and implementation of effective strategies for achieving a sustainable society. At the Center, sustainable development is thought of as activity that expands human opportunities in ways that avoid excessive fluctuations and irreversible losses in ecological, social and economic options over time. Sustainable development is thus as much about people as it is about natural resources and the environment.

The Center relies on fostering, securing and maintaining flexible working relationships among UC Berkeley faculty, specialists and practitioners. CSRD activities are problem-driven and cross-disciplinary, collaborative, adding value rather than detracting from existing efforts, promoting interventions that work across a wide range of conditions and applications, and requiring a minimum of bureaucracy and administration.

The practical applications of the Center’s approach are wide ranging and include: watercourse restoration; better links between environmental science, environmental regulations and the drivers of economic growth; diversification of rural and urban communities in sustainable ways; environmentally sound trade and commerce policies; improved ecosystem management and adaptive management strategies; enhanced regional and global responses to urbanization; and the widespread application of ecologically safe biological control practices and bioengineered systems.

The aim of the Berkeley Center for Sustainable Resource Development is to enhance the quality and content of private, national and global decision making on the environment, natural resources and agriculture. The Center brings together leading scientists, engineers, economists, planners, and other experts from industry, government, and the environmental communities through science-based, multidisciplinary teamwork. Using the vast resources of the Berkeley campus and the University of California, the Center promotes linkages on the major issues affecting environmental quality and healthy economies.

The challenge facing the scientific community and political leadership is to develop and implement policies and management strategies that promote economic development and human well-being without degrading natural resources and the environment. The continuing destruction of ecosystems makes it critical to meet this challenge in the immediate future. The Center aims to provide leadership in generating solutions and educating professionals and policymakers who will implement sustainable development strategies.

With leadership support from Time-Warner, Inc., and the Buck Kingman Fund, the Center’s mission has been to undertake balanced, science-based, multidisciplinary initiatives with the following objectives:

- train new generations of leaders in the US and globally who are capable of applying a broad range of environmental knowledge to problem solving, while bringing together diverse, increasingly polarized, interests.
- developing solutions, while bringing together diverse, increasingly polarized, interests.
- trigger the development of policies, strategies and technical solutions to resource management problems in ways that expand human opportunities and enhance environmental quality.
- improve understanding of the dynamics of interaction of human and natural systems and identify principles for managing resources in a self-sustaining (self-correcting) fashion.
- redefine public policy by providing relevant science, policy expertise, and innovations for timely feedback, prompt learning and rapid adaptive responses.

CSRD affiliated members:
Alain de Janvry
Andrew P. Guiterrez
T.N. Narasimham
Vincent Resh
Jeff Romm
David Sinding
David Zilberman

Center projects include:
- Biotechnology and genetic engineering
- Food, nutrition and health
- Global climate change
- CO2 sequestration schemes and markets for carbon trading
- Biological control and pest management
- Water resources
- The Hewlett Program in Population, Resources and the Environment

The California prune industry, through the California Prune Board (CPB) and Sunsweet Growers, the largest marketer of California prunes, has invested substantially in the promotion of prunes to consumers. This study analyzes the effectiveness of these expenditures. The study focused on applying the economics of demand analysis to the California prune industry. Three data sets were used to estimate prune demand. These included monthly observations for the period from September 1992 to July 1996, annual observations on domestic prune shipments and prices for the period 1949 to 1995, and results of a test market analysis of television advertising for prunes conducted in six U.S. cities.

Results from analysis of the monthly data indicate that prune promotion has increased the demand for prunes. Across several alternative model specifications examined and reported in part 3, the expenditure on prune promotion had a consistently statistically significant, positive impact on retail prune sales. For the various models estimated using ordinary least squares (OLS), the elasticity of sales with respect to promotion generally ranged from 0.17 to 0.22, meaning that a 10 percent increase in expenditures on promotion would have induced about a 2 percent increase in sales, holding price and other explanatory variables constant. The models based on the annual data series did not perform as well and were not used further in the analysis. Diagnostic tests led to the conclusion that, because of data deficiencies or an incorrect model form, the annual models were not specified correctly. Analysis of the test-market data indicates that the television advertisements had a positive and statistically significant effect on prune demand both during the period of the advertising campaign and during a post-test period. Print advertisements and in-store displays used during this time in conjunction with the television advertising campaign did not appear to have any independent impact on prune sales.

A simulation approach was used to translate the effects of promotion on prune demand into estimates of the resulting marginal benefits to prune growers. The marginal benefit-cost ratio for promotion of California prunes was calculated using the results of the monthly analysis of demand and alternative supply specifications in a simulation model for the industry. Promotion of California prunes by the CPB and Sunsweet Growers has significantly increased the demand for prunes and returns to prune producers. Over the four-year period analyzed, investments by prune growers in promotion yielded them marginal returns of at least $2.65 for every dollar spent. Moreover, marginal benefit-cost ratios in the range of 2.7:1, and higher, indicate that the industry could have profitably invested even more in promotion during this period.
This study determines the effect of California avocado industry advertising and promotion expenditures on the demand and price for California avocados and estimates the ratio of benefits to costs for marketing programs conducted by the California Avocado Commission. Separate models for annual and monthly avocado demand were specified and estimated. Monthly results were in line with expectations and were a definite improvement over the annual model. Estimated coefficients for each of the variables had the expected sign, most were statistically significant, and the magnitude of the estimates was reasonable. Advertising and promotion expenditures had a statistically significant positive effect on the price of (and demand for) California avocados. The monthly and annual price flexibilities of demand with respect to advertising and promotion were almost identical (0.137 for the monthly analysis vs. 0.130 for the annual analysis). Advertising and promotion also had estimated lagged impacts on California avocado prices and demand that extended five months after the month the expenditures were paid. The estimated price flexibility of demand of -1.54 is larger than the annual estimate of -1.33, but the monthly quantity variable includes both California and Florida sales. The demand for California avocados at average prices and quantities is inelastic at both the farm and f.o.b. levels, whether measured on an annual or monthly basis. This means that total industry revenues will be less for a large crop than for a small crop.

Benefits accruing to the California avocado industry from advertising and promotion were measured in the short run (assuming fixed supply) and in the long run (after adjustment of acreage to price changes). The fixed supply (short-run) benefits were estimated both annually and monthly. The annual fixed supply industry returns from CAC advertising and promotion expenditures ranged from a weighted average of $5.33 to $6.01 per dollar spent, depending on the time period examined and the discount rate used. (Note that all returns are total returns before the deduction of advertising expenditures.) A simple average of the annual fixed supply benefit-cost ratios is equal to 5.25. Short-term returns for the most recent nine years (1986-87 through 1994-95 marketing years), based on the monthly analysis and discounted at 3 percent, yields a weighted average return of $6.35 per dollar spent on advertising and promotion. For the nine-year period of analysis, the monthly marginal and average benefit-cost ratios are equal to 8.92. The marginal benefit-cost ratios were greater than one for all but two months of the period, indicating that the CAC could have profitably increased advertising and promotion during all but two months of the nine-year period.

These returns are eroded over time, however, when the acreage response to higher returns is factored into the analysis. The annual simulation model was run with actual and zero advertising and promotion expenditures and the annual difference in total industry revenues was compared to advertising and promotion expenditures. CAC marketing program expenditures increased estimated net total industry revenues by $102.8 million over the period of analysis. When real costs and returns were discounted at 0 and 3 percent, the overall long-run discounted real returns from advertising and promotion were $1.78 and $1.71 per dollar spent, if producers paid the total costs of the program. After accounting for costs shifted to buyers, California avocado producers enjoyed an estimated annual average benefit-cost ratio of 2.84 for the 34-years of the analysis. The long-run weighted average benefit-cost ratios with costs and returns discounted at 0 and 3 percent, are 2.48 and 2.26, respectively.

The Monograph Series

The purpose of the Monograph Series is to provide an outlet for reports of research which are longer than journal papers but are directed to the same audience and appraised by criteria equivalent to those of leading technical journals in agricultural economics. The first seventeen monographs were published in the University of California’s Hilgardia series. In 1967 the Giannini Foundation began a separate series for reports in agricultural economics but continued the numbering sequence. The following Monographs in the Giannini series are still available and may be ordered by number using the form on page 27.


No. 20. Models of Commodity Transfer by Duran Bell, Jr., 1967.


No. 34. Optimal Staging of Russian River Basin Development by Uri Regev and Ivan Lee, 1975.


No. 36. Production Functions and Supply Application for California Dairy Farms by Irving Hoch, 1976; includes a statistical supplement No. 36A.


No. 43. The California Table Grape Commission’s Promotion Program: An Evaluation by Julian M. Alston, James Chalfant, Jason E. Christian, Erika Meng, and Nicholas Piggott, 1997. ................................................................. $14

Research Reports

The Research Report Series is designed to communicate research results to specific professional audiences (e.g., agricultural industry economists, resource agency staffs, and other professionals) interested in applications. Such reports have significant analytical content but are developed and presented with these specific user audiences in mind. The following Research Reports are still available and may be ordered by number using the form on page 27.


No. 343. Transportation and Marketing Efficiency in the California Processing Tomato Industry by Catherine A. Durham, Richard J. Sexton, and Joo Ho Song, 1995 ... $8


Information Series Reports

The purpose of the Information Series is to communicate selected research results to a lay audience. The Information Series, initiated in 1963, is numbered serially within years. The following Information Series reports are available and may be ordered using the form on page 27.


No. 88-3. *Factors Critical to the Success or Failure of Emerging Agricultural Cooperatives* by Richard Sexton and Julie Iskow.


No. 94-3. *California Vegetable Crops: Production and Markets* by Roberta L. Cook, Carole Frank Nuckton, and Warren E. Johnston. .................................................................$ 8

No. 95-1. *Reducing Citrus Revenue Losses from Frost Damage: Wind Machines, and Crop Insurance* by Raymond Venner and Steven C. Blank. .........................$ 8

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