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# Selected Papers

**TITLE: Agricultural Finance Topics** (Moderator: Leigh J. Maynard, University of Kentucky)

**Determinants of Financial Performance of Small and Limited Resource Farms.** *Cheryl J. Steele and Ashok K. Mishra, USDA/ERS*

This paper investigates the factors affecting financial performance of limited resource and other small farms using farm-level survey data. Results indicate that performance of limited resource farms depends on age, soil productivity, debt-to-asset ratio, and ratios of variable and fixed costs of production to value of agricultural production.

**The Impacts of Environmental Regulation on Borrower's Incentives to Default.** *Gregory Ibendahl, University of Kentucky; and Eric A. DeVuyst and Dave Lins, University of Illinois*

Environmental regulations are another factor that lenders should consider when designing loan contracts. Even though no physical damage occurs, the regulations may be costly to implement and cause revenue reductions. This loss in profitability may create incentives for the borrower to default. Down payment and fees can help protect lenders.

**Assessing Agricultural Risk Among States.** *Allen M. Featherstone and M. Scott Daniel, Kansas State University*

Agricultural return risk for each state in the U.S. is compared with the U.S. agricultural risk. The Capital Asset Pricing Model is used to examine the systematic and the unsystematic nature. In addition, a quantitative estimate of the sensitivity of an individual state's riskiness is estimated.

**Structural Analysis of the Nursery Industry: A Study of Public Firms.** *Steven C. Turner and Forrest Stegelin, University of Georgia*

The ornamental floriculture and nursery products sector is much less concentrated than some other agricultural sectors, such as the poultry industry. Only two firms are publically traded. There are opportunities for more public offerings in this sector but most firms have decided to grow internally rather than through public offerings.

**TITLE: Livestock Management** (Moderator: Jason L. Johnson, Texas Agricultural Extension Service)

**Sire Selection: The Commingling of Economics and Genetics.** *William Herring and Vern Pierce, University of Missouri; Mike MacNeil, USDA/ERS; and Larry Benyshek, University of Georgia*

With the widespread use of Expected Progeny Differences (EPDs), the identification of candidates to become parents has centered primarily on growth. We have developed a bio-economic model to predict differences in profitability between candidate sires based on multi-trait EPD selection for an individual farm.

**A Risk-Return Comparison of Retained Ownership Programs Using Alternative Hedging and Pricing Strategies.** *Wendy J. Umberger and Dillon M. Fewz, University of Nebraska-Lincoln*

E-V analysis and first- and second-degree stochastic dominance are used to determine risk efficient retained ownership marketing strategies. Results indicate hedging may not always provide the most efficient outcome for producers

from a risk standpoint. The risk-efficient marketing strategy also varies depending upon the specific retained ownership program.

**Impacts of the Red Imported Fire Ant on the Texas Cattle Industry.** *Steve Teal, Kirstie Moates, and Eduardo Segarra, Texas Tech University; and Charles Barr and Bart Drees, Texas A&M University*

The spatial economic impacts of the red imported fire ant (RIFA) on the Texas cattle industry were estimated using regression analysis. Data from a survey of Texas cattle producers was used in conjunction with Agricultural Census data to estimate economic impacts on a per-county and per-acre basis.

**TITLE: Social Issues: Technological, Investment, Adoption, and Environmental Effects** (Moderator: Albert J. Allen, Mississippi State University)

**Gender and Adoption of Agroforestry Technologies in Senegal.** *Michael Satin and Dale Colyer, West Virginia University*

A partial budget analysis and logit model are used to identify profitability and socioeconomic factors that influence the use of agroforestry in Senegal. Partial budget analyses indicate that live fencing and windbreaks are profitable. The logit model estimates that access to extension, literacy, gender, income, and access to credit are significant indicators.

**Redistribution of Social Benefits from Advances in Research and Extension in the Tanzanian Maize Industry.** *Ephriam Nkonya, Kansas State University; and Joseph L. Parcell, University of Missouri*

Using collected data from Tanzanian farms the rate of supply curve shift and the percentage of off-farm marketable surplus were computed. These results aided in calculating consumer and producer welfare distributions. For instance, it was found that for an off-farm marketable surplus of 60% consumers and producers equally gain.

**Social and Environmental Consequences of Private and Public Investment in Shrimp Aquaculture in Indonesia.** *Curtis M. Jolly, Auburn University; and Tridoyo Kusumastanto, Bogor University*

Multi-period dynamic linear programming model at the project or farm level and sequential programming at the regional level were used to evaluate public and private investment strategies for the brackish water shrimp industry in Indonesia. There were trade-offs between investment strategy, shrimp production, income, employment, and environmental preservation.

**Policies Affecting Production Practices and Adoption of Integrated Pest Management for Jamaican Farmers in Ebony Park, Clarendon.** *Joseph Ogradowczyk, Darrell Bosch, and David Orden, Virginia Polytechnic Institute and State University*

Integrated Pest Management (IPM) systems increased profitability of the non-traditional export crops of hot pepper, sweet potato, and callaloo. IPM profitability was not reduced by economic liberalization policies including preclearance crop inspections, fluctuations in the real exchange rate, and the elimination of agricultural subsidies.

**TITLE: Quantitative Methods** (Moderator: Bruce L. Dixon, University of Arkansas)

**Evaluating Bankers' Probability Forecasts of Intermediate-Term Loan Rates.** *Ted Covey, ERS/USDA*

This paper evaluates bankers' probability forecasts of interest rates using the Brier Probability Score, Murphy's New Vector Partition, and Yates Covariance Decomposition. Bankers outperformed both a naive model and a model with foreknowledge of the long-run relative frequencies of the future forecasted outcomes.

**Risk Bearing and Risk Sharing Implications of Target MOTAD Models.** *Francis*

*McCamley and Richard K. Rudel, University of Missouri*

The expected return for risk bearing implied by Target MOTAD models is examined. The characteristics of this expected return are compared to the expected return for risk bearing implied by the mean-variance model. The possibility of using Target MOTAD dual solutions to evaluate risk sharing opportunities is also considered.

**Analysis of Agricultural Water Demand in Northwest Florida: An Application of Quasi-Fixed Variables to Water Policy.** *Charles C. Moss and Christopher de Bodisco, University of Florida*

The derived demand for water in Northwest Florida is estimated using water as a quasi-fixed variable in a dual profit function. The shadow value of irrigation is determined as a function of input and output prices. Specifying an investment function for irrigation enables the projection of future water demand.

**TITLE: Agricultural Production and Sustainability** (Moderator: Zacch Orolunnipa, Florida A&M University)

**Farm Location and Endogenous Water Quality Regulation in U.S. Hog Production.** *Mark Metcalfe, Iowa State University*

This paper examines the effect of environmental regulation on the location of hog production. Supply and demand of hog inventory placements within states is modeled. Results suggest greater stringency leads to increases in inventory but the magnitude of this effect is small and therefore a minor consideration in location decisions.

**An Assessment of the Economic and Environmental Potential of New and Innovative Manure Management Technologies.** *Lee A. Christensen, USDA/ERS*

Alternative technologies to the land spreading of manure offer potential to meet environ-

mental concerns associated with concentrated animal feeding operations. Several require significant investment and marketing efforts, but become more feasible as restrictions on land spreading increase. Emerging practices investigated include dietary modifications among others.

**Quality-Adjusted Quantity Indexes for Pesticides: Estimation of Shadow Prices for Physical and Environmental Characteristics for Corn, Cotton, and Soybeans.** *Richard Nehring, USDA/ERS; and Arthur Grube, EPA*

We calculated shadow prices for environmental characteristics using hedonic regression techniques for pesticide use on corn, cotton, soybeans, and selected regions for 1960–1984 and 1985–96. The shadow price estimates indicate that farmers have usually been willing to pay more for such characteristics over time, but at different rates by crop and region.

**Assessing the Retention Potential of Conservation Reserve Program Practices in Alabama.** *Okwudili O. Onianwa and Gerald C. Wheelock, Alabama A&M University*

Conservation reserve program (CRP) participants in Alabama were surveyed to determine the probable utilization of CRP acres should the contracts expire without opportunity for renewal. Of the 594 surveys administered, 204 (34%) were usable. Results indicate that 90% of CRP tree acres would be retained in trees, while 60% of CRP grass acres would be converted to row crop production.

**TITLE: Issues in Commodity Promotion and Marketing** (Moderator: Allen Featherstone, Kansas State University)

**The Aggregation Problem in Evaluating Promotion.** *Maria Cristina Espinoza and George C. Davis, Texas A&M University*

Comparing industry-level standard produc-

er surplus measures to the profit-function approach indicates that producer surplus does not yield an accurate measure of benefits from the assessment, technical change, and promotion expenditures. Allowing for differences among firms in the industry, having linear firm-level supply curves does not imply linear industry-level supply curves.

**Measuring the Relative Impacts of Brand Versus Generic Promotions: The Case for Fresh Cut Flowers.** *Ronald W. Ward and Arbindra Rimal, University of Florida*

Econometric models of the generic advertising of fresh cut flowers show that lower income consumers were influenced by the advertising while households with incomes above \$75,000 were not. AIDS models were then used to determine if the generic promotions were biased toward the selection of certain types of outlets.

**An Evaluation of the Effectiveness of the Florida Cooperative's Seasonal Pricing Plan on Seasonal Production Variability.** *Andrew Washington, Robert Lawson, and Richard Kilmer, University of Florida*

From 1993–1995, Florida dairy cooperatives implemented a seasonal pricing plan in an attempt to decrease the variability in seasonal production. Farmers who participated in the seasonal pricing plan were able to reduce seasonality by 20% percent. For farmers who did not participate, seasonality actually increased in each year by 32%.

**Empirical Evidence of the Performance of Cattle Marketed Through the Farmland Supreme Beef Alliance.** *Vern Pierce, Nicholas Kalaitzandonakes, and Joe Parcell, University of Missouri*

Farmland Supreme Beef Alliance (FSBA) has established a value-added coordinated beef system. The purpose of this study is to gauge how production efficiencies at the feeding stage impact carcass quality. Specifically, the results indicate that there are relationships be-

tween feedlot performance and carcass quality and yield grades.

**TITLE: Modeling the Relationship Between Agriculture and Regional Economies** (Moderator: Dave Hughes, Louisiana State University)

**Tobacco and The Farm Economy of Kentucky: An Analysis of Alternatives.** *John Martin, Martin Associates; John Dunham, Philip Morris Management Corporation; and Michelle A. Kubala, Martin Associates*

This analysis presents an economic evaluation of alternative employment opportunities available to tobacco farmers in the Commonwealth of Kentucky. Its purpose is to determine if alternatives to the production of burley and flue-cured tobacco were available that would allow farmers to maintain their incomes and current location residence.

**Attraction-Retention-Expansion Factors Among Georgia's Food Processing Industry.** *Forrest Stegelin and Jeffrey Dorfman, University of Georgia*

Managerial considerations relating to attraction, retention, and expansion characteristics within Georgia's food and kindred products processors are evaluated using a five-point Likert Scale assessing the relative importance of each factor to the location decision. Factor categories scored are infrastructure, environmental regulations, fiscal policy, markets, labor, and quality of life.

**Farm-Nonfarm Relationships Affecting Farm Size in the Southeast.** *Saleem Shaik and Glenn A. Helmers, University of Nebraska; and Joseph Atwood, Montana State University*

The impacts of nonfarm employment, the wages-capital price ratio, and the capital stock on farm size for the Southeast were examined using cross sectional county and time series state data. Little difference was found between the results for the Midwest and Southeast.

**TITLE: Teaching Assessment and Strategies** (Moderator: Burl F. Long, University of Florida)

**CPR for Lectures: Strategies for Reviving a Boring Lecture.** *Kim Harris, Southern Illinois University*

This paper is about what human resources development (HRD) and industry trainers can teach university professors about creating and presenting dynamic lectures. Strategies for reviving a boring lecture are presented. Taken together, the strategies provide an effective way to structure and present high impact lectures.

**Output and Employment Characteristics of Recent Ph.D.'s in Agricultural Economics in the South.** *Ronald A. Schrimper, North Carolina State University*

The number of new Ph.D. agricultural economists produced in the United States has been fluctuating, but no significant trend has emerged. The majority of recent Ph.D.'s residing in the United States have academic jobs. Graduates from southern institutions are more geographically concentrated compared to graduates from other regions.

**Achievement Comparisons in Economic Principles for Students of Agricultural Economics.** *C. Robert Stark, Jr. and Marsha Clayton, University of Arkansas-Monticello*

Agricultural economics students usually begin their program with economic principles courses, but microeconomic/macroeconomic sequences vary among institutions. A two-year achievement survey following different sequences identified no significant demographic factors compared to private, limited-admission colleges. Prior high school and college economics courses were also not shown significant toward principles achievement.

**Value Added Assessment of Undergraduate Degree Programs.** *Marionette Holmes and Josef M. Broder, University of Georgia*

A value-added approach for assessing undergraduate curricula is presented. Monetary returns to skills and attributes of alumni from UGA's College of Agricultural and Environmental Sciences are measured. Interpersonal skills provided the greatest value-added benefits for career advancement. Benefits were higher for non-agricultural economics major. Recommendations for revising curricula are presented.

**Active Learning Strategies for a Large Class: What Do Students Think of Them?** *Robert O. Burton, Jr., Sandra A. Flores, and Amy B. Gross, Kansas State University*

This research reports active learning strategies used in a large undergraduate class and measures how students thought those strategies affected their learning. Results contribute to enhanced learning in future semesters. The process used to assess the efficacy of active learning strategies could be used in other teaching and learning situations.

**TITLE: Information Systems and Emerging Concepts in Extension** (Moderator: Mark Waller, Texas A&M University Extension Service)

**Assisting Producer Cooperatives in Selecting Value-Added Processing Activities.** *Rodney B. Holcomb, Phil Kenkel, and Edwin Acbol, Oklahoma State University*

To generate additional income for their members, many cooperatives consider forward integrating into processing activities. Extension personnel are often asked by producer groups to help evaluate various processing opportunities. Using an Oklahoma wheat cooperative case study, this paper outlines a general system for evaluating the preliminary feasibility of value-added ventures.

**Impacts of the Missouri Show-me Selected Replacement Heifer Program.** *Richard Randle, Vern Pierce, D. J. Patterson, and Joe Parcell, University of Missouri*

The Show-Me-Select Replacement Heifer

Program was established to provide producers a reliable source of quality replacement heifers and increase marketing opportunities for and add value to Missouri-raised heifers. We have demonstrated empirical evidence that producers were rewarded for improving specific heifer characteristics.

**Farmer's Development and Use of Information Systems.** *Damona G. Doye, Oklahoma State University; Rob Jolly, Iowa State University; Rob Hornbaker, University of Illinois; Tim Cross, University of Tennessee; Robert King, University of Minnesota; and Anthony Yeboah, North Carolina A&T State University*

Researchers developed case studies of five farmers perceived as having innovative or successful farm information systems. Manager and information system attributes, information system development, and use of information in decision-making are discussed. The value from and cost of the system seem to be largely determined by human factors.

**Incorporating Sunflower into Great Plains Crop Systems: A Whole-Farm Analysis.** *Daryl L. Parker, Robert O. Burton, Jr, and Dale L. Fjell, Kansas State University*

The Purdue Crop/Livestock Linear Program was used to analyze incorporation of sunflower into a typical North Central Kansas farm. Results indicate that because of machinery field time constraints associated with soybean and grain sorghum, sunflower has potential as a full-season crop and possibly as a double crop.

**TITLE: Promotion and Product Differentiation** (Moderator: Darren Hudson, Mississippi State University)

**Agricultural Field Sales Goes Digital.** *Anthony Sepich and Kim Harris, Southern Illinois University*

This paper draws on survey results to examine the adoption and utilization of infor-

mation technology by salespeople selling agricultural input supplies to farmers and dealers located in the south central corn belt. Results reveal that agricultural salespeople are dramatically increasing their use of digital technology.

**Material Flow and Economic Value of Value-Enhanced Crops.** *Richard Maltsbarger and Nicholas Kalaitzandonakes, University of Missouri*

Value-enhanced crops are the next wave in agricultural biotechnology, but without sufficient changes in supply chain management these crops may never reach their full commercial potential. The objective of this research is to analyze the effects of potential changes in existing supply chains to support value-enhanced crops.

**Valuing Branded and Pathogen Tested Pork: A Comparison of Survey and Retail Trail Method.** *Darrell R. Mark, John A. Fox, and Michael A. Boland, Kansas State University*

We investigate consumer willingness to pay (WTP) for branded pork and the consistency of a mail survey and a retail trial. Results indicate that over two-thirds of the consumers in the study were WTP for branded pork and no statistical difference exists between the responses provided in the survey and retail trial.

**Allocating the Meat Case Under Branded Beef Retailing.** *M. Scott Daniel, Jayson L. Lusk, and Michael A. Boland, Kansas State University*

Supermarkets are faced with a wider array of available products but limited amounts of shelf-space. Category management yields optimal meat case allocations for branded and non-branded beef through revenue maximization subject to shelf-space, product usage, and price elasticity constraints.

**TITLE: Agriculture Productivity** (Moderator: Fred C. White, University of Georgia)

**Sources of Agricultural Productivity Growth: The Case of Southern States.** *Jet Yee, Mary Ahearn, and Doris Newton, USDA/ERS; and Wally Huffman, Iowa State University*

U.S. agriculture has experienced high levels of productivity. The source of this success is often identified with the publicly-supported USDA–Land Grant University System of research, extension, and education. This paper measures the public's contribution, as well as other factors, to agricultural productivity growth for the Southern states.

**Efficiency Analysis of Irrigated Corn Production in Kansas.** *Carlos E. Gutierrez, Michael R. Langemeier, and Waters Hall, Kansas State University*

The objective of this paper is to examine the relative efficiency of a sample of irrigated corn producers in Kansas. On average, the farms were 79% technically efficient, 75% allocatively efficient, and 91% scale efficient. Overall efficiency was positively related to enterprise size, percent acres owned, and yield.

**Returns to Scale and Diversification for Local Farm Supply and Grain Marketing Cooperatives: A Nonparametric Frontier Approach.** *Micheal R. Thomsen, University of Arkansas; and Vernon R. Eidman, University of Minnesota*

We use non-parametric cost frontiers to explore scale and diversification economies for local supply and grain cooperatives in five Midwestern states between 1989 and 1996. Results suggest many cooperatives were close to achieving scale efficiency. Furthermore, diversification has not been a successful means of lowering costs for most cooperatives.

**TITLE: Environmental Behavior and Non-market Valuation** (Moderator: John E. Lee, Jr., Mississippi State University)

**The Role of Wildlife Attitudes in the Recreational Choice: A Limited Dependent Variable Analysis.** *Jack C. Isaacs, Northeast Louisiana University; Yeong-Nain Chi, National I-Lan Institute of Technology at Taiwan; and E. Jane Luzar, Louisiana State University*

Attitudes toward wildlife are used to explain alternative means of accessing wildlife among consumers of wildlife-based outdoor recreation, including consumptive and non-consumptive uses. Wildlife attitudes are measured using data from a survey of outdoor recreationists and the Wildlife Attitude and Value Scale in a limited dependent variable model.

**The Ethical Basic of Environmental Behavior: Implications for Participation in the Wetland Reserve Program.** *Adam P. Shilling and E. Jane Luzar, Louisiana State University*

A relationship between attitudes and ethics is established and used to analyze the role of ethics in motivating environmentally-related behavior. Offers of participation in the WRP were evaluated via dichotomous choice. Empirical results indicate that a portion of the analyzed WRP participation decision can be attributed to an environmental ethic.

**Willingness to Pay for the SDWA: Do Income Reminders Matter?** *Nii A. Abrahams and Jeffrey L. Jordan, University of Georgia; and Bryan J. Hubbell, EPA-OAQPS*

Microeconomic theory indicates that consumers' income impacts demand for goods and services. We test the effect of income reminders on WTP for the provisions of the Safe Drinking Water Act. Results show WTP is higher without the income reminder but not significantly different from WTP with the income reminder.

**Comparing Nonmarket Valuation Methods to Calculate Water Quality Benefits: Which Number Should the Policy Maker Use?** *Leah G. Mathews, University of North Carolina-Asheville*



Two models estimate the value of improving water quality from the same sample data: a stated preference model and a model that combines stated and revealed preference data. Distinct benefit estimates were obtained suggesting the need for discussion concerning the usage of such estimates. A guide for policy-makers is proposed.

**TITLE: Environmental Issues in Production Agriculture** (Moderator: Don E. Ethridge, Texas Tech University)

**Risk and Environmental Consequences of Flexible Cropping Systems.** *Glenn A. Helmers, University of Nebraska-Lincoln*

Flexible cropping in which yield and price projections are used in determining crop choice has been previously shown to yield higher returns over conventional rotations in Nebraska. The risk and fertilizer use implications of this and other crop choices are estimated using a MOTAD programming model.

**Physical and Socioeconomic Factors Affecting Nitrogen Pollution on a Virginia Peanut-Cotton Farm.** *Wei Peng and Darrell Bosch, Virginia Polytechnic Institute and State University*

The effects of cropland slope, distance to surface water, farmers' risk attitudes, and farmers' fertilizer applications on potential N pollution and control costs are evaluated for a Virginia peanut-cotton farm. Lowest cost reductions are achieved by risk-averse farmers located close to surface water who tend to over-apply N.

**Determining Optimal Swine Lagoon Effluent Usage in a Multi-period Forage Production Framework.** *Erick P. Platt, Randall D. Little, Jac J. Varco, and Timothy N. Burcham, Mississippi State University*

Previous studies utilized data from two Mississippi soil types for forage production using commercial fertilizer inputs on a control group and swine lagoon effluent on an exper-

imental group. The data were used to calculate twelve single-period response functions. The results were then combined to produce four multi-period response functions.

**An Analysis of Insurance Programs for Better Timing Nitrogen Applications to Reduce Nitrogen Losses.** *Wen-Yuan Huang, Richard G. Heifner, and Harold Taylor, USDA/ERS*

Timing nitrogen applications to the biological needs of a crop is an effective way to reduce nitrogen loss to the environment, but this strategy may carry a production risk. Insurance can be used to reduce a farmer's cost of bearing this risk, improving the farmer's incentive to adopt the strategy.

**TITLE: Impact of Government Trade Policies on Selected International Markets** (Moderator: Wojciech Florkowski, University of Georgia)

**Mexico-U.S.-Caribbean Nations Melon Trade: A Simulation Analysis of Economic Forces and Government Policies.** *Jose de Jesus Espinoza-Arellano, Mexico; and Stephen W. Fuller and Jaime Malaga, Texas A&M University*

A trade model of the U.S., Mexico, and Caribbean nations melon industries was estimated to identify forces impacting Mexico's declining share in the U.S. melon market. Results indicate the 1994-1995 devaluation of the peso to have the greatest short-run influence while stagnant Mexican melon yields have the greatest long-run negative impact.

**Impact of Mexico's Trade Liberalization on Mexico's and United States' Rice Industries.** *James Hansen, Gail Cramer, Eric Wai-les, and Harjanto Djunaidi, University of Arkansas*

Liberalization of trade and domestic agricultural policy in Mexico's rice sector is analyzed. The reductions of tariffs on rice have a small effect on production, consumption, and trade for Mexico and United States. The U.S.

will have small increase in rice exports to Mexico from further liberalization of rice trade.

**Impacts of Indonesian Fertilizer Incentive Program on the International Rice Price.** *Harjanto Djunaidi, Gail L. Cramer, Eric J. Wailes, and James Hansen, University of Arkansas*

For more than thirty years, the Indonesian Government through BULOG (Indonesian Food Agency) has been trying to increase rice production by subsidizing fertilizer prices. Simulation results indicate that any reductions in the current subsidies will increase the world price significantly.

**The Effects of Clandestine Immigrant Workers on the Technical Efficiency: An Empirical Application on the Greek Agriculture.** *Ioannis Kaltsas, Virginia Polytechnic Institute and State University*

Clandestine immigrant workers can contribute towards more efficient farm performance. This paper examines the relationship between legal status and efficiency and concludes that illegal workers can be even more efficient than local workers. The large waves of immigrants from Albania to Greece made possible the conduct of this study.

**TITLE: Price Risk and Futures Market Relationships** (Moderator: Ashok Mishra, USDA/ERS)

**Does the U.S. Rice Futures Market Pass the Market Efficiency Test?** *Linwood A. Hoffman, USDA/ERS; Bingrong Jiang, University Of Arkansas; Nathan Childs, USDA/ERS; and Eric Wailes and Gail Cramer, University of Arkansas*

This study examines the market efficiency of the U.S. rice futures market. The efficient market hypothesis is tested using the Dickey-Fuller test for data stationarity, standard regression models, Johansen's cointegration procedure, and an additive ARIMA model.

Market efficiency tests provide evidence of an efficient futures market in Arkansas.

**U.S. Rice Market Price Relationships and Cross Hedging of Medium Grain Rice.** *Bingrong Jiang, University of Arkansas; Linwood A. Hoffman and Nathan Childs, USDA/ERS; and Eric Wailes and Gail Cramer, University of Arkansas*

This study analyzes price relationships in the U.S. rice market and cross hedging potential of long grain rice futures for medium grain rice. Market integration tests and different hedging models are used. Preliminary results reveal that cross hedging should be effective in Arkansas but not in California.

**Marketing of Cotton Fiber in the Presence of Yield and Price Risk.** *Jan Wojciechowski, Glenn C.W. Ames, and Steven C. Turner, University of Georgia; and Bill R. Miller, USDA*

An expected-utility model and a chance-constrained-linear-programming model were used to analyze four marketing strategies and seven crop insurance alternatives in cotton marketing in Georgia. The results obtained suggest that the existing marketing tools and insurance alternatives can be used successfully as a substitute for government support.

**An Examination of Regional and Seasonal Differences in Cotton Basis.** *V. Frederick Seamon, Kandice H. Kahl, and Charles E. Curtis, Jr., Clemson University*

The cotton basis is examined graphically and statistically to determine if the basis differs across U.S. production regions and within the crop year as theory predicts. The analysis indicates that the basis differs for some but not all regions and the typical seasonal pattern is not apparent for all regions.

**TITLE: Bioeconomic Modeling and Agricultural Resource Management** (Moderator: Judith I. Stallmann, Texas A&M University)

**A Bioeconomic Model of Farm Management**

**Practices and Environmental Effluents in the Western Lake Erie Basin.** *Diane Hite, Mississippi State University; and Eric Smith and D. Lynn Foster, Ohio State University*

Agricultural production is a major source of pollution in the Western Lake Erie basin. We investigate the impact that various cropping practices have, given soils, climate, and hydrology in the region. We employ a bioeconomic model to examine the relationship between alternate tillage practices and environmental and economic impacts.

**Economic Value and Its Physical Determinants of Riparian Buffers in an Agricultural Watershed.** *Zeyuan Qiu and Tony Prato, University of Missouri-Columbia*

This study evaluates economic value and its physical determinants of riparian buffers in an agricultural watershed using an integrated framework including Arc/Info GIS, SWAT simulation model, CARE budget enterprise, a mathematical programming model and a regression model. Results support national effort to control agricultural water pollution using riparian buffers.

**The Impact of Filter Stripping on Sediment Yield and the Distribution of Farm Income in the Cache Watershed of Illinois.** *Jeffrey Beaulieu, David Bennett, and Steven Kraft, Southern Illinois University; and Raja Sen Gupta, University of Kansas*

The impacts on farm activities and sediment yield are compared for a watershed wide policy initiative and filter stripping via linear programming, AGNPS, and GIS linkage. Both are effective in trapping sediment from stream adjacent land. Watershed wide activity results in a larger income decline and change in crop activities.

**Integrating Ecological, Hydrologic, and Economic Models for Water Evaluation in South Texas.** *Beth Lemberg, James W. Mjelde, J. Richard Conner, and Jerry W. Stuth, Texas A&M University*

Ecological, hydrologic, and economic models are linked to examine effects associated with brush control in south Texas. Expected net revenue from ranching increased after brush control on all rangesites, but the difference is not large enough to justify regional scale brush control without subsidy based on increased water yield.

**TITLE: Issues in Rural Poverty and Public Service Provision** (Moderator: Steven A. Henning, Louisiana State University)

**The Economic and Fiscal Impacts of the Elderly on a Small Rural Region.** *Judith I. Stallmann, Texas A&M University; M. Shields, Pennsylvania State University; and Steven C. Deller, University of Wisconsin-Madison*

Recruiting retirees is a popular economic development strategy for rural communities. Previous research finds positive economic and fiscal impacts on communities, but assumes that the elderly are homogeneous. This research divides the elderly by income and by age, to examine impacts on a community of various subgroups of the elderly.

**Measuring the Impact of Boating-Safety Policies.** *Todd M. Gabe, Ohio State University; and Diane Hite, Mississippi State University*

We present an analysis of the effects of safety policies on pleasure boat accidents. We focus on impacts of enforcement and youth certification policies, using OLS and negative binomial estimators, controlling for select demographic and geographical variables. Estimates are used to simulate the expected outcomes of proposed boating safety policies.

**TANF Caseload Changes: A Preliminary Look at Rural/Urban Differences in Mississippi.** *Lynn L. Reinschmiedt and Lionel J. Beaulieu, Mississippi State University; and Bill Brister, Millsaps College*

Welfare law changes passed in 1996 are

creating major changes in programs targeted to low-income populations. Mirroring national trends AFDC/TANF Mississippi caseloads declined 36.2% from 1992–1997. County caseload were evaluated for rural/urban differences. Metro counties declined 42% while the most rural categories dropped only 34%.

**TITLE: Technology Adoption** (Moderator: Michael E. Wetzstein, University of Georgia)

**Plant Biotechnology Firm Strategies and Industrial Structure.** *Ivan Penov and Nicholas Kalaitzandonakes, University of Missouri*

Biotechnology is expected to have a major impact in the food production, processing, and distribution systems. The objective of this paper is to study the structure of the plant biotechnology industry and how firms in this industry cooperate and compete in the development and implementation of new technologies.

**Evaluating Approaches to Meeting Processor's Kernel Size Uniformity Needs.** *Conrad Lyford, Phil Kenkel, Jed Isbell, and Patricia Rayas-Duarte, Oklahoma State University*

Wheat processors are indicating increasing interest in obtaining more uniform kernel size, according to industry experts and surveys of wheat importers, because improvements can result in better milling yields and efficiency. This research investigates marketing responses through extensive sampling and analysis of truckloads delivered to country elevators.

**Assessing the Southeast's Potential for Biodiesel Production Derived from Animal Fats.** *Daniel G. De La Torre Ugarte, Richard L. White, and Kelly H. Tiller, University of Tennessee*

Biodiesel can be a viable substitute for middle distillate fuels, reducing petroleum import dependence and emissions. This paper assesses the Southeast's potential to produce biodiesel fuel from animal fats. The Southeast could produce 7.7 million gallons of biodiesel

from animal fats, with greatest potential in North Carolina, Missouri, and Alabama.

**Freeze Risk and Adoption of Technology by Orange Producers.** *Arbindra Rimal and Andrew Schmitz, University of Florida*

This study evaluates 147 California orange farmers' perception of frost risk and analyzes their strategy against frost compared to Florida farmers. California farmers shifted to frost prone areas due to real estate consideration but adopted anti-frost technology. Florida farmers diversified to less frost-prone areas by adopting new planting technologies.

**TITLE: Issues in Welfare Analysis and International Policy Studies** (Moderator: George C. Davis, Texas A&M University)

**Welfare Implications of Continued BST Adoption in the United States.** *C. Matthew Rendleman, Southern Illinois University; Abdoul Wane, Senegal; and Stephen L. Ott, USDA/APHIS/VS/CEAH*

Bovine Somatotropin-using dairy farms are compared to those that are not bST using, utilizing USDA survey data gathered since FDA approval of the drug. Adopting bST technology appears to increase rolling herd average 1929 pounds annually. Continued adoption promises to further reduce farm-level costs and increase economic surplus.

**Analysis of Agricultural Production in Albania: Prospects for Policy Improvement.** *Eduard Zaloshnja, Anya McGuirk, and Daniel B. Taylor, Virginia Polytechnic Institute and State University*

The overall objective of this study was to develop a framework to predict policy impacts on Albanian agriculture. A bootstrapping approach was used to estimate elasticities. The estimated elasticities with narrow confidence intervals can be used to predict policy impacts, if Albania returns to the conditions that prevailed before 1997.

**Welfare Analysis of the Chinese Grain Policy Reforms.** *Anelia L. Katchova and Allan Randall, Ohio State University*

This paper analyzes the welfare changes due to the Chinese grain policy reforms resulting in a 47% grain price increase in 1994. Although all consumers became worse off, the rich were more negatively affected than the poor, which led to a reduction in the income inequality in China.

**Distributive Linkages of Agricultural Support: Some Empirical Evidence from Austria.** *Klaus Salhofer, University of Agricultural Sciences at Vienna*

The transfer efficiency of the Austrian bread grains policy is evaluated taking into consideration distributive leakages to upstream and downstream industries. A new computer-intensive sensitivity analysis is presented which randomly chooses the model parameters from a range of potential parameter values and derives a distribution of possible policy outcomes.

**TITLE: Row Crop Management** (Moderator: Randall D. Little, Mississippi State University)

**Optimal Planting Dates for Dual-Purpose Winter Wheat.** *Francis M. Epplin, Ishrat Hossain, and Eugene G. Krenzer, Jr., Oklahoma State University*

Previous research suggests that properly managed fall-winter grazing of wheat will not reduce grain yield. State average data show that grazing is associated with lower grain yields. This study was undertaken to determine the tradeoff between winter wheat fall-winter forage yield and grain yield across planting dates.

**The Economics of Crop Residue Management in U.S. Corn Production.** *William D. McBride, USDA/ERS*

Crop residue management (CRM) is promoted to achieve conservation and environ-

mental goals. Using seven years of corn yield data, unit-cost estimates average 12 to 18 cents less for CRM systems compared to conventional tillage. Results suggest that economic incentives exist for CRM adoption, but vary by region and cropping system.

**Economics of Alternative Harvesting Methods and On-Farm Cleaning for Weed Infested Wheat.** *Jerry W. Dunn, Kansas State University; and Francis M. Epplin, Oklahoma State University*

Cheat, a difficult-to-control pest in winter wheat production, reduces yields and results in dockage. This study determined and compared the returns of alternative wheat harvesting and on-farm cleaning methods to conventional systems. Data from on-farm studies revealed that under certain circumstances alternative harvesting and on-farm cleaning could improve returns.

**Cotton Pest Control Strategies and Related Yield and Pesticide Usage.** *Walter L. Ferguson and Jet Yee, USDA/ERS*

In response to public safety and environmental concerns, use of alternative pest control strategies to reduce pesticide use is becoming increasingly important. This paper evaluates various integrated pest management (IPM) strategies or practices as substitutes or complements to pesticides in maintaining or enhancing yields in cotton production.

**TITLE: Livestock Marketing Issues** (Moderator: Kimberly A. Zeuli, University of Kentucky)

**The Impact of Grid Pricing Premiums and Discounts on Individual Animal Values.** *Heather C. Greer and James N. Trapp, Oklahoma State University*

Southern Plains feedlot data were analyzed to determine wheat carcass characteristics explain variability in animal values under a grid pricing system. Value variability is explained by the following factors: carcass weight—

68%, quality grade—10%, yield grade—14%, and light/heavy carcass discounts—10%.

**Who Will Pay for a Guaranteed Tender Steak?** *Jayson Lusk, John A. Fox, Ted Schroeder, and James Mintert, Kansas State University; and Mohammad Koochmaraie, USDA, U.S. Meat Animal Research Center*

Experimental methods were used to examine consumer willingness to pay for guaranteed levels of steak tenderness. Results indicate that 36% and 51% of consumers were willing to pay an average premium of \$1.23 and \$1.84 per pound for a guaranteed tender steak, depending upon whether steak tenderness levels were revealed.

**The Evolution of the U.S. Livestock and Broiler Industries.** *Christopher G. Davis, Aydin Basarir, and Jeff M. Gillespie, Louisiana State University*

The U.S. livestock and poultry industries have evolved toward vertical coordination at different rates. This paper discusses factors affecting evolution in each industry using a life-cycle evolutionary model. Technology has been a major factor influencing growth, while public policy and consumer demand have played important roles in the evolution.

**Corn Price Effects on Cost of Grain for Feedlot Cattle: Implications for Break-even Budgeting.** *John D. Anderson, University of Kentucky; and James N. Trapp, Oklahoma State University*

Elasticities calculated from an econometric model of cost of gain (COG) for cattle in feedlots indicate that COG is considerable less responsive to corn price changes than break-even budgets assume. This difference in elasticities can lead to substantial errors in COG estimates obtained from budgeting.

**TITLE: Public Perceptions and Empirical Policy Research** (Moderator: Patricia Duffy, Auburn University)

**Anticipated Response to the 1996 Fair Act: Perceptions from Arkansas Producers.** *Julienne Pollard-Pentner and Darren Hudson, Mississippi State University*

Changes in farm policy have afforded agricultural producers flexibility in planting decisions. A survey was conducted in Northeast Arkansas to gather data on their expectations. Analysis shows some changes are expected in crop allocation. Larger producers were more likely to believe they could not continue to farm without government programs.

**Factors Influencing Southwestern Tennessee Farmers' Willingness to Participate in the Boll Weevil Eradication Program.** *James A. Larson, Rebecca L. Collins, Roland K. Roberts, and Burton C. English, University of Tennessee*

A logit model was used to evaluate Tennessee farmers' willingness to participate in the boll weevil eradication program. Producer age, high boll weevil populations, and eradication program education meetings were significant, positive factors in determining participation. Newspaper and magazine information had a significant negative influence on willingness to participate.

**TITLE: Business Operation and Industry Performance** (Moderator: Mike Salassi, Louisiana State University)

**Concentration of the U.S. Broiler Industry.** *Steve Murray, Mississippi State University*

While some consolidation has occurred in the U.S. broiler industry, it is still fragmented when compared to the red meat industry. In 1997 the top four broiler integrators accounted for about 44% of U.S. broiler production. Further consolidation during the next decade is expected.

**The Impact of Safety Regulations (21CFR123) on Three Catfish Processors: A Case Study.** *Juan Herrera, Honduras; and*

C.W. "Bill" Herndon and Lisa House, *Mississippi State University*

This study examines the impacts of HACCP and SSOP regulations on three catfish processors. The processor represent different sizes and levels of implementation of HACCP regulations. Results suggest the largest firm incurred more cost per pound processed, but was able to more effectively employ HACCP principles to improve product quality.

**The Role of Mexican Sugar Production in the North American Sweetener Market.** Gretchen Greene, *Northwest Economic Associates*; and Charles B. Moss and T.H. Spreen, *University of Florida*

This paper addresses the various price policy considerations and options facing the Mexican sugar industry. A graphical representation of these considerations illustrates a producer pricing problem which considers the question, "Does an optimal price exist to maximize the probability of sustaining 'net surplus producer' status as defined by NAFTA?"

**Cooperative Directors: Perspective and Leadership.** John L. Adrian, Jr., *Auburn University*; and Stephen L. Kiser, *FDIC (Dallas)*

Directors' perceptions of their roles, knowledge, and implementation of cooperative principles, business decision making, financial analysis, cooperative law, and division of responsibility with management were analyzed. Directors performed best with decision-making scenarios. Opportunities exist to strengthen backgrounds in cooperative law, role/responsibilities of directors/managers, and financial analysis.

**TITLE: Precision Farming and Specialization** (Moderator: Damona Doye, *Oklahoma State University*)

**Precision Agriculture—an Investment Decision.** Tim A. Park, Michael E. Wetzstein, and Irfan Y. Tareen, *University of Georgia*

An outline of how the economic feasibility of a precision-agricultural technology can be approached is discussed. The stochastic process of returns generated by an investment is evaluated given the associated initial investment costs. This will allow an evaluation of the reduction in yield variation (accuracy) resulting in various alternate technologies.

**Hypothetical Example of Evaluating Economic Benefits and Costs of Precision Farming.** Roland K. Roberts, Burton C. English, and S. B. Mahajanashetti, *University of Tennessee*

Potential benefits of variable rate nitrogen application are illustrated and information needs identified. Lower costs, higher prices, and divergent yield response potentials reduce the spacial variability required for profitable variable rate application. Information needs include sub-field yield response functions, prices, field spacial variability, and the cost of precision farming services.

**The Economic Status of Precision Farming in Arkansas.** Terry Griffin, Caleb Oriade, and Carl Dillon, *University of Arkansas*

This study presents the status of precision farming in Arkansas. Factors influencing adoption of precision farming in Arkansas are highlighted and the returns to precision farming assessed. While there is no evidence to suggest that the technology improves short-run profits, its superior management practices can enhance productivity in the long run.

**Measuring the Impact of Specialization in Financial Performance.** Michael R. Lange-meier, Rodney D. Jones, and W. Hall, *Kansas State University*

The objective of this paper is to examine the impact of specialization on the mean and standard deviation of return on equity for 761 farms in the Kansas Farm Management Associations. Specialization increased risk, but did not have a significant impact on mean financial performance.

**TITLE: International Marketing Issues: A Potpourri of Country Studies** (Moderator: Lynn Reinschmeidt, Mississippi State University)

**Agricultural Contracting System: Incentive VS Fluctuations—A Principal Agent Approach to China's Agriculture.** *Xiao Yang, Virginia Polytechnic and State University; and Yun Liu, Iowa State University*

This paper presents a hierarchical principal-agent model to analyze the incentive mechanism of China's agricultural contract system. Contrary to existing literature, our model shows that above-quota price is positively related to farmers' work efforts, while quota price is not. Explanations for such a divergence have also been provided.

**Japanese Meat Markets—Response to a Changing Macroeconomic Environment.** *Wyatt Thompson, Abner Womack, and Pat Westhoff, FAPRI*

Consequences of alternative macroeconomic forecasts for the Japanese meat sector are examined using a sectoral econometric model. The beef sector is found to be especially sensitive to changes in income, while the poultry sector is sensitive to changes in exchange rates.

**The Economic Feasibility of Barging Louisiana Soybeans into Matamoros, Mexico: A Case Study in Niche Market Development.** *Wayne M. Gauthier, Louisiana State University Agricultural Center; and Kurt Guidry, Louisiana Cooperative Extension Service*

A niche market for Louisiana soybeans in Matamoros is infeasible under present economic relationships. These include the direct and indirect costs of barging and the enhanced competitiveness of the Midwest shipper due to the economics of unit trains and the incentive created by Matamoros pricing practices and negative basis.

**The Effect of the BSE Crisis on the German**

**Beef Market.** *Jens-Peter Loy, Christian-Albrechts-University at Kiel*

The news that humans could be infected by BSE has caused a great public debate since 1966, especially in Germany. As information on consumption data are highly aggregated, we focus on analysis of price impacts caused by BSE, but for consumer prices of beef no significant changes were detected.

**TITLE: Current Issues in Marketing and Price Analysis** (Moderator: Kandice H. Kahl, Clemson University)

**Household Demand for Varied Diet in an Emerging Market Economy.** *Wanki Moon, Wojciech J. Florkowski, Larry R. Beuchat, Ana V.A. Resurreccion, and Manjeet S. Chinnan, University of Georgia; and Pavlina Paraskova and Jordan Jordanov, Canning Research Institute*

Demand for food variety is an important issue in Bulgaria, an economy undergoing fundamental changes in food consumption. This study examined the linkages between household demand for varied diet and socio-economic and demographic characteristics. Household income was important in explaining the variations in the number of food items consumed weekly.

**Is the USDA's Announced World Milled Rice Price Predictable?** *Sung-Chul No, Louisiana State University*

The paper investigates the predictability of the world rice price because the recent price abnormality concerned rice producers and traders. It considers four time-series forecasting models. It suggests that the ARIMA model is a good candidate for tracing the path of the price with the lowest management costs.

**Wholesale Poultry Prices Determinants.** *Joe Parcell and Vern Pierce, University of Missouri*

The focus of this study is on understanding



factors affecting wholesale poultry prices. This information is needed so that poultry industry personnel and poultry producers may better understand how consumer purchasing patterns affect price changes. Seasonal differences between price cuts exist. Own-cut and cross-cut flexibilities were unique to individual cuts.

**TITLE: Economics of Aquacultural Resources** (Moderator: Jeff Gillespie, Louisiana State University)

**Bioeconomic Evaluation of Florida's Spiny Lobster Trap Certificate Program.** *J. Walter Milon and Sherry L. Larkin, University of Florida; and Nelson Ehrhardt, University of Miami*

Bioeconomic modeling—using several surplus production and harvesting cost functions—provided a range of effort that would maximize economic yield in the Florida commercial spiny lobster fishery. Despite a 35% trap reduction since 1992, when a harvest rights program was implemented, effort remains too high and trap certificates appear undervalued.

**Effects of State Institutional Structure on the Regulatory Stringency of Aquaculture: A Two-Limit Truncated Regression Analysis.** *Ferdinand F. Wirth, University of Florida; and E. Jane Luzar, Louisiana State University*

Impacts of state institutional characteristics on the regulatory climate toward aquaculture are evaluated using a two-limit truncated regression model. Empirical results indicate that establishing a formal state aquaculture plan and transferring regulatory enforcement authority to state departments of agriculture will have significant, negative effects on regulatory stringency.

**Limited Entry in Florida's Ornamental Marine Life Industry.** *Sherry L. Larkin, Donna J. Lee, Charles M. Adams, and Robert L. Degner, University of Florida*

The Florida ornamental marine life industry—fish and invertebrates harvested live for the aquarium market—has changed significantly since reporting began in 1990. The proposed limited entry system would reduce harvest externalities, but would not protect specific species (identified by historical landings and trade statistics) that are trending toward extinction.

**Fishing Trip Demands for Small Natural Streams in Eastern Oklahoma: Count Data Model Approach.** *Johannes Negash and Dean F. Schriener, Oklahoma State University*

Several researchers applied count data techniques to overcome problems presented by integer and non-negative trip data. In this study the Poisson, negative binomial, and hurdle models are considered. The negative binomial model fits trip data better than the Poisson, and hurdle models estimate demand for fishing trip.

**TITLE: Studies in Analytical Marketing** (Moderator: Larry D. Sanders, Oklahoma State University)

**Heterogeneous Supply and Demand Response for Georgia Peaches.** *Michael E. Wetzstein, Irfan Y. Tareen, and Timothy A. Park, University of Georgia*

Peach production in central Georgia is highly variable. Depending on demand and supply elasticities for peaches, revenue losses from environmental shocks may be mitigated by price enhancements. Following Carter *et al.*, a framework for environmental shocks is presented demonstrating a shock contributing to producers' income rather than detracting from it.

**Demand Systems and Fresh Vegetables: An Application of the Barten Approach.** *Jaime E. Malaga and Gary W. Williams, Texas A&M University*

The Barten approach is used to select the demand system specification for U.S. and

Mexican fresh vegetable demands. The Rotterdam model was found the most appropriate formulation for U.S. and Mexican demand systems, both in winter and summer. Onion demand was found weakly separable from the other fresh vegetable demands.

**Location Determinants for U.S. Cotton Production.** *Gerald Mumma, Steve Martin, and Darren Hudson, Mississippi State University*

Factor analysis was used to examine underlying relationships for the location of cotton production. Clustering techniques were then used to segment U.S. cotton producing states into respective regions based on the results from the factor analysis. The results were found to compare well with arbitrarily defined segmentation from previous studies.

**The Commercial Viability of Hybrid Catfish.** *Carel Ligeon, Curtis M. Jolly, and Rex Dunham, Auburn University; Roger Yant, Oceanic Institute; and Dayton Lambert, Auburn University*

Comparison of the production of catfish hybrid eggs, fingerlings, and foodsize fish with that of channel catfish showed financial performance superiority of CB hybrid. CB hybrid fry production was less profitable than that of the channel. Financial performance of CB hybrid foodsize fish depended on a better feed conversion ratio.

**TITLE: Alternative and Perennial Crops** (Moderator: Bechtel Amos, Louisiana State University)

**Should Peach Crop Insurance Premium Rates in Georgia and South Carolina Depend on Average Yields?** *Kandice H. Kahl and Stephen E. Miller, Clemson University; and P. James Rathwell, South Carolina State University*

Estimated premium rates for Georgia and South Carolina peach yield guarantee crop insurance decrease as average yield increases. The rate decrease is smaller if average yield is

larger. The Federal Crop Insurance Corporation decreases rates as mean yields increase for some commodities. This research supports expanding the practice to peaches.

**Advances in Enterprise Budget Software: An Oklahoma State University Model.** *Chris Petermann, Damona Doye, Mike Hardin, and Roger Sahs, Oklahoma State University*

New OSU enterprise budget software incorporates extensive historical detail for prices and yield, documents relationships among inputs and expected outputs, includes forage quantity and quality data, provides "comment boxes" with warnings and references, and lists links to on-line databases or references. Budget layers are used with other decision-support tools.

**Economies of Scale and Production Technology Investment Decisions: The Case of Southeastern U.S. Peach Producers.** *T. Jeffrey Price and Michael E. Wetzstein, University of Georgia*

It is hypothesized that irrigation is a dis-economy in scale technology. For relatively small orchards irrigation may be feasible, whereas for larger orchards orchard scattering may supplant irrigation. Results indicate for reduced yield variability, small scale producers should consider irrigation and producers with an average of 21 orchards consider scattering.

**TITLE: Wildlife, Recreational Demand, and Its Implications** (Moderator: Jack C. Isaacs, Northeast Louisiana University)

**On the Use of Count Models for Recreation Demand Analysis.** *Dhazn Gillig, Teofilo Ozuna, Jr., and Wade Griffin, Texas A&M University*

This article shows how to mathematically decompose changes in the conditional mean of the poisson and negative binomial models. The importance of the decomposition is dem-

onstrated by decomposing elasticities and changes in expected consumer surplus. Its application is applied to the Gulf of Mexico recreational red snapper fishery.

**Deriving the Value of Changes in Deer Season Length: an Application to Wildlife Areas in Ohio.** *Peter W. Schuhmann, University of Richmond; and Kurt A. Schwabe, Ohio State University*

Growing deer populations are controlled through changes in hunter bag limits and season length. Recreation demand models are often employed to measure welfare implications of changing bag limits. We employ a nested random utility model examining choice of site and season to derive the willingness to pay for a longer deer season.

**The Economic Impact of Wetlands Creation for Mississippi's Wildlife-Based Recreation Industry.** *Porfirio Fuentes, Diane Hite, Lynn Reinschmeidt, and Stan Spurlock, Mississippi State University*

This paper's objective is to estimate the willingness to pay for wildlife-based recreation in Mississippi using the travel cost model. For this purpose, the 1996 National Survey of Fishing, Hunting, and Wildlife Associated Recreation was used. Results determined that double-log functional form was empirically superior to linear and semi-log forms.

**Crop Choice in the Face of Wildlife-Inflicted Damage: Results from Wisconsin.** *Jonathan Yoder, North Carolina State University*

A multicrop model of acreage response to deer-inflicted damage is developed and tested on Wisconsin panel data. Results suggest producers may reduce acreage of high-damage crops. Implications for wildlife agency abatement and compensation programs are discussed. The model is adaptable to a broad range of multi-output damage problems.

**TITLE: Nonpoint Source Pollution Control: Evaluation and Strategies** (Moderator:

Zeyuan Qiu, University of Missouri-Columbia)

**The Economic Efficiency of a Cost-Sharing Program to Reduce Nonpoint Source Pollution.** *C. S. Kim, Glenn Schaible, and Stan Daberkow, USDA*

This research evaluates the economics of cost-sharing improved irrigation technologies to reduce agricultural nonpoint source pollution. Irrigation and fertilization inefficiencies are modeled within a nonjoint production process to evaluate both private and public benefits of an improved technology adoption and its effect on groundwater nitrate contamination levels.

**Evaluating Best Management Practices and Water Quality Protection.** *Sara Medina and John J. VanSickle, University of Florida*

An econometric model was developed for examining the impacts of Best Management Practices on growers and consumers of fresh potatoes in North Florida and for lowering phosphorus loadings into the watershed on North Florida. Results indicate that growers and consumers will improve their welfare when Best Management Practices are used.

**An Analysis of Taxing Nitrogen Fertilizer and Environmental Implication.** *Walaiporn Intarapapong, University of Nebraska-Lincoln*

Intensive nitrogen fertilizer application on corn may cause leaching of N into groundwater, and pose a health risk. From empirical results, to discourage N use by imposing 1% tax on its price could lead to decline in N and Groundwater Vulnerability Index by 1.3% and 5% respectively.

**Impact of Nitrogen Reductions on Risk and Net Returns.** *Joseph Atwood, Montana State University; and Saleem Shaik and Glenn A. Helmers, University of Nebraska*

A Nebraska cropping system-fertilizer level experiment provided data to analyze the impact

of nitrogen on risk and net returns. A MOTAD model was used to evaluate risk. Tradeoffs among nitrogen, net returns, and risk were estimated over part of the range of nitrogen applications.

**TITLE: Economic Impact Analysis and Modeling** (Moderator: Eduardo Segarra, Texas Tech University)

**Technology Restrictions on Cost Functions: An Application of Genetic Algorithms.** *Patrick T. Berends, University of Wisconsin-Platteville; and Allen M. Featherstone and Terry L. Kastens, Kansas State University*

This study examines genetic algorithm's ability to select parameter estimates that satisfy theory. Feedforward neural networks are used to the genetic algorithm's underlying structure. Results indicate the genetic algorithm can satisfy regularity conditions and provide better in-sample fit. Genetic algorithms may provide useful in cases with concerns about imposing restrictions.

**The Assessment of the Impact of ENSO Events on the Fresh Vegetable Supply.** *Jae-hong Park, Stephen W. Fuller, Jaime E. Malaga, James W. Mjelde, and C. Parr Rosson, Texas A&M University*

The impact of El Niño/Southern Oscillation (ENSO) events is estimated for fresh vegetable/melon crops. Of the 17 supply relationships estimated, eight showed a significant negative ENSO impact, whereas three showed a positive impact. The effects of El Niño and La Niña events on production differs by crop and region.

**Economic Impacts of Porcine Somatotropin on Profitability by Farm Size.** *Leah R. McAlister and C. Mathew Rendleman, Southern Illinois University*

This study compares the effects of pST on the total gross margin of large, medium, and small grow-finisher swine operations. We use a linear program. We find that the use of PST can

increase the total gross margin of small, medium, and large producers by 9%, 7%, and 5% respectively.

**TITLE: Market Targeting and Development** (Moderator: Kurt Guidry, Louisiana Cooperative Extension Service)

**Target Markets for Goat Products.** *Acie Murry, Steve C. Turner, and Mack Nelson, Fort Valley State University*

Segmenting, targeting, and positioning are crucial activities in any strategic marketing program. For goat products, which are often considered niche items, these activities are important to expanding markets through promotion and distribution. This study is an initial step in developing marketing strategies for goat products and goat milk in particular.

**Potential Implications of Production Variability on Agribusiness: The Case of Cotton Ginning in Mississippi.** *Shawn Boyd and Darren Hudson, Mississippi State University*

Changes in farm policy have obvious direct impacts on production agriculture and indirect impacts on agribusiness support industries such as cotton ginning. The purpose the study was to (1) identify the existing structure of the ginning industry in Mississippi and (2) identify the optimal size, number, and location of gins.

**Application of an Alternative Methodological Approach for Developing Budget Generators for Research.** *Stephen P. Slinsky and Kelly H. Tiller, University of Tennessee*

While several budget generators are available to aid in development of field-level operations information and associated costs, many are based on methodologies that limit research value. Several of these limitations are identified, an alternative methodological approach will be introduced, and the versatility of ABS as a research tool is described.

