

**TITLE: An Interactive Approach to Teaching a Compulsory Audience of Farmers and Spouses with Severe Financial Problems and Widely Divergent Age and Education Levels: Case Studies from Florida, New York, Kentucky, and Poland** (Moderator: *J.W. Jordan, Clemson Univ.*).

**Organizer:** *P.J. van Blokland, Univ. of Fla.*

**Participants:** *Patricia Miller, Fla. A&M Univ.; Robert Milligan, Cornell Univ.; and Steve Isaacs, Univ. of Ky.*

This symposium will present the experiences of and the lessons learned from teaching farm financial management to unwilling audiences which are diverse in background, age, education, upbringing and custom, and mostly unaware of the extension service. Many of these audiences are required to attend and pass financial courses by institutions which can materially affect their future. Consequently, the audience can be potentially hostile and uncooperative. These feelings may be exacerbated by the fact that they may have to pay market rates to attend.

## POSTERS PRESENTED

Annual Meeting, SAEA, New Orleans, Louisiana, January, 1995

The Three Winning Posters are as follows:

### First Place

**"Household Expenditures on Whole-fat Milk in the Southern Region"** *Kim Jensen, Univ. of Tenn.*

This study measures the impacts of household socioeconomic characteristics and use of nutrition information on market participation and expenditure levels for whole-fat milk in the South. Sources of nutrition information include information from health professionals, packaging and media sources. Three models (Market participation, Tobit and the Complete Dominance) are examined to determine if household characteristic variables affect market participation differently than these variables affect expenditure levels and whether lack of expenditures solely represents nonparticipation in the market.

### Honorable Mention

**"Management Ability and the Economics of Recirculating Aquaculture Systems"** *Rex H. Caffey and Richard F. Kazmierczak, LSU.*

A bioeconomic, differential equation model of intensive tilapia production was defined and validated using data from the literature, experimental studies, surveys of manufacturers and expert opinion. Results indicate that there are many

near-optimal ways to profitably manage a recirculating system early in the production cycle, with final profit outcomes only slightly affected by early management mistakes. near-optimal profit paths tend to converge late in the production cycle, suggesting that skilled management is critical to attain a successful harvest. The analysis demonstrates that profitable operation under varying management ability requires system components that are designed within well defined limits.

### Honorable Mention

**"Impact of CRP Policy Options on Land Use"** *Deacue Fields and Sandra Monson, Univ. of Mo.*

Policy alternatives for land currently in CRP attempt to target key environmental and economic variables to maximize the benefits of a program. Previously ignored compliance benefits on land not in the program must also be considered. Given responses to these alternatives, soil erosion, crop base retirement, and other environmental variables are compared for program expiration, extension at existing payment rates, and at reduced payment rates for Missouri on farmland in CRP and outside the program. Reducing the payment rate does not produce significant differences in these variables, demonstrating that payment rates alone do not achieve targeting objectives.

**"A GIS Analysis of Policy Alternatives for CRP Acreage"** *Daniel G. De La Torre Ugarte, Duncan M. Chembezi and Daryll E. Ray, Univ. of Tenn.; and Mike R. Dicks, Oklahoma State Univ.*

Between 1995 and 1997 CRP contracts covering more than 24 million acres will expire. As contracts expire, commodity groups, environmental organizations, contract holders, and local interests are asking what will be the future of the CRP. There are several proposals in Congress as what the alternatives are for a "future CRP". As these proposals are considered, it would become apparent that soil and resource characteristics will likely restrict or condition the uses of the CRP expiring acreage. A GIS analysis of these acreage provides a method to assess the regional and land use impacts of the alternatives considered by Congress.

**"Public Perceptions about the Issues of Pesticide Residues in Produce"** *Guijing Wang and Stanley M. Fletcher, Univ. of Georgia; and Sukant Misra, Texas Tech Univ.*

This study investigates consumer pesticide residue concerns using a recent survey data. The survey results show that a majority of consumers consider pesticide residues as a serious problem and agree that additional measure of the residues is required. Current food safety regulations are not effective. Other agencies such as independent laboratory rather than government for monitoring and enforcing the regulations are necessitated. Logit analysis indicates that pesticide residue issues are general public concerns rather than an interest of a specific consumer group.

**"Intercounty Peanut Quota Transfer: Potential Impact on Peanut Production in Georgia"** *Stanley M. Fletcher, Ping Zhang and Dale H. Carley, Georgia Experiment Station.*

The potential impact of intercounty peanut quota transfer on the redistributive effect of peanut production in Georgia was examined. The results indicate that production would move from light production counties to heavy production

counties. Land availability for peanuts did not seem to be a deterrent factor in the movement. There was not statistical difference in rental rates among the different geographical areas except for two areas which are the heaviest and lightest production areas. Potential movement of production between these two areas support the previous results.

**"Cotton Variety Choice Sets for the Southern High Plains of Texas"** *Don E. Ethridge, Nancy D. Wiley and R. T. Ervin, Texas Tech Univ.; and Jane Dever, Plains Cotton Co-operative Assn.*

Cotton variety choice sets were developed for irrigated and dryland production practices with consideration of cotton fiber quality at three locations in the Southern High Plains of Texas: Halfway, Lubbock and Lamesa. Those varieties falling within the choice sets for each location and practice represent the varieties with the highest expected mean net revenue for each level of coefficient of variation. A comparison of results within the Southern High Plains of Texas indicates that if producers are indifferent to the degree of risk, the variety choice for that region is the same variety whether the production practice is irrigated or dryland.

**"Evaluation of Tradeoffs for Alternative Farming Systems"** *Feng Xu and Tony Prato, Univ. of Mo.*

This study evaluates six farming systems in terms of net returns, sediment yield and total soluble nitrogen in an agricultural watershed using a chance constrained programming model. Farming systems being evaluated in the Missouri MSEA Project involve different crop rotations, tillage methods and agricultural chemicals. Results indicate that net returns, sediment yield and total soluble nitrogen vary by farming systems and there are tradeoffs among net returns, sediment reduction and total soluble nitrogen. There are also tradeoffs between targeted reduction in sediment yield and reliability levels associated with the reduction in sediment yield. No single farming system dominates others in all these considerations.

**"The Uruguay Round of Gatt Trade Negotiations: African Agriculture, Future Negotiations and Policy Issues"** *Enefiok P. Ekanem, Tennessee State University.*

With the recent conclusion, in Geneva, of the GATT negotiations, and with a July 1, 1995 effective date for the trade pact, the 117 nations that were party to the deal must look forward to the new round of talks within the context of a new trade organization that will be called the World Trade Organization (WTO).

Important areas of trade including Intellectual Property Rights and the Environment will play roles in future negotiations. Sustainability (food security, preservation of land and the environment, employment and the sustaining of rural communities) as an important environmental and economic objective will take on a significance unparalleled in the history of trade negotiations as the "new world" emerges. This poster suggests guideposts that should be of interest to industrialized and developing countries of the world as they chart their courses in the new negotiations.

**"Farmer Assessment of Returning CRP Grassland in Alabama"** *Bob Goodman, Auburn University.*

As Conservation Reserve Program contracts expire, some cropland will likely return to crop production, assuming that government budget constraints preclude widespread continuation of the program. In this study, farmers and landowners in two major crop production regions of Alabama were surveyed regarding their intentions for returning CRP cropland. Implications of these intentions on farm organization, crop rotation, and erosion rates were explored.

**"Market Incentives to Enhance Red-cockaded Woodpecker Conservation on Private Lands"** *Elizabeth T. Kennedy and Webb M. Smathers, Jr., Clemson University.*

This study focuses on the use of marketable certificates to enhance the endangered red-cockaded woodpecker recovery. These market

incentives implicitly act to protect the long rotation pine ecosystem which is the habitat of RCWs. The benefits of using certificates within a state-wide Habitat Conservation Plan are to mitigate the issue of taking under ESA, to reduce transaction costs, to obtain economies of size associated with completing the necessary biological assays and paperwork, to allow private landowners more flexibility in land management options, to reduce the conflict associated with property rights taking issue of where endangered species occur on private land, and to enhance the recovery efforts for the birds.

**"Externalities from White-tailed Deer in South Carolina: Status and Cooperative Solutions"** *Gary R. Stratton and Webb M. Smathers, Jr., Clemson University.*

The results of a mail survey of 3,018 agricultural producers throughout South Carolina indicated that 36% of the producers reported crop damage greater than 5% of crop production. The total value of deer damage state-wide was estimated at 52.4 million dollars or 7.6% of the total value of South Carolina agricultural crops. However, most respondents were pleased with the presence of deer

on their property because of the aesthetic value of deer, revenue received from hunting leases, and the non-market benefits associated with hunting leases. One solution to crop damage problems lies with the landowner and hunter, who need to act cooperatively as wildlife managers to control deer populations through doe harvest.

**"Effects of Reducing Variability in Reservoir Water Levels on Irrigation Returns and Remaining Stream Flow Variability"** *Glenn A. Helters, Tariq Javed and Maurice Baker, Univ. of Nebraska; and Joseph Atwood, Montana State Univ.*

In multiple-use management of stream impoundments, water release strategies are important to meeting demands from irrigation, reservoir level stability, (for recreation and environment), flood control, and remaining stream flow levels and variability (recreation and environment). In this analysis of an actual situation irrigation returns are maximized as reservoir level variability is reduced observing results of optimum reservoir release management is contrasted with

historical stream flow variability above the reservoir which represents non-reservoir conditions. Pictures, maps, and graph describe the effects of moving the upper and lower constraints on reservoir levels together.

**"Implications of the Coastal Zone Act Reauthorization Amendments of 1990 in Louisiana"** *Steven A. Henning, LSU; and Paul Coreil, Louisiana Cooperative Ext. Service.*

The Coastal Zone Management Act was reauthorized and amended in 1990 to require participating states to develop Coastal Nonpoint Pollution Control Programs (CNPCP) by July 1995. Guidelines for state CNPCPs require a 1) review of current coastal zone boundaries, 2) development of enforceable policies to assure implementation of management measures, and 3) regulation of previously exempt agriculture, forestry, and aquaculture activities. Adoption of these guidelines in Louisiana requires legislative approval, which is unlikely in the current political environment. Voluntary adoption of Best Management Practices, targeting "problem" watersheds, and implementation of "Bad Actor" legislation may be more effective in controlling coastal nonpoint pollution.

**"Sender and Respondent Characteristics in Mail Consumer Surveys"** *A. H. Elnagheeb, W. J. Florkowski, C. L. Huang and E. E. Hubbard. Univ. of Georgia.*

Data from a regional and national surveys were used to identify factors influencing the response rate with regard to the gender of individuals mailing the questionnaire and the time needed for the questionnaire return. No differences were found in national and regional surveys' response rates concerning sender's sex. The negative binomial regression showed race and survey's importance to respondent affected response time in regional sample while age in the national sample. Respondent characteristics may be considered in selecting the cut-off date for consumer surveys.

**"Estimating Rates of Return to Social Science Research in Louisiana"** *Yongli Zhu and Richard F. Kazmierczak, LSU.*

This study investigated the effect of investment in agricultural social science research on the production sector in Louisiana. A modified profit function was specified and estimated using state and federal data covering the years 1949-1990. Results suggest that the internal rate of return to social science investments exceeds 28 percent in Louisiana.

**"Demand for Fibers in U.S. Textile Mills: A System Approach"** *Ping Zhang and Stanley M. Fletcher, Georgia Experiment Station; and Don Ethridge, Texas Tech Univ.*

Using time series data between 1961 and 1992, demand for four fibers (cotton, Cellulosic and noncellulosic fibers, and wool) in textile mills is estimated utilizing a system approach. Compared with a traditional single fiber equation approach, this approach allows for an interrelated relationship in fiber demand. Results indicate that mill demand for all four fibers are price inelastic with cotton being the least inelastic and wool being the most inelastic. Substitution relationships exist between cellulosic and noncellulosic fibers, and between noncellulosic fiber and wool. Changes in textile technology have a positive effect on demand for noncellulosic fiber.

**"BudPro - A Compiled Spreadsheet Application for Costs of Production Information"** *Stan J. Bevers, Jackie Smith, Jose Pena, William Pinchak and Ronald Gill, Texas Agr. Ext. Service.*

This poster summarized two features; first an examination of spreadsheet compilers as an effective method of software development and distribution and second; an illustration of BudPro, a practical cost of production application using the compiled spreadsheet method of development. BudPro is a comprehensive set of software programs designed to generate budgets for determining expected returns and break-even prices from user-supplied information for corn, cotton, cow-calf, sorghum, stocker cattle and wheat. The

programs are flexible, easy to use, and have context-sensitive help. In addition to the poster, a computer was available for using the software.

**"Cotton Variety Selection Model: Software Application"** *Don E. Ethridge, Nancy D. Wiley and R. T. Ervin, Texas Tech Univ.; and Jane Dever, Plains Cotton Co-operative Assn.*

A computer software package has been developed to assist producers, extension specialists, plant breeders and others in the cotton industry in the selection of cotton varieties which offer varying levels of expected net revenue and coefficient of variation. Both yield and fiber attributes of each cotton variety are considered in development of the resulting risk efficient set. A "User's Manual" introduces the software and directs the operator where data can be found for use in the program. The varieties are plotted according to their expected net revenue and coefficient of variation of the expected net revenue.

**"Neural Networks: An Application of Artificial Intelligence to Agricultural Economics"** *Dargan H. Glaze, ERS; and Michael E. Salassi, LSU.*

Neural networks are artificial intelligence techniques developed from efforts to mimic components of the human brain. A neural network is a computing system composed of a number of simple, highly interconnected processing elements which process information by their dynamic response to external stimuli. The network derives a nonlinear solution by learning the patterns in the data without requiring a mathematical description of their relationship. Neural networks are at their best where the relationships between the input and output data are either highly complex or unknown. Artificial intelligence techniques such as neural networks can provide researchers with useful analytical tools to research complex problems in agricultural economics. As an example, a neural network is applied to forecast farm-level rough rice prices.