

# Abstracts of Selected Papers

## **“A Decision Support Model For Contract Broiler Grower Housing Investments.”** Conrado M. Gempe-saw II and Swati Bhargava (University of Delaware)

The costs and returns associated with contract broiler growout operations vary according to regional location and housing design. The purpose of this study is to analyze the profitability of three types of broiler housing designs (negative pressure, positive pressure and environmentally controlled) in three broiler production areas, i.e., Alabama, Delmarva (Delaware, Maryland and Virginia) and Georgia. A recursive Monte Carlo simulation model, CHICKSIM, is used to simulate the financial performance of representative broiler farms. The results show differences in investment returns within each region by housing design and across different regions.

## **“The Profitability of Raising Aquaculture Products in the Delmar Region.”** Ferdinand F. Wirth, Conrado M. Gempe-saw II, and J. Richard Bacon (University of Delaware)

Increased demand has intensified interregional competition in broiler production. Because of higher investment costs and land values, Delmar (Delaware and Maryland) broiler growers have a competitive disadvantage with broiler producers from other regions. The objective of this study is to identify alternative sources of farm income in the Delmar region. A stochastic and dynamic simulation model is constructed to analyze the economics of warm-water finfish (hybrid striped bass and catfish) aquaculture. The simulation results show significant differences in investment returns for commercial aquaculture and broiler production.

## **“An Analysis of Changes in Milk Production by Cow by State, 1950–1987.”** Alfons Weersink (University of Guelph) and Loren W. Tauer (Cornell University)

Changes in state milk production per cow were analyzed as a time series from 1950 through 1987 for the 36 major milk producing states to determine the form and size of the annual increase. Twelve states displayed a combination of geometric and absolute increases. Future milk yields for 1992 and 1997 were projected for each state using parameter estimates. The projected range between the top and bottom states will increase in relative terms over time. States were also grouped according to the correlation matrix of residuals to determine which states react similarly to exogenous shocks to milk yields per cow.

## **The Impact of Economic Growth on Agricultural Trade Patterns: The Case of the Philippines and**

## **Bangladesh.”** D. Hearn, C. Halbrendt, and G. Cole (University of Delaware)

This paper examines the impact of economic growth on the import composition of developing countries. The results show that as per capita income increases (economic growth occurs), there is a shift from imports of foodgrains to those of oilseeds, vegetable oils, and feedgrains. Moreover, the Philippines, which is at a higher development stage, exhibited less price- and income-elastic imports of oils and oilseeds and feedgrains than did Bangladesh.

## **“LOGIT Analysis of Socio-Economic Determinants of Attitudes Toward the Use of Bio-engineered Products in Food Production.”** C. Halbrendt and L. Sterling (University of Delaware)

Results from a mail survey, which asked questions regarding attitudes toward bio-engineering, were analyzed to determine these attitudes. The study shows that those characteristics do have explanatory power in predicting attitudes. Education and gender were the strongest of these characteristics, followed by geographic location, age, and income.

## **“Public Attitudes: Impacts on Agricultural and Ground Water Policy.”** John M. Halstead (University of New Hampshire) and Sandra S. Batie (Virginia Polytechnic Institute and State University)

Recent surveys of both farmers and the general public indicate growing concern over the impacts of agricultural chemicals on ground water quality. These surveys indicate public intolerance to even minute amounts of contaminants in their drinking water, while farmers rank concerns over water quality as highly as preventing soil erosion or profitability in agriculture. To address these concerns, policy makers need to acquire more information on alternative production practices and the health effects of agricultural chemicals. The agricultural sector will also have to respond to these public opinion trends, partly through coalition building with members of the public concerned with protection of drinking water.

## **“Purchase of Development Rights Programs: A Critical Assessment.”** John Mackenzie and Gerald L. Cole (University of Delaware)

This paper demonstrates that the conventional valuation of development easements as the difference between market value and farm-use value is generally erroneous. A brief analysis yields an apparent paradox: when rents to farmland are stable through time, the appreciation of the parcel is wholly vested in the development rights, and the value of the de-

velopment easement is equivalent to the total market value of the parcel. This calls into question the fundamental rationale of PDR programs, and suggests that a more efficient policy may be outright purchase of farmland by the preservation agency and rental of that land to local farmers.

**“Issues in the Evaluation of a Technical Demonstration Project for Subsistence Farmers.” John Mackenzie and Alfred M. Tambe (University of Delaware)**  
This paper discusses some general issues involved in the evaluation of technical demonstration projects, with particular reference to an analysis of a USAID-funded “Small Farmer Diversification Project” in Guatemala. The objective of this analysis was to quantify the benefits accruing to project participants from the project. Important *a priori* differences between project participants and sample non-participants, such as type of land tenure and prior contact with extension personnel, themselves explain most of the *ex post* productivity and income differences between project participants and non-participants. The fundamental task of the analysis was to separate out the impacts of the *a priori* differences from the impacts of the project itself, and to evaluate these latter impacts. Even when such confounding is controlled for, however, the imitation of participants in a demonstration project by non-participants — which the project was designed to promote — logically reduces *ex post* differences in productivity and incomes between groups.

**“The Structure of the International Trade of Wheat: Its Implications for Model Specification and Trade Liberalization Analysis.” Robert D. Weaver (Penn State University)**

Modeling of international trade of bulk grains is properly based on the salient characteristics of observed trade processes. Past approaches have presumed either perfectly competitive markets that coordinate trade among countries, or imperfectly competitive trade among countries. This paper reviews evidence of the active role of grain trading companies and argues that countries represent passive demand and supply points in the trade process. Country policies insulate domestic economies but do not coordinate trade. The implication for trade modeling is that imperfectly competitive gaming based models of trader coordination of trade may

hold promise as bases for empirical analysis. In liberalization analysis such models would suggest that gains from liberalization found in perfectly competitive models are elusive.

**“Measuring the Costs of Groundwater Contamination: An Empirical Application Using Averting Behaviors.” Charles W. Abdalla (Penn State University)**

The economic losses resulting from groundwater contamination were estimated through measurement of the averting behaviors of households served by a public water supply contaminated with Perchloroethylene. Estimated losses during the six-month contamination period ranged from \$137,000 and \$160,000 (1987 dollars). These estimates do not represent the full costs of groundwater contamination since impact upon the business sector, public water supplier, and government agencies as well as costs due to actual human health effects, psychological impacts, and degradation of the groundwater resource itself were not studied. Consequently, the estimates should be viewed as lower bound estimates of the costs of groundwater contamination.

**“The Impact of Product Attributes on Nursery Stock Purchases.” Wayne M. Gineo (University of Connecticut)**

Product attributes that determine nursery stock sales from wholesalers to retail garden centers and landscapers were studied. Conjoint analysis was used to obtain data on buyer preferences of nursery stock that was described by eight attributes. The data was analyzed using ordinary least squares and logit procedures to determine the attributes that affect the probability of a plant being ranked as a preferred one by buyers. It was determined that good to excellent quality stock, offerings with a full line of additional plants, taller plants and cash discounts are desirable attributes. Quality was the dominant attribute affecting buyer preferences. The results indicate that wholesalers should provide high quality, larger sized plants to the marketplace. On the marketing side, firms should offer a wide variety of regionally grown, reasonably priced plants with an option for buyers to pay cash and receive a discount. Packaging attributes together will significantly increase the probability of a plant being preferred by buyers.