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WATER RESOURCES IN THE SOUTHEAST

Randall Chittum

Water resources have become very scarce in the southeast. Most regions rely on river basin systems to support their needs for water. As a result, these systems have become stressed because of the increased demands placed upon them. This paper focuses on the ACF river basin that is used as a primary source for water in the southeast. The demands that are placed on this system have affected water quality and quantity, thus affecting oyster production downstream in Apalachicola Bay. Using data from an ongoing three year study of the basin in Alabama, Georgia and Florida, the effects that specific variables may have upon oyster production were estimated. The results indicate that population of the basin, effort spent to harvest oysters and incidence of hurricanes significantly affect the level of oyster production. The number of shells planted was not found to have a significant impact on production.

ALLOCATION OF THE FISHERIES RESOURCE: IS AQUACULTURE A SOLUTION?

Randall Cleland

Increasing world demand for seafood products, combined with scarcity of fishery resources, may be responsible for higher prices overall in the future. One area of concern is the 200-mile Exclusive Economic Zone in the Pacific Ocean, which is shared by several nations. Overfishing of such common areas, as well as pollution, are the major contributors to fish depletion. The aquaculture industry may be able to provide a substitute product because of new technology. It is likely, though, that more government involvement will be necessary in order to make aquaculture economically feasible. Support programs similar to common agricultural commodities seem to be what the industry needs.

GROWING AND FEEDING CORN SILAGE IN NORTHERN UTAH: IS IT PROFITABLE?Rick Hirschi, *Utah State University*

Profits are a vital issue to dairymen and other farmers. Controlling input costs has a direct link to profits. The research conducted for this paper was designed to evaluate two costs that are borne by dairy farmers in Utah, (growing corn for silage and feeding corn silage to dairy animals).

Through the use of a crop budget generator program (CARE), corn silage was found to yield returns, lower than the market rental value of land, (\$70/acre), and the minimum desired return to management, (\$10/acre).

Corn silage, as a feed, acts as a good carrier for minerals and lighter particles in a total mixed ration. Computed least cost rations showed that corn silage can be profitably fed in limited amounts to replacement heifers over 7 months of age, and to cows whose production level is relatively low. The costs of production were compared to the price sensitivity ranges for the various production groups to determine the flexibility that dairy farmers have in growing and feeding corn silage.

THE ECONOMICS OF LENDER LIABILITY UNDER CERCLA IMPLICATIONS FOR THE AGRICULTURAL CREDIT SECTOR

Douglas Petro

In this age of heightened environmental awareness and responsibility, Congress has enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Lending institutions have been offered limited protection from hazardous waste clean-up liability under CERCLA's secured creditor exemption. Recent court decisions, however, have broadened the scope of lender liability, resulting in lenders taking actions to avoid incurring liability. These court decisions have imposed additional costs on the agricultural credit sector. This paper reviews CERCLA provisions regarding lender liability, examines important court decisions that have raised lender's liability concerns, and provides an economic analysis of the additional costs imposed on the agricultural credit sector.

A MODEL FOR PREDICTING FUTURE FARM FINANCIAL CONDITIONS

Brian Roe

Farm financial records were used to develop a model that predicts if a farm will be considered a worthy candidate of credit in two year's time. The model is developed by comparing a farm's past financial characteristics and credit classification to its classification two years later. This model uses probit regression with a dichotomous credit classification based on Melichar criteria as the dependent variable. The model correctly predicted 69 to 82 percent of farms' credit classification in various tests. These results suggest that future credit classification is a function of current credit classification, asset structure and liquidity.

CONSERVATION COMPLIANCE: WOULD IT BE EFFECTIVE IN REDUCING SOIL EROSION IN ONTARIO

John Young

The economic implications of imposing conservation cross compliance in Ontario are examined in this paper. Results for a representative corn-soybean cash crop farm in Kent county suggest the use of cross compliance restrictions, which force the producer to employ conservation tillage methods in order to receive government subsidies, could substantially reduce the level of soil loss and government payments. Under current price conditions, the Gross revenue Insurance Program (GRIP), which supports prices for commodities like corn and soybeans in Ontario, encourages farmers to produce at a level which causes unnecessary soil degradation and pollution. Compliance provisions change the cost structure of production so farmers have an incentive to change their practices. Although the actual welfare gain of compliance are likely positive, net income for producers are lower if they are forced to adopt conservation measures. Producers face considerable market and policy risk when determining their options regarding compliance provisions.

BOVINE SOMATOTROPIN

Paul Jacobs

Bovine Somatotropin (BST) is a synthetically produced hormone that replicates a naturally occurring hormone in dairy cows that reportedly increases milk production. BST product are currently awaiting approval by the FDA for commercial use. The objective of this study is to explore the effect that the use of BST may have on commercial dairy farm profit and management.

Three types of economic analysis were conducted using a spreadsheet budget model developed by the author. First the model is used to evaluate the effect of BST on per cow profitability. Secondly, a sensitivity analysis is used to determine conditions under which it is profitable to use BST. Finally, the impact of the use of BST on farm and retail milk prices is estimated.

Based on the analysis mentioned above, using BST on an average Indiana dairy farms would increase annual profit of early adopters by \$62.72 per cow per year or \$4,139.52 per farm. By using BST a dairy producer can reduce total production costs \$.71 per cwt. This decrease in production costs may be reflected by a \$.71/cwt. lower price paid for milk at the farm gate, and a \$.06 per gallon decrease in retail prices.

ANIMAL WASTES

Brandon Hansen, Washington State

Increased environmental awareness, growing population in Washington, and increasing cow numbers per farm has resulted in the Washington State Department of Ecology (DOE) wanting a controlled system for the storage and discharging of animal wastes. The DOE is developing the statewide dairy discharge permit, which will be implemented in the fall of 1992. Some dairymen will have to alter their waste management systems. This will require substantial capital investments, and it could affect the economic viability of the individual dairy operator as well as the Washington dairy industry.

An economic analysis was conducted of a 200-cow-dairy waste management system which includes flush system, waste storage lagoon, separator, and a waste discharging system. The annual cost of this system is \$19,449. This would be an expense of \$.48 per hundredweight of milk produced by a 200-cow dairy averaging 20,000 pounds of milk annually.

The waste system analyzed in this report will not be feasible for all dairymen. Some dairymen will find it more efficient to change to other waste management systems that will qualify under the permit. Before the permit program is implemented, an economic analysis needs to be conducted on several waste systems that will meet the requirements of the permit.

ETHYLENE BISDITHIOCARBAMATE
Nathalie LeRoc'h

A ban on the use of EDBC (Ethylene Bisdithiocarbamate) fungicides was, in December, strongly expected from the Environmental Protection Agency. If the EPA does so, this ban will probably be extended to Canada. It is then important to assess the economic impact of this ban on Quebec Agriculture and compare the resulting loss, to the losses expected in the U.S. The study was limited to lettuce production, and used the Benefit/Cost method approach. As a result, Quebec producers would suffer a decrease in total Net Farm income of (Can \$1.538 millions), while U.S. studies show a decrease in total net farm income of (Can \$103.5 millions). Per hectare of production, the loss is much more important in Quebec (Can \$1,622.96/ha) than in U.S. (Can \$1,587.5/ha). In conclusion, the imposition of the ban would result in an uncertain future for lettuce producers. This makes the deliberation of the ED, BC ETU/TASK FORCE and EPA very crucial.