PROJECT NO. RS-3

COMPREHENSIVE RESEARCH ON RICE
ANNUAL REPORT

January 1, 1981 - December 31, 1981

PROJECT TITLE: An Economic Decision Model of Rice Production, Emphasizing Energy and Residue Management.

PROJECT LEADER AND PRINCIPAL UC INVESTIGATOR: Kent D. Olson, Economist, Cooperative Extension, Department of Agricultural Economics.

LEVEL OF 1981 FUNDING: $6,700.

OBJECTIVES:

1. Develop a set of worksheets which individual rice producers can use directly to:
   a. Identify energy intensive inputs and operations.
   b. Identify cultural and management alternatives to counter the effects of changing economic conditions, specifically energy price inflation.
   c. Analyze the feasibility of alternative residue management practices under changing economic conditions.
   d. Analyze their options if a severe restriction on straw burning is imposed.
2. Use the worksheets for typical farms so potential changes can be estimated.
3. Estimate the breakeven prices farmers must receive for alternative residue management practices and changes in cultural management practices.

SUMMARY OF 1981 RESEARCH (MAJOR ACCOMPLISHMENTS) BY OBJECTIVE:

1. These worksheets have been developed to analyze alternatives to burning. These are in draft form; they need some "fine tuning" before they are released.
2. The on-farm effects of adapting alternative straw disposal methods are estimated for example farms. Based on the assumptions used, net farm income may be reduced by $52 to $92 per acre of rice.
3. Based on a rough rice yield of 60 cwt per acre, and on the previous estimates, farmers need the rough rice price to rise by $0.87 to $1.54 per cwt so they will breakeven after an alternative to burning is adopted.

PUBLICATIONS OR REPORTS:

1. "Alternatives to Rice Straw Burning: An Economic Analysis at the Farm Level", presently in draft form.
2. "Analyzing the Alternatives to Rice Straw Burning: A Set of Worksheets for On-Farm Analysis", presently in draft form.

CONCISE GENERAL SUMMARY OF CURRENT YEAR'S RESULTS:

The effects on farm income of utilizing alternatives to straw burning are estimated. Incorporation and baling at two combine cutter bar heights are the alternatives analyzed. The effect on farm income is calculated by estimating the reduced costs by not burning, the additional costs due to decreased machinery efficiencies and additional machinery operations, and the reduced receipts due to the yield reduction caused by a greater incidence of stem rot. Based on the assumptions used in the report, farm income may be reduced by $52 to $92 per acre of rice. For a farm with 250 acres of rice, the estimated decrease in net income for the entire farm ranges from $13,040 to $23,030. With a rice yield of 60 cwt per acre, these estimates show that the rough rice price needs to rise $0.87 to $1.54 per cwt for the farmer to have the same net income before he/she adopted an alternative to burning.