

APPENDIX D

RESEARCH ON SELECTED FOOD CROPS

by

ROBERT I. JACKSON

A. Purposes and Targets

One of the purposes of the AID-financed loan for agricultural research in Korea was to assist in varietal improvement of the five major food crops: rice, barley, wheat, soybeans and white potatoes. In addition to research on varietal improvement, the development of improved cropping systems was part of the project as well.

Specific targets were established for each of the crops, both for yield increases on the experiment station and on farmers' fields for the crops covered in the project with the exception of potatoes. Improved varieties of potatoes resistant to viruses, insect control measures, and methods of processing and marketing were stated as project targets. The targets for rice are presented in Appendix C.

Aims included the development of new varieties and strains of soybeans capable of increasing present (1973) yields from 1.98 MT/ha to a target level of 3.2 MT/ha, and increasing farmers' yields from 0.8 to 1.3 MT/ha by the end of 1983. These improved soybeans were to be more responsive to higher plant populations per unit area of land, resistant to lodging and at the same time responsive to higher rates of fertilizer, higher in protein and oil content, shorter in maturity, and resistant to the economically important pests. Research on cultural practices was also an item for consideration.

New strains of barley were to be selected and developed so that the experiment station yield of 2.79 MT/ha was to be increased to 3.6 MT/ha and farmers' yields increased from 2.04 MT/ha to 3.0 MT/ha within a ten-year period. A variety 10 to 15 days shorter in maturity, more resistant to cold temperatures, more responsive to higher rates of fertilizer without lodging, resistant to common barley insects and diseases, and tolerant to waterlogged paddy soils was to be developed.

Similar characteristics for wheat were stated in the project paper. Experiment station yields were to be increased from 4.3 MT/ha to 5.2 MT/ha, and on-farm yields from 2.24 to 4.0 MT/ha. The new varieties were to incorporate the following characteristics: growing period reduced from 20 to 15 days, improved milling qualities, higher protein, better baking quality, resistance to diseases and insects and tolerance to cold and more poorly drained paddy soils.

There were also five main targets for cropping systems, but as the team saw little evidence of any research results from this component of the project, no other comments will be made.

B. Rice

Research on rice has undoubtedly made the greatest contribution to the Korean agricultural economy through the development and release