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UNIVERSITY OF MISSOURI

COLLEGE OF AGRICULTURE

DEPARTMENT OF AGRONOMY

ANNUAL TECHNICAL REPORT OF 211(d) PROJECT

JUNE 1, 1968 to MAY 31, 1969

TECHNICAL REPORT

211(d) International Program

University of Missouri

Breeding Agronomic Crops of India

SUMMARY

Dr. J. M. Poehlman, Professor of Agronomy (Plant Breeding) was designated the 211(d) faculty member at the University of Missouri, effective July 1, 1968. John M. Yohe, (B.S. Agr., M.S. Nutrition) was appointed Graduate Assistant in Agronomy, effective February 1, 1969.

Professor Poehlman traveled to India (November 20, 1968 to January 26, 1969) to make institutional arrangements and select lines of research to pursue under this grant. Cooperative research has subsequently been started on the breeding of wheat and pulses with the Orissa University of Agriculture and Technology, Bhubaneswar, Orissa, India. Mr. Yohe started course work toward the Ph.D. degree in February, and will conduct thesis research on some phase of pulse breeding.

PROGRESS REPORT

1. Personnel

The 211(d) activities were initiated by designation of Dr. J. M. Poehlman, Professor of Agronomy (Plant Breeding), as the 211(d) professor. Recruitment of graduate students was started and one student, Mr. John M. Yohe, was appointed a graduate assistant from 211(d) grant funds on February 1, 1969. Mr. Yohe, who is interested in a career in international agriculture, has a strong background in biochemistry and nutrition, and is planning a thesis research problem related to breeding for improved nutritional qualities in the pulses.

2. Educational Activities

The 211(d) professor assisted with the teaching of Agronomy 425, "Advanced Crop Breeding," in the fall semester until his departure for India in November, and taught Agronomy 325, "Field Crops Breeding," in the winter semester. He participated in the following seminars during the winter semester:

Agronomy Department, University of Missouri, "Agricultural Development in India."

Plant Breeding Section Seminar, University of Missouri, "Status of Plant Breeding in India and Plans for the 211(d) Program."

American Society of Agronomy Science Lecture, Dana College, Blair, Nebraska, "The World Food Problem with Focus on India."

International Agricultural Development Seminar, Cornell University, "Agricultural Development and the Food Problem in India."

Plant Breeding Department Seminar, Cornell University, "Plant Breeding in India."

American Society of Agronomy Lecture, Centerville Community College, Centerville, Iowa, Arts and Science Week Panel Discussion, "Shall Man Prevail?"

Plans are being made for an undergraduate seminar on International Agriculture in the 1969-70 fall semester.

Mr. Yohe presented a seminar to the Plant Breeding Section, Department of Agronomy, University of Missouri on "An Introduction to the Pulse Crops."

3. Institutional Arrangements for Overseas Research

Arrangements were made for cooperative research with the Orissa University of Agriculture and Technology, Bhubaneswar, Orissa, India. No breeding research on wheat or pulses has been done previously in Orissa and we will assist the Department of Agricultural Botany, OUAT, (Dr. S. K. Sinha, Chairman) in development of wheat and pulse breeding projects. Graduate student research projects will be identified with and contribute to the breeding of these crops. Tentative outlines of cooperative research problems with these crops were developed.

A memo of understanding between OUAT and UMC was developed and signed by the Vice-Chancellor of OUAT and the 211(d) Grant Project Director. Procedural arrangements were worked out with the Registrar, OUAT, for enrollment of 211(d) graduate students in OUAT while they are in India conducting thesis research.

4. Research on UMC Campus

a. Wheat. Crosses were made in India (January and February, '69) between adapted Indian spring-type varieties and 1-gene, 2-gene and 3-gene dwarf, spring-type varieties of Mexican origin. The F₁'s from these crosses are being grown at Columbia, Missouri, (April through June, '69). The F₂ generation will be grown and studied at Bhubaneswar during the winter 1969-70. Crosses involving winter-type varieties adapted to Missouri and spring-type Mexican varieties are being made to use in the Missouri breeding program.

b. Pulses. Representative varieties of several species of pulses (chickpea, greengram, black gram, and lentils) are being grown at Columbia during the summer of 1969. Varieties grown in Orissa will be analyzed for protein and amino acids as a preliminary screening test.

5. Other Activities of 211(d) Professor

a. University of Missouri Committees: Dr. Poehlman has served as Chairman of the UMC campus committee on "International Studies." This committee has been instrumental in the establishment during the current year of a "Center for International Studies" on the UMC campus and serves as an advisory committee to the newly appointed Director. He also serves as the faculty representative from the Columbia campus on the executive committee of the University of Missouri (four campuses) Office of International Studies. As Chairman of a subcommittee on long-range planning, he assisted in the development of a "Long-Range Plan for International Studies on the UMC Campus."

b. Textbook Development. While in India (November, 1968, to January 1969) Dr. Poehlman completed proof-reading of a textbook Breeding Asian Field Crops in which he is co-author with Dr. Dhirendranath Borthakur, Rice Specialist, Assam, and former student participant in the UMC-AID contract program. The textbook, now in print, was written by Poehlman and Borthakur during a tour of Dr. Poehlman as Research-Adviser at OUAT and has been published by Oxford and IBH Publishing Company, Calcutta, with the assistance of the Joint Indian-American Standard Works Programme.