

**PROJECT EVALUATION SUMMARY (PES) - PART I**

Report Symbol U-44

<b>1. PROJECT TITLE</b> Control of Barley Diseases- Montana State University (MSU)			<b>2. PROJECT NUMBER</b> 931-1318	<b>3. MISSION/AID/W OFFICE</b> DS/AGR/AP
<b>4. EVALUATION NUMBER</b> (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)				
<input type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION				
<b>5. KEY PROJECT IMPLEMENTATION DATES</b> A. First PRO-AG or Equivalent FY <u>78</u> B. Final Obligation Expected FY <u>87</u> C. Final Input Delivery FY <u>88</u>	<b>6. ESTIMATED PROJECT FUNDING</b> A. Total \$ <u>2,600,000</u> B. U.S. \$ <u>2,600,000</u>	<b>7. PERIOD COVERED BY EVALUATION</b> From (month/yr.) <u>August 1979</u> To (month/yr.) <u>May 1981</u> Date of Evaluation Review <u>April 20-30, 1981</u>		

**8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR**

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Prepare documentation required for an extension from September 1981 through January 1982.	DS/AGR/AP: R.I. Jackson	July 15, 1981
2. Prepare documentation and approvals for a three-year extension, February 1981 through January 1985	DS/AGR/AP R.I. Jackson	September 15, 1981
3. Linkage with the new Crop Production and Utilization-Technical Assistance Project, scheduled to become operational in FY 81, should be insured.	DS/AGR/AP R.I. Jackson	Continuing
4. USAIDs should continue to be kept informed of nursery sites and new LDC cooperators in their countries.	MSU	Continuing
5. Trained participants should be contacted on an annual basis after returning to their home countries.	MSU	Continuing

BEST AVAILABLE COPY

<b>9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS</b> <input checked="" type="checkbox"/> Project Paper <input type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Financial Plan <input checked="" type="checkbox"/> PIO/T <input type="checkbox"/> Logical Framework <input type="checkbox"/> PIO/C <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Project Agreement <input type="checkbox"/> PIO/P	<b>10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT</b> A. <input checked="" type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project
---	---

<b>11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)</b> DS/AGR/AP, R.I. Jackson <i>DWB for</i> Date: <u>5/26/81</u> DS/PO: ASilver DS/AGR/AP, J.M. Yohe <i>DWB for</i> Date: <u>5/26/81</u> DS/PO: MReckley DS/AGR, M. Mozynski Date: _____ DS/AGR, J. Walker <i>J.P. Walker</i> Date: <u>27 May 81</u> DS/AGR, D. Fiester Date: _____	<b>12. Mission/AID/W Office Director Approval</b> Signature _____ Typed Name: <u>Acting-AA/DS,</u> <u>Bernard Chapnick</u> Date _____
---	---

PES

Montana State University  
Control of Barley Diseases  
931-1318.11

### 13. SUMMARY:

This project has been evaluated twice at the contractor's site of operation, namely at Montana State University (MSU). In addition, it was determined that an evaluation in the cooperating LDCs was needed. Three countries were selected: Morocco, Tunisia and Egypt. The timing of the evaluation was very opportune since the barley crop in the three countries was at a stage of maturity when the expression of diseases was optimum. Just as important, MSU co-sponsored the Workshop on Barley Diseases and Breeding Methodology, held in Rabat, Morocco, April 20-23, 1981. This Workshop was included in the scope of work as an activity of MSU's under the contract.

The Reviewing Officer recommended that the project should be continued to achieve the goal of providing disease resistant barley to the farmers in LDCs. One of the major problems in the LDCs is the lack of trained agriculturalists and the lack of support for those who are employed in agriculture. MSU is well qualified to train graduate students in barley diseases and has made considerable progress in training LDC students.

### 14. EVALUATION METHODOLOGY:

The Reviewing Officer was Dr. J.M. Poehlman, Professor Emeritus, University of Missouri. He has had many years of experience as a barley breeder in the U.S. and spent considerable time overseas working in LDCs. He was accompanied by the Project's Principal Investigator from MSU, Dr. Gene Sharp and the A.I.D. Project Manager, Dr. R.I. Jackson.

The Workshop held in Rabat provided the Reviewing Officer with an excellent opportunity to learn of the problems resulting from barley diseases and to meet with several of the LDC cooperators working with MSU. Some of these cooperators had been trained at MSU.

The three members observed barley in farmers' fields in Morocco, Tunisia and Egypt as well as the Recurrent Selection Populations (RSPs) or disease resistant nurseries developed and sent out by MSU. Their Evaluation Report is attached.

### 15. EXTERNAL FACTORS:

The project has established linkages to other barley programs which have greatly improved its effectiveness to control barley diseases in the LDC. These linkages include cooperative efforts between MSU, CIMMYT and ICARDA as well as to national programs. Continuation of the training programs, both graduate and non-degree, have helped to fill the need for expanded training.

Montana State University  
Control of Barley Diseases  
931-1318.11

16. INPUTS:

Participation as well as interest by LDCs and International Agriculture Centers have been quite good. In addition, CIMMYT and ICARDA have made significant inputs, as noted above.

17. OUTPUTS:

LDCs have been supplied the RSPs by MSU; each RSP has resistance to a specific disease or several diseases. Selections are being made from these disease specific RSPs by the barley breeders in the LDCs for further pyramiding of genes for disease resistance. At the same time, selections are being made to use in the barley breeding programs. It takes several generations of crossing and selection to obtain barleys which are agronomically acceptable and also resistant to the major diseases. The outputs are on target and need no revisions at this time.

The training program at MSU is carried out in a very satisfactory manner. There are always more applications for training than the project can fund. The Workshop is an example of one form of training.

18. PURPOSE:

To increase yields by developing barleys which are resistant to the major diseases of the LDCs. (See the Reviewing Officer's Comments - Yield Loss from Disease.)

19. GOAL-OBJECTIVES OF THE PROGRAM:

a. Different sources of resistance to the major diseases of barley and linkage relationships will be determined.

b. Barley populations with broad based major gene resistance and minor gene resistance to specific diseases will be developed. This will include both 2 row and 6 row barley varieties.

c. Resistance to different specific diseases will be bred into barley stocks.

d. Assistance will be given in establishment of serodiagnosis programs for detection of barley stripe mosaic virus (BSMV) in varley stocks at the International Agriculture Centers for barley improvement - CIMMYT and ICARDA.

e. Efforts will be made to develop a simple toxin screening procedure for use with the scale disease caused by Rynchosporium secalis and with other barley diseases.

MSU has made definite progress toward achieving the goal of the project and more specifically, has made a positive contribution toward fulfilling the steps noted immediately above.

Montana State University  
Control of Barley Diseases  
931-1318.11

#### 20. BENEFICIARIES:

The immediate beneficiaries of this project are the barley research workers in the LDCs. It has been noted above that resistant barley breeding material has been supplied by MSU to these LDC research workers. The eventual beneficiaries will be the farmers in the LDCs when improved resistant varieties are available for their use.

#### 21. UNPLANNED EFFECTS:

None at this time.

#### 22. LESSONS LEARNED:

The success achieved to date shows clearly how projects such as this one benefit all parties involved, in addition to achieving the purpose and objective for which it was explicitly designed. CIMMYT and ICARDA benefit as a result of MSU's testing their barley material for disease resistance. They also benefit from the information compiled from MSU's nurseries in the LDCs.

MSU is to be complimented on the way it handles its graduate students and trainees under the program and the way contact is maintained between the students and faculty after they complete their education and return home. Students are considered full participants in the research undertaken. This not only gives them invaluable experience in how to do applied research but also makes them excellent cooperators when they return to their own countries. After they return, contact is maintained with most of them through the yearly visits of the MSU staff members. The lasting relationships that result do much to improve the level and quality of barley research throughout the world.

Genetic stock, experimental lines, disease resistant populations (RSPs) and research information are exchanged with other organizations engaged in international activities to insure rapid progress in the improvement of barley.

#### 23. SPECIAL COMMENTS AND REMARKS:

As noted in the previous sections, the project has continued to progress well, with performance more than satisfactory.

#### Attachment:

Team Evaluation Report