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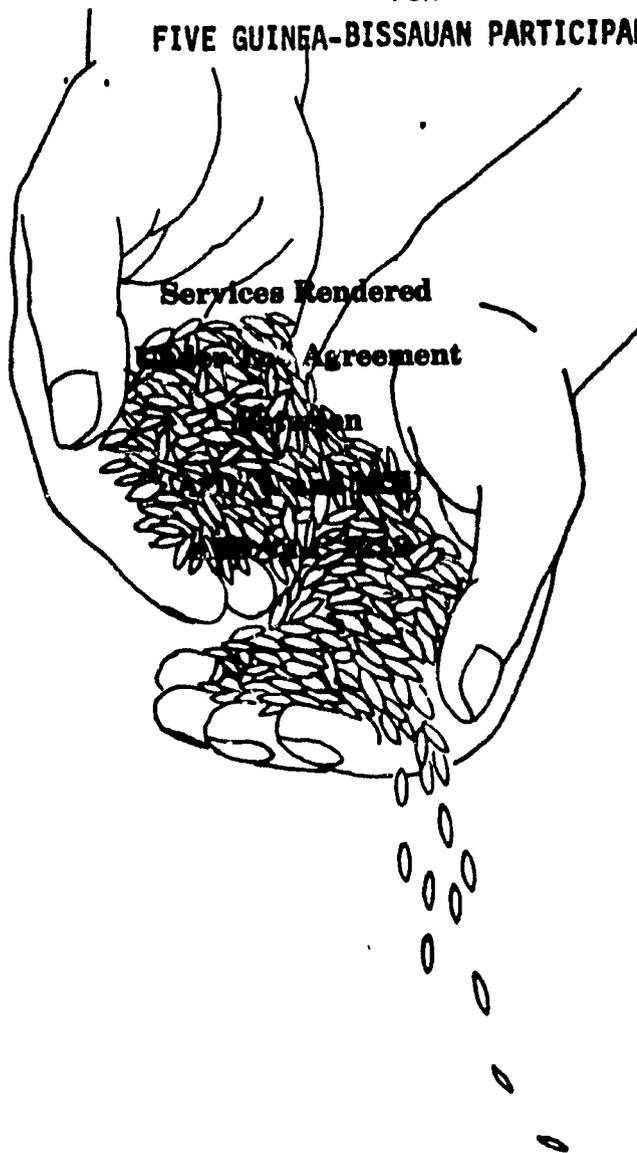
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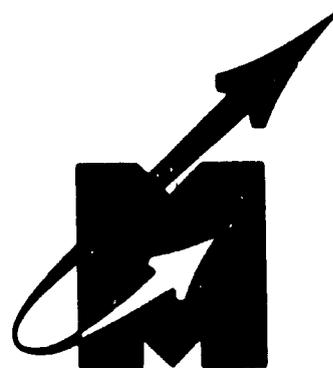
AID/W
USAID/Guinea Bissau
Govt. OF Guinea Gissau

Al Hauke

INTENSIVE COURSE
IN
SEED TESTING AND QUALITY CONTROL
FOR
FIVE GUINEA-BISSAUN PARTICIPANTS



SEED TECHNOLOGY LABORATORY
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI



**Report to the
AID/W, USAID/GUINFA BISSAU
and GOGB**

**on the
Intensive Course in Seed Testing
and Quality Control
For
Five Guinea-Bissauan Participants**

June 16 - July 16, 1978

**Services Rendered
Under the Contract
between
AID/W and MSU
AID/TA-C-1219**

**Seed Technology Laboratory
Mississippi State University
Mississippi State, Mississippi**

July, 1978

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REPORT SUMMARY

TITLE: Intensive Course in Seed Testing and Quality Control for Five Guinea Bissauan Participants

CONTRACT: AID/TA-C-1219 with Mississippi State University

CONSULTANTS: Staff, Seed Technology Laboratory, Mississippi State University, Mississippi State, Mississippi

PERIOD OF REPORT: June 16 - July 15, 1978

SUMMARY

The USAID/Guinea-Bissau, specifically, the CDO, Jim Maher requested that a four (4) week training course in seed testing and quality control be conducted for five (5) participants from Guinea Bissau. The AID/MSU Contract project manager approved this request and the staff of the Seed Technology Laboratory presented this training program (Appendix B gives complete course outline).

The five participants (Appendix A gives names and addresses) arrived in Washington on June 13 and proceeded to Mississippi State on June 16. The official training program began on June 19. The initial three (3) weeks of training was presented as classroom lectures and laboratory exercises. The last week consisted of a field trip to observe rice, corn, soybean and sorghum production, processing and storage areas in south Louisiana and Texas.

No serious problems were encountered by either the instructors or the participants. It should be pointed out that the participants were very adaptable to their initial exposure to the United States, and they were quite diligent and eager to learn. The course material was presented in English; however, effective translation was performed by Mr. Mike Maxey, USAID contractor in Guinea Bissau.

RECOMMENDATIONS

1. The five participants should receive additional in-depth training in seed testing and quality control. This could be accomplished by sending them to a special intensive training course in Brazil.
2. The GOGB should continue to provide encouragement and support for the rapid completion of the seed testing laboratory and storage facilities.
3. The GOGB should consider the next phase of their developing seed program to be that of providing modest facilities for cleaning and upgrading seed.

ACKNOWLEDGEMENTS

The administrative efforts of Mr. James Maher, CDO Guinea Bissau, in getting the five participants to Mississippi State are appreciated. In addition, Mr. Mike Maxey Contractor to USAID/Guinea Bissau, is commended for the excellent manner in which he handled the group and took care of their every personal need. Mr. Maxey also performed very satisfactorily as the primary interpreter for the group.

It should be pointed out that Mr. Jose Franca and Mr. Joao Zanini, graduate students at MSU, served as effective translators during portions of the course. Their services are appreciated.

The staff of the Seed Technology Laboratory wishes to thank each of the participants for their attentiveness and cooperation during their brief stay at MSU. It was a pleasure to work with these technicians.

**Report to
AID/W, USAID/Guinea Bissau
and the Government of
Guinea Bissau on the
Intensive Course in Seed Testing and
Quality Control for
Five Guinea-Bissavan Participants**

I. Background

A Project Paper was developed for Guinea Bissau in 1976, and Seed Improvement was one of the components identified for the Agricultural Development Project. Dr. C.H. Andrews traveled to Guinea Bissau to assist the CDO in making revisions and developing a feasible plan of action to expedite project implementation.

A general time-frame schedule of activities was proposed which included the selection and training of technicians as one initial phase of the overall seed project. The five technicians were selected and sent to Mississippi State for a brief intensive course in seed testing and quality control.

II. TERMS OF REFERENCE

The CDO, Guinea Bissau, requested that the MSU Contract team, under the auspices of the agreement between AID/W and MSU, AID/Ta-C-1219, present a four (4) week training course to five selected technicians from Guinea Bissau. The AID/TAB project officer approved this request, and the participants were sent to the Seed Technology Laboratory for training.

III. CURRENT SITUATION AND BASES FOR RECOMMENDATIONS

The renovation and construction of the seed laboratory has begun in Guinea Bissau, and the equipment has been ordered. In addition the seed

storage facilities will be initiated in the near future. With these initial efforts in the seed program, it is necessary to provide a nucleus of trained personnel to operate the facilities. Therefore, these five technicians were selected for training in seed technology so that they can return to Bissau and begin work in the seed improvement program.

It is anticipated that the GOGB will continue to assume a critical role in the distribution of seed throughout the country and that the central collection point for seed will be in Bissau. The technicians which have been identified and trained at MSU in the initial phase of this program will play a vital role in the continued success of the development project.

IV. IMPLEMENTATION

Five technicians were identified and selected for training in seed testing and quality control at the Seed Technology Laboratory at Mississippi State University. It is anticipated that these technicians will be instrumental in establishing seed testing programs in Guinea Bissau and in promoting the use of improved seed for use in Bissauan agriculture.

These participants traveled to the United States and arrived at Mississippi State University on June 16, 1978. Three weeks of intensive classroom and laboratory work was begun on June 19 and terminated on July 7. One final week consisted of a field trip tour through the rice, corn, soybean and sorghum production and processing facilities in southern Louisiana and Texas.

During the three week intensive classroom work, instruction was presented in the general areas of seed testing including purity and germination practical work. Topics on organization and function of a

seed testing laboratory were discussed in detail. In addition seed drying and storage techniques and systems were discussed. Also various seed quality tests were included for practical exercises.

Much of the practical work was devoted to corn, rice, sorghum, peanuts and soybeans, since these are the crops of prime importance in Guinea Bissau.

According to discussions with the participants, it appeared that they were able to grasp the basic essential concepts and ideas presented. The participants were quite cooperative and attentive, and their congenial attitude was greatly appreciated.

The one week field trip concluded the training program. It was felt that such a trip would enable the participants to see in practice the theory and concepts presented and discussed in the classroom. From brief discussions it is felt that this portion of the course was quite effective and that the participants gained valuable experience by seeing various segments of the U.S. seed industry.

RECOMMENDATIONS

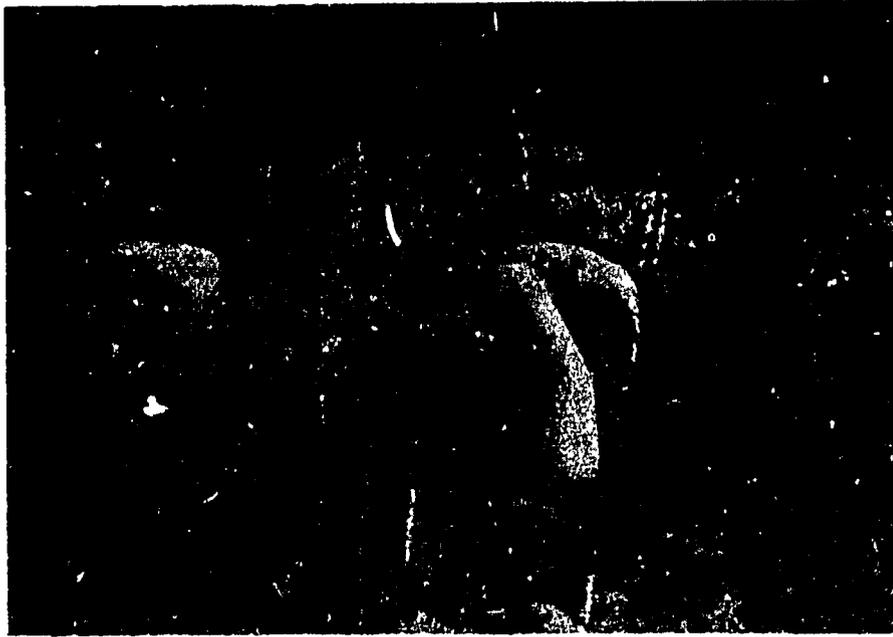
The seed improvement program is just beginning in Guinea Bissau. Continuity and development will depend upon the importance and support which the GQGB provides. At present this appears to be of high priority and to assist in more rapid and effective development, Guinea Bissau should consider the following recommendations:

1. Continue to provide training for the five technicians. This could be done by extended training in Brazil.
2. Provide continued support for rapid completion of the seed testing laboratory and seed storage facilities.

3. The GOGB should begin to consider the next logical phase of the seed improvement program which would be the development of modest seed processing facilities.



Participants learn techniques in seed germination and quality control.



Participants learn techniques in field emergence and evaluation test.

APPENDIX A
LIST OF PARTICIPANTS

ALFA BANGURA

ALBERTO CABRAL

MALAM SANE

ALEXANDRE SANHA

ALFREDO QUEMBODA

Participant Address:

Commissariado da Agricultura & Pecuaria
Caxia Postal 71
Republic-Guinea Bissau
Africa (via Lisbon, Portugal)

Mr. Mike Maxey, personal service contractor with USAID in Guinea Bissau, served as the interpreter for this special seed group.

APPENDIX B
PROGRAM OUTLINE

Intensive Course In Seed Testing
and
Quality Control
for
Five Guinea-Bissauan Participants

June 19 - Monday

- 8:30 - 10:00 Introduction and Orientation - Tour of Lab. and Facilities
10:00 - 10:30 Intermission
10:30 - 12:00 Developing Seed Programs - Why Test Seed - Elements of a
Comprehensive Seed Program
12:00 - 1:30 Lunch
1:30 - 3:00 Introduction to Seed Testing
3:00 - 3:30 Intermission
3:30 - 5:00 Seed Development and Maturation

June 20 - Tuesday

- 8:00 - 10:00 Sampling Seed for Quality Control
10:00 - 10:30 Intermission
10:30 - 12:00 Introduction to Purity Analysis
12:00 - 1:30 Lunch
1:30 - 3:00 Purity Analysis - Corn
3:00 - 3:30 Intermission
3:30 - 5:00 Purity Analysis - Rice

June 21 - Wednesday

- 8:00 - 10:00 Introduction to Germination Testing
10:00 - 10:30 Intermission

- 10:30 - 12:00 Germination Testing - Corn
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Germination Testing - Rice
- 3:00 - 3:30 Intermission
- 3:30 - 5:00 Organization of Seed Testing Laboratory

June 22 - Thursday

- 8:30 - 10:00 . Seed Testing Equipment
- 10:00 - 10:30 Intermission
- 10:30 - 12:00 Seed Moisture Evaluations
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Purity Analysis - Sorghum
- 3:00 - 3:30 Intermission
- 3:00 - 5:00 Purity Analysis - Rice

June 23 - Friday

- 8:30 - 10:00 Germination Testing - Sorghum
- 10:00 - 10:30 Intermission
- 10:30 - 12:00 Germination Testing - Rice
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Germination Testing - Plastic bags/Corn, soybeans
- 3:00 - 3:30 Intermission
- 3:30 - 5:00 Germination Testing - Crispers/Peanuts, Sorghum

June 26 - Monday

- 8:30 - 10:00 First Count Germination - Corn
- 10:00 - 10:30 Intermission

- 10:30 - 12:00 First Count Germination - Rice
 12:00 - 1:30 Lunch
 1:30 - 3:00 Plant Field Emergence Tests / Corn, Soybeans
 3:00 - 3:30 Intermission
 3:30 - 5:00 Plant Field Emergence Tests / Peanuts, Sorghum

June 27 - Tuesday

- 8:30 - 10:00 First Count Germination - Sorghum
 10:00 - 10:30 Intermission
 10:30 - 12:00 First Count Germination - Corn (Plastic bag)
 First Count Germination - Sorghum (Crisper)
 12:00 - 1:30 Lunch
 1:30 - 3:00 Introduction to Seed Drying
 3:00 - 3:30 Intermission
 3:30 - 5:00 Seed Drying Facilities and Operations

June 28 - Wednesday

- 8:30 - 10:00 First Count Germination - Rice
 10:00 - 10:30 Intermission
 10:30 - 12:00 Final Count Germination - Corn
 12:00 - 1:30 Lunch
 1:30 - 3:00 First Count Germination - Soybeans (Plastic bag)
 First Count Germination - Peanuts (Crisper)
 3:00 - 3:30 Intermission
 3:30 - 5:00 Extension Seed Work

June 29 - Thursday

- 8:30 - 10:00 Seed Laboratory In Guinea - Bissau
 Review of Design, Organization Operation, Records,
 Function, Equipment

- 10:00 - 10:30 Intermission
- 10:30 - 12:00 Seed Production Areas in Guinea - Bissau
Sampling for Quality Evaluation, Transportation,
Personnel, Inspectors
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Tour of Experimental Plots
- 3:00 - 3:30 Intermission
- 3:30 - 5:00 Tour of Experimental Plots

June 30 - Friday

- 8:30 - 10:00 Final Count Germination - Corn (Plastic bags)
Final Count Germination - Soybeans (Plastic bags)
- 10:00 - 19:30 Intermission
- 10:30 - 12:00 Visit State Testing Lab
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Introduction to Seed Storage
- 3:00 - 3:30 Intermission
- 3:30 - 5:00 Precepts of Seed Storage

July 3 - Monday

- 8:30 - 10:00 Final Count Germination - Sorghum
Final Count Germination - Peanuts (Crisper)
Final Count Germination - Sorghum (Crisper)
- 10:00 - 10:30 Intermission
- 10:30 - 12:00 Characteristics of Seeds
- 12:00 - 1:30 Lunch
- 1:30 - 3:00 Introduction to Seed Processing
- 3:00 - 3:30 Intermission
- 3:30 - 5:00 Processing Equipment Demonstrations

July 5 - Wednesday

- 8:30 - 10:00 Final Count Germination - Rice**
- 10:00 - 10:30 Intermission**
- 10:30 - 12:00 Use of Psychrometrics**
- 12:00 - 1:30 Lunch**
- 1:30 - 3:00 Problems in Psychrometrics**
- 3:00 - 3:30 Intermission**
- 3:30 - 5:00. Tetrazolium Testing**

July 6 - Thursday

- 8:30 - 10:00 Practical Tetrazolium Evaluation (Cut Seed)**
- 10:00 - 10:30 Intermission**
- 10:30 - 12:00 Count Field Emergence Tests/Corn, Soybeans, Peanuts
Sorghum**
- 12:00 - 1:30 Lunch**
- 1:30 - 3:00 Tetrazolium Interpretation**
- 3:00 - 3:30 Intermission**
- 3:30 - 5:00 Tabulate Germination, TZ and Field Emergence Results
all Crops**

July 7 - Friday

- 8:30 - 10:00 Final Count Germination - Rice**
- 10:00 - 10:30 Intermission**
- 10:30 - 12:00 Briefing for Tour**
- 12:00 - 1:30 Lunch**
- 1:30 - 3:00 Departure Preparations**
- 3:00 - 3:30 Intermission**
- 3:30 - 5:00 Departure Preparations**

July 14 - Friday

A.M. & P.M. Continue program at Texas State Technical Institute

July 15 - Saturday

A.M. & P.M. Travel to Dallas, Texas for final departure preparations

July 16 - Sunday

A.M. & P.M.. Return to Mississippi State University for final departure plans

July 17 - Monday

A.M. & P.M. Depart for New York and Guinea Bissau

APPENDIX C
Seed Testing Report Form

FICHA DE REGISTRO NAO OFICIAL

No.de Laboratorio_____

Cultura_____

Data de Registro_____

Lote Numero 'ou' Referencia_____

Enviado Por_____

Endereco_____

Observacoes_____

<u>TESTE COMPLETA</u>	DATA _____
HUMIDADE _____	%
PUREZA _____	%
GERMINACAO _____	%

ANALISE DA PUREZA

Peso da Amostra de Trabalho_____

<u>Componentes</u>	<u>Peso Gramas</u>	<u>Porcentagem</u>
Sementes	_____	_____
Outras Culturas	_____	_____
Material Inerte	_____	_____
Ervas Daninhas	_____	_____

