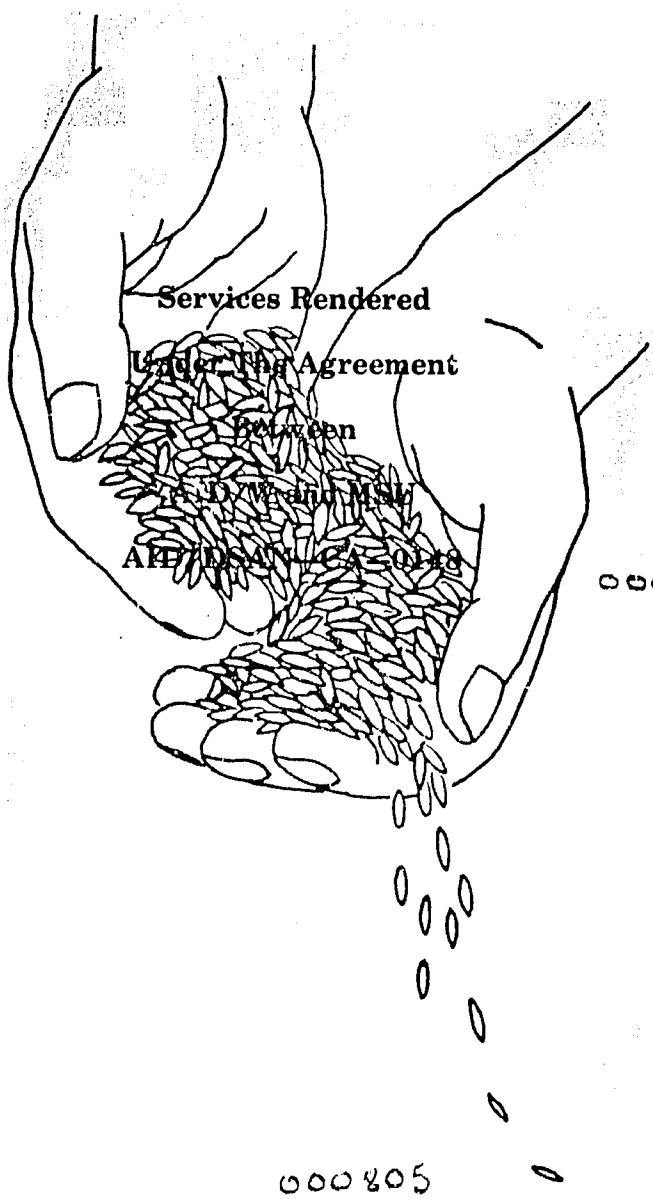
REPORT TO:
USAID/Upper Volta,
NSS-MA/GOUV and
AID/W

TA 82-01

SEED PRODUCTION AND TECHNOLOGY TRAINING COURSE
Ouagadougou, Upper Volta
March 1 - 12, 1982



SEED TECHNOLOGY LABORATORY
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI STATE, MISSISSIPPI

Report To

USAID/Upper Volta, NSS-MA/GOUV and AID/W
on the
Seed Production and Technology Training Course

Services Rendered
Under the Cooperative Agreement Between
AID/W and MSU
AID/DSAN-CA-0148

Seed Technology Laboratory
Mississippi State University
Mississippi State, Mississippi
39762

April, 1982

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REPORT SUMMARY

TITLE: Seed Production and Technology Training Course Ouagadougou, Upper Volta

COOPERATIVE AGREEMENT: AID/DSAN-CA-0148 with Mississippi State University

CONSULTANTS: Howard C. Potts and Gary A. Reusche

PERIOD OF COURSE: March 1 - 12, 1982

Summary

1. The first basic course in seed production and technology presented in Upper Volta by technicians from the MSU Seed Technology Laboratory was given March 1 - 12, 1982.

2. Nineteen participants earned certificates. Six of the participants work for the NSS, the counterpart agency for the USAID/UV Foundation Seed Production Project, 11 participants were involved in ORD-level seed programs and two were seed production officers at research stations.

3. Four specific recommendations concerning training, equipment and use of short term technical consultants are made.

ACKNOWLEDGEMENTS

The consultants express their grateful appreciation to Mr. Dale Rachmeler, Project Manager, USAID/UV Foundation Seed Project for serving as coordinator, interpreter, tehcnical assistant, and gracious host throughout the consultants' time in Upper Volta.

To Mr. Koumassi Yago, Chief; Mr. Aime Zoungrana, Asst. Chief; Mr. Emile Komi, Seed Production Officer; Mr. Barry Mamadou, Inspector, and Mr. Ibrahim Yacacubu, Processing Agent of the National Seed Service, we express our sincere appreciation for the many kindnesses and helpful assistance given throughout the course.

For Mr. Richard Meyers, Mission Director, we express appreciation for his continous interest in and support of the "Seed Project" over the past eight years and wish him success in all his future endeavors.

Appreciation is also extended to each of the participants for their cooperation, patience and attention. They were as fine a group as any with which we have had the pleasure to work.

Miss. State Univ.

13 April 1982

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SEED PRODUCTION AND TECHNOLOGY TRAINING COURSE

Ouagadougou, Upper Volta
March 1 - 12, 1982

Background

The lack of technically trained manpower has and continues to be a major constraint to the balanced development and implementation of a comprehensive seed program in Upper Volta.

When measured in terms of personnel required or tonnage of seed of improved varieties handled the requirements are numerically small. However, the technical complexities of production, marketing and gaining farmer utilization are equally as demanding as those of a much larger program. Each individual has several technical responsibilities in a small program; such responsibilities normally are assigned to several persons in a larger program. The need for technical competence in each activity is equal regardless of program's size.

During the period 1975 - 1981, the joint UV/USAID Seed Multiplication Project (686-0202) concentrated its efforts on building infrastructure with minimal emphases placed upon technical training. The revised Foundation Seed Production Project (686-0245) approved in May 1981 places much greater emphasis on technical training at three levels: on-the-job, short term (in-country and off-shore) and long term (degree). Indeed, more technical training has taken place during the first 10

months of the "new" project than was accomplished during the entire six-year life of the old project. The first degree-level participant is scheduled to begin training in seed technology at Mississippi State University in August, 1982.

Terms of Reference

The USAID/UV Mission in response to an official request from the GOUV requested the short term services of two seed technology specialists under the AID/DSAN-CA-0184 Cooperative Agreement with Mississippi State University (MSU). The specified duties of the specialists was to implement an "Annual Seed Technology Training Course", the first of which was scheduled March 1 - 12, 1982. The topics identified for this course included the following: seed production management, seed processing and storage, use of seed treatment pesticides, seed testing and quality control techniques, seed marketing and field demonstration techniques.

The MSU nominated and the AID/W Project Manager approved Dr. Howard C. Potts and Mr. Gary A. Reusche, staff members of the Seed Technology Laboratory, to provide the requested services. Dr. Potts departed February 21 to assist in pre-course preparations and Mr. Reusche departed on February 26. Both specialists returned to MSU on March 13.

Implementation

The detailed Schedule of Instruction is included as Appendix I. The topics selected were based upon the recognized needs of the

individual participants and the facilities and materials available for use. The final schedule was not completed until the 8th day of the Course in an effort to specifically meet participant needs.

Every topic was presented using either slides, transparencies and/or actual materials and equipment. Where possible, specific subject areas included a lecture, then a demonstration and practical exercise (in sequence) with the participants encouraged to ask questions at any time. The latter was greatly facilitated by Mr. Reusche's ability to lecture and respond in French.

A photo of the participants and instructors is presented on the following page with their names and responsibilities listed in Appendix II. Without exception the participants were cooperative, timely and actively participated in all activities.

Grades of the course examination were surprising high, particularly in view of the limited previous training for all except five of the group. The examination was structured on the basis of the final examination for the six week "Seed Improvement Training Course" taught each year at MSU. Grades ranged from 38 to 89% with an average being 74%. This indicated that a majority of these participants are now capable of receiving more comprehensive instruction in the specific details required for mastery of the techniques utilized by seed technologists.

The classroom, laboratory, seed cleaning, and field grow-out facilities at the NSS headquarters in Ouagadougou were excellent for the topics presented. The only training aid not available was an overhead projector. An opaque projector was substituted but was not fully

1. Participants and instructors (See Appendix II).

satisfactory. There was no alternating temperature germinator, slurry or liquid application seed treater, or operational seed cleaning equipment, other than the No. 27 Clipper Cleaner, available to the Ouagadougou training site. Irrigated land which could be planted for use in practical training of field inspection and rouging exercises during the dry season can be made available for future courses.

Recommendations

1. The Technical Advisor should continue his active program of on-the-job training of NSS Inspectors until each inspector is qualified to accurately inspect production fields, draw and examine a representative sample and conduct an accurate purity and germination test on seed of every major crop in Upper Volta.

Technically, the inspectors hold the "key" to the success of the NSS program. Although classed as inspectors, 95% of their responsibilities involve educational and public relations activities. Each man must not only know why and how to do his job but be prepared to demonstrate and explain the reasons and importance of each activity. The latter can not be done in the seclusion of their NSS headquarters offices.

2. Planning for an intensive short course, three weeks instruction, for training NSS inspectors and selected ORD seed technicians in the precise details of seed quality evaluation should begin immediately.

Accurate and repeatable evaluation of seed quality is the basis for identifying the successes and failures of the national and ORD level seed programs. Serious weakness in understanding and use of standard techniques for evaluating seed quality were identified during the practical exercises given during this course. The next course should cover in detail every aspect of purity and germination testing for seed of all

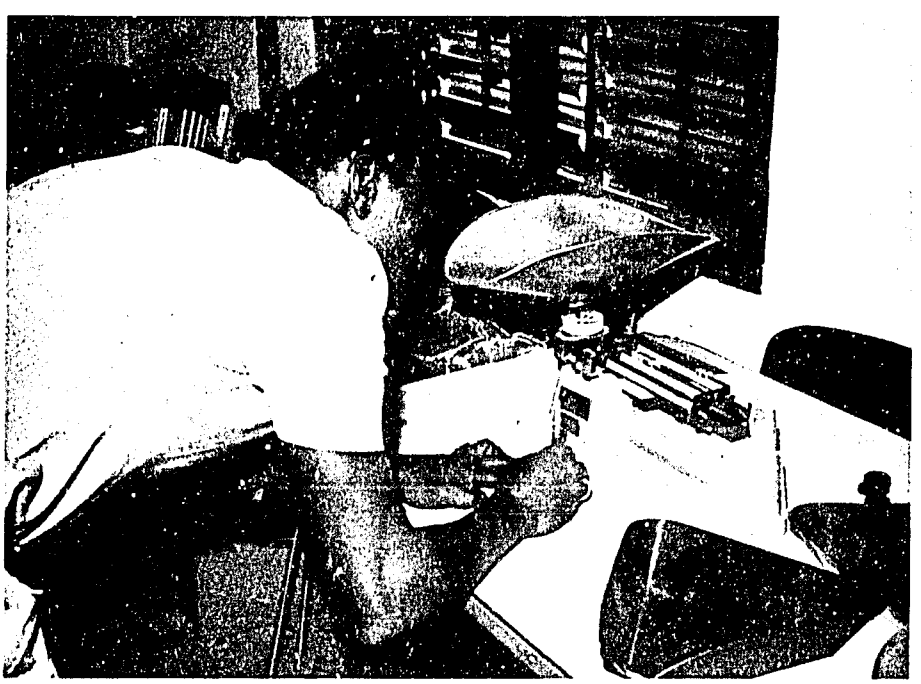
major crops grown in Upper Volta including vegetable seed. The MSU could provide two experienced instructors during the first quarter of 1983, if requested.

3. The NSS Director and Technical Advisor throughly evaluate the list of equipment recommended for purchase under the current project and order that equipment necessary for both operational and training needs at the earliest possible date.

An alternating temperature germinator and several other items are on order. However, the screens originally supplied for the seven air-screen cleaners are mostly inappropriate for the crop seed to be cleaned and appropriate screens are badly needed. Broken and/or defective parts which arrived with the original equipment orders should be replaced via exchange or pro-forma invoice. Consideration should be given to ordering equipment and supplies associated with classroom and field training and demonstrations. The specific items were discussed during consultants' conversations with the Project Manager.

4. The NSS and USAID/UV request the services of a seed marketing consultant to assist in the evaluation and interpretation of the data accumulated through the Seed Use Survey.

The methodology used and the raw data collected in 1981 is excellent. This statistically accurate survey will provide valid base line data concerning seed use patterns of Sahelean farmers, which at present is simply not available in any developing country. The valid interpretation and publication of the results will be important not only to Upper Volta but to all national and international organizations working with developing seed programs.



2. Conducting the purity analysis.

3. Planting and interpreting germination tests.

4. Planting and counting field emergence tests.

5. Inspection and operation of the air-screen cleaner.

6. Some key NSS personnel. Koumassi Yago, Chief (above); Zaungrana Aime, Deputy Chief (lower right); Mamadou Barry, Inspector-Analyst (standing-lower left).

Appendix II
List of Participants and Instructors

PARTICIPANTS

Name	Position	Organization
AIME, Zoungrana 1/	Deputy Chief	NSS
BARRY, Mamadou 1/	Inspector	NSS
DABIRE, Jean-Claude	Chief, Northern Region Crop Production	ORD Bougouriba
GUE, Gustave	Seed Production Officer	IRAT - Saria
KABORE, Alain	ORD Seed Production Officer	ORD Bougouriba
KADIO, Seydou 1/	Chief Inspector	NSS
KOMI, Emile	Seed Production Officer	IRHO - Saria
NARE, Jean-Baptiste	Chief, Crop Production	ORD Koupela
OUEDRAOGO, Eugene	Ag. Prod. Officer, Gorum-Gorum Sector	ORD Sahel
OUEDRAOGO, Gomnongado	Crop Production Agent	ORD Kaya
SANON, Soungalo	Chief, Rice Production Center	ORD Banfora
SAWADOGO, Samuel	Inspector	NSS
TIENDREBEOGO, Pascal	Chief, Seed Farm	ORD Dedougou
TIENDREBEOGO, Jean-Bosco	Chief, Seed Unit	ORD Ouagadougou
TRAORE, Koniba	Chief, Crop Production	ORD Koudougou
TRAORE, Moumouni	Chief, Seed Farm	ORD Fada
YACACUBU, Ibrahim 1/	Processing Agent	NSS
ZONG-NABA, Augustin	Crop Research Officer	ORD Ouahigouga
ZONGO, Apollinaire	Inspector	NSS

1/ Also served as assistant instructors or activities coordinator.

Thursday, March 4		Responsible
0800 (C)	Rougeing	Potts
0900 (C)	Seed Moisture Determintion	Reusche
1000	Break	
1030 (PE)	Use of Moisture Testers	Reusche
1230	Lunch	
1515 (C)	Precepts of Seed Storage	Potts

Friday, March 5		
0800 (C&PE)	First Count - sorghum	Potts
0900 (C)	Environmental Influences on Seed Quality	Reusche
1000	Break	
1030 (C)	Principles of Seed Separation	Potts
1130 (C)	Seed Conditioning and Handling	Potts
1230	Lunch	
1515 (C)	No. 27 Clipper Cleaner - principles of operation	Reusche
1615 (PE)	Demonstration No. 27 Clipper Cleaner	Potts

Saturday, March 6			
0800 (PE)	Group I	First Count - cowpeas	Reusche
	Group II	Operation No. 27 Cleaner	Potts
1000	Break		
1030 (PE)	Group I	Operation No. 27 Cleaner	Potts
	Group II	Frist Count - cowpeas	Reusche
1230	Lunch		

Monday, March 8		
0800 (PE)	Summarize Variety Description Forms	Potts
0900 (C)	Small Farm Drying Systems	Reusche
1000	Break	
1030 (C)	National Seed Policy and Program	Yago

		Responsible
1130 (C)	Field Inspection Techniques	Potts
1230	Lunch	
1515 (C)	Consequences of Breeding Methods on Seed Production	Potts
1615 (C)	Purposes and Objectives of Seed Certification Programs	Reusche

Tuesday, March 9

0800 (C)	Purposes and Methods of Treating Seed	Reusche
0900 (C)	Seed Treatment Materials	Potts
1000	Break	
1030 (C)	Application of Pesticides	Reusche
1130 (C)	Seed Packaging and Packaging Materials	Potts
1230	Lunch	
1515 (C)	Other Methods for Evaluating Seed Quality	Reusche
1615 (C)	Facts About Seed	Potts

Wednesday, March 10

0800 (C)	Principles of Seed Marketing	Potts
0930 (C)	Preliminary Results of UV Seed Use Survey	Rachmeler
1000	Break	
1030 (C)	Creating Farmer Demand for Seed of Improved Varieties	Resuche
1130 (C)	Principles for Demonstrating Improved Varieties	Potts
1230	Lunch	
1515 (PC)	Final Count Germination and Interpretation of Test Results	Reusche

Thursday, March 11

0800 (PE)	Evaluation of Field Plantings	Potts
0900 (C)	Influence of Seed Quality on Crop Performance	Reusche

		Responsible
1000	Break	
1030 (PE)	Summary of Seed Quality Evaluation Tests	Potts
1130 (C)	Comprehensive Quality Control Program	Reusche
1230	Break	
1515 (PE)	Review of Technical Information	Reusche & Potts
1615 (PE)	Course Examination	Aime

Friday, March 12

0800 (C)	Review of Examination	Reusche & Potts
0930	Break	
1000	Closing Ceremonies	Yago

Appendix I
Schedule of Instruction

Monday, March 1		Responsible
0800 (C) [1]	Registration and Inauguation	Aime
0930	Break	
1000 (C)	Course Objectives and Goals	Rachmeler
1030 (C)	Seed Program Development	Potts
1230	Lunch	
1515 (C)	Sampling and Testing Seed	Reusche
1615 (C)	Seed Development and Maturation	Potts
Tuesday, March 2		
0800 (C)	Seed and Seedling Morphology	Reusche
0900 (PE)[1]	Obtaining a Uniform Sample	Potts
1030	Break	
1100 (C)	Purity Analysis - purpose and definitions	Reusche
1130 (PE)	Purity Analysis - cowpeas and sorghum	Potts
1230	Lunch	
1515 (C)	Germination Testing	Potts
1615 (PE)	Germination - cowpeas and sorghum	Reusche
Wednesday, March 3		
0800 (C)	Improved Varieties - development	Potts
0930 (C)	Producing High Quality Seed	Potts
1100	Break	
1130 (PE)	Field Plantings - cowpeas and sorghum	Reusche
1230	Lunch	
1515 (C)	Varietal Descriptions for Inspectors	Potts
1615 (PE)	Prepare Varietal Description	Potts

[1] C = lecture discussion, P.E. = supervised practical exercise.

INSTRUCTORS

Name	Position	Organization
POTTS, Howard	Principal Instructor	MSU
RACHMELER, Dale	Project Manager, Foundation Seed Project	USAID/UV
REUSCHE, Gary	Principal Instructor	MSU
YAGO, Koumassi	Chief	NSS