



Intsormil

TRIP REPORT

BY

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KANSAS STATE UNIVERSITY

ICRISAT - HYDERABAD, INDIA
January 30 - February 3, 1984

UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM
February 13 - 14, 1984

CONTRACT NO.: AID/DSAN/XII-G-0149

☆ International
Sorghum/Millet

☆ Collaborative Research
Support Program
(CRSP)

A Research Development Program of the Agency for International Development, Participating Land-Grant Universities, Host County Research Agencies and Private Donors.



Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln



TRIP REPORT - INTSORMIL

ICRISAT and the United Kingdom
January and February, 1984

TRAVELER: Richard L. Vanderlip, Agronomist, Kansas State University, INTSORMIL
KSU-6

PURPOSE: Primary purpose was to coordinate pearl millet research in KSU-6 with ongoing pearl millet programs at ICRISAT and the Department of Physiology and Environmental Studies, University of Nottingham.

PLACES AND ORGANIZATIONS VISITED:

ICRISAT
University of Nottingham, Department of Physiology and Environmental
Studies

PERSONS CONTACTED:

ICRISAT (see attached itinerary)
University of Nottingham - Dr. Chin Ong
Dr. Robin Matthews
Dr. Fran Bidinger (ICRISAT physiologist
on sabbatical at Cambridge)

ITINERARY: January 30 - February 3 - ICRISAT
February 13, 14 - University of Nottingham

NARRATIVE:

ICRISAT - Discussion with Lee House was primarily regarding the SADCC Center in Zimbabwe which he will be going to lead. This will be particularly helpful as a source of identifying cooperative workers in the South African area and identification of potential graduate students. He also emphasized the need for providing them with a range of pearl millet materials for testing. He felt there were sufficient seed production capabilities in the area that millet hybrids would be a possibility.

Discussion with the pearl millet breeding program, D. J. Andrews, K. N. Rai, D. S. Talukadar, S. B. Chavan, and Pheru Singh, provided an update on the breeding program at ICRISAT. Dave Andrews was particularly concerned that the two male steriles produced in the Kansas State University program be released for use in the Indian millet program. Of particular interest to the stand establishment problems were 1) the Togo material which is characterized by longer branches on the heads and, particularly, large seed, and 2) the screening for seedling emergence that Pheru Singh is doing. If the Togo material is not presently in the U.S., it should be obtained as soon as possible.

Discussions with G. Alagarswamy and V. Mahalakshmi, millet physiologists, were primarily regarding determination of adaptation of millet to a particular geographic area. Much of the discussion involved determining the most appropriate maturity for a given area. Dr. Alagarswamy has found through manipulation of maturity by photoperiod that for a given area a specific maturity of plant is required.

Dr. P. Soman has done extensive surveys of stand establishment difficulties in both sorghum and pearl millet. He has also developed a number of screening techniques to look at the range of tolerance of sorghum and millet, particularly to high temperature, crusting, and moisture conditions. Tentative arrangements were made with him for Mr. Elijah Modiakagotla, from Botswana, who is working on an M.S. degree under my direction, to visit the ICRISAT program prior to his return to Botswana.

S. B. King and R. P. Thakur, millet pathologists, provided a field tour of the millet pathology program.

Discussions with S. P. Wani and K. R. Krishna covered the areas of associated nitrogen fixation and microrhizal effects on phosphorus uptake.

Discussions with the farming systems program, S. M. Vermani, A. K. S. Huda, and Piara Singh, were primarily about the possibility of developing a pearl millet plant growth model. Even though a structural outline was developed for the ICRISAT INTSORMIL WMO Workshop on the Microclimatology of Sorghum and Pearl Millet in 1982, little progress has been made since, because ICRISAT does not have anyone working directly in plant growth modeling and there is no program in INTSORMIL approved for plant growth modeling.

Discussions with the sorghum physiologists were quite general in nature. John Peacock once again emphasized the need to get common sorghum lines into the U.S. research programs.

I attended two seminars while there, one on collections of sorghum and millet made in southern Sudan, Camaroon, and Sierra Leone, and the other by Dr. Merv Ludlow from CSIRO on plant mechanisms for dealing with moisture stress.

In addition to other numerous discussions with individuals, I presented a seminar on the modifications to SORGF, the sorghum growth model, which I had worked on during my sabbatical in Australia.

University of Nottingham

Discussions the first day were primarily regarding the controlled temperature experiments that Dr. John Monteith (not available for discussion because he was in Japan) and his colleagues have done on pearl millet. They also have two scientists at ICRISAT doing field research there on pearl millet physiology. Planned work included additional experiments looking at the combined effects of temperature and daylength on pearl millet phenology. Dr. Bidinger (ICRISAT) asked if there would be a possibility of field plantings in Kansas.

The second day was primarily with Dr. Fran Bidinger, ICRISAT, discussing the surveys that they had done in India on pearl millet stand establishment and genetic variability in both sorghum and millet to withstand high temperature conditions at emergence.

Program for Dr. R. L. Vanderlip, Millet Physiologist, KSU (has been on sabbatic in Australia, now returning to the USA via ICRISAT)

<u>Monday 30th January</u>	Millet Program	10.00 onwards
<u>Tuesday 31st January</u>		
8.30-12.00	Farming Systems Program	S. M. Virmani A. K. S. Huda Piara Singh
12.00-13.00	Lunch	
13.00-14.00	Sorghum Physiology	R. K. Maiti
14.00-15.00	GRU Seminar	Melak Mengesha K. E. Prasada Rao
15.00-16.00	Sorghum Physiology	P. Soman
16.00-17.00	Free	
<u>Wednesday 1 February</u>		
8.30-10.30	Sorghum Physiology	N. Seetharama J. M. Peacock
10.30-12.00	Dr. Ludlow's Seminar	Classroom No. 1
12.00-13.00	Lunch	
13.00-15.00	Free	
<u>Thursday 2nd February</u>		
9.00- 9.30		Sussil Pande
10.30-11.30	Seminar	
12.00-13.00	Lunch	
13.30-15.00	Modelling group	
17.00	Nottingham Group	

PROGRAM FOR DR. R. L. VANDERLIP
Millet Physiologist, KSU

(has been on sabbatic in Australia,
now returning to the U.S.A. via
ICRISAT, Hyderabad)

Monday 30 January 1984

900	Lee house, Leader, Sorghum Imp.
1000 - 1030	D. J. Andrews, Leader, Millet Imp. Program
1030 - 1100	K. N. Rai, Millet Breeder
1100 - 1130	B. S. Talukdar, Millet Breeder
1130 - 1200	S. B. Chavan, Millet Breeder
1200 - 1300	L U N C H
1300 - 1330	Pheru Singh, Millet Breeder
1330 - 1400	G. Alagarswamy, Millet Physiologist
1400 - 1430	V. Mahalakshmi, Millet Physiologist
1430 - 1500	P. Soman
1500 - 1600)	S. B. King, Millet Pathologist & Sub-Program Leader
)	S. D. Singh, Millet Patholgist
)	R. P. Thakur, Millet Pathologist
1600 - 1700)	S. P. Wani, Millet Microbiologist
)	K. R. Krishna, Millet Microbiologist