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Intsormil

TRIP REPORT

BRAZIL

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March 11 - 17, 1984

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Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln

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TRAVELER: Richard A. Frederiksen, Professor, Dept. of Plant Pathology, Texas A&M University.

PURPOSE: To make final preparations for first year collaborative research with EMBRAPA sorghum workers and to examine first hand the areas of ongoing sorghum research.

CHIEF PERSONS CONTACTED:

Renato Borgonovi	Sorghum Program Leader, Sete Lagaos
Carlos Casela	Breeder, Host Resistance, Sete Lagaos
Antonio Raupp	Agronomist, Pelotas
Marilda Porto	Breeder, Pelotas
Nely Brancão	Pathologist, Pelotas
Ricardo Martins	Pathologist, Pelotas (student)
Ademir Capelaro	Seed Technology, Pelotas
Antonio Oliveira	Breeding, Pelotas (student)
Daltro Cordeiro	Plant Nutrition, Pelotas
Algenor Da Silva Gomes	Director, UEPAE, Pelotas (EMBRAPA)
Nelson Costa	Assistant Director, Pelotas
Roland Vencovsky	Director, EMBRAPA, Maize & Sorghum, Sete Lagoas
Fernando Fernandes	Assistant Director, EMBRAPA, Sete Lagoas
Laudelino Leite	Pathologist, EMBRAPA, Sete Lagoas
A. S. Ferreira	Pathologist, EMBRAPA, Sete Lagoas
Robert Schaffert	Breeder, EMBRAPA, Sete Lagoas

MAJOR ACCOMPLISHMENTS:

We developed an outline for areas of collaboration between EMBRAPA and INTSORMIL workers, identified persons to participate in exchanges between our institutions, and participate in workshops and symposiums. I discussed research ideas with pathologists and breeders in Southern Brazil and at Sete Lagoas. These ideas will be developed into research initiatives.

ITINERARY:

March 12: Traveled from Rio to Pelotas, Brazil and met Renato Borgonovi, Sorghum Program leader. Spent the night at the Manta Hotel in Pelotas.

March 13: Toured sorghum fields in Bage area with Renato Borgonvi and staff. Spent the night at Pelotas.

March 14: Toured research plots at EMBRAPA's Pelotas Research Station and met with staff there.

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March 15: Traveled to Sete Lagoas, met with Schaffert and others.

March 16: Completed program and talks with EMBRAPA Director Vencovsky and returned to Rio for flight to Miami.

March 17: Returned to College Station, Texas.

OBSERVATIONS:

Renato Borgonovi and Carlos Casela served as my hosts and tour ors throughout the week in Brazil. I met them at Pelotas in ande Do Sul because of the severe drought in Central and Northern Brazil. We drove from Pelotas to Bagé in RS where we saw several farmers' fields of grain sorghum. Most of these fields looked good. One farmer noted that he had a yield of 7 tons per hectare in one field but that others were yielding between 3 and 4 tons. It is estimated that there were 17,000 Ha of sorghum near Bagé and 50,000 Ha in RS. Seed stocks of sorghum were in short supply for 1983-4 but are expected to be adequate in 1984-5. Several fields of US hybrid (seed production in Brazil) had an unusually high number of off type plants both grassy and shattering types.

Of experimental hybrids, "R300" using SC326-6 as the pollen parent, looked very good.

Anthracnose was the most common disease and greenbugs the more common pest observed. At this time, only anthranose appeared to be causing the most severe damage. The research plots at Bagé's University Farm Campus had a major infestation of greenbugs and differences among cultivars were evident. The staff at Bagé plan on making the appropriate observations.

At Pelotas, I toured laboratories as well as field nurseries. Considerable effort was being spent on seed pathology. The need for this work was questioned enthusiastically. In the field, downy mildew and anthracnose were equally important. The new "downy mildew" pathotype 4 may already be developing at Pelotas. I discussed the importance of selectively increasing levels of downy mildew for future screening. Currently, downy mildew screening at Pelotas is very adequate. Field observations suggested several races of Colletotrichum were also present and collections from specific host cultivars were made for this purpose.

We jointly reviewed the hybrid nursery trials, breeding trials, and disease nurseries. Certain US hybrids looked very good at Pelotas. Among the better in this trial included Asgro Jade, Funks H2215, Continental 321 (uses SC326-6 as the pollen parent), BR300 (a 326-6 hybrid as well), Continental 222, DA64, BR301 (uses a Redlan seed parent), N.K. Savanna 5, N.K. 2670, Ruby and Rancher.

In the breeding nursery were several F_3 progeny rows of SC748-sel x SC326-sel. Many of these entries were excellent in appearance and have merit in South Texas disease trials as well. Other selections with promise included several SC326 x SC103 derivatives that had good yield potential and were early. These items would be of value to the South Texas program as well since they would probably have excellent anthracnose resistance.

Several aluminum soil tolerant sorghums were tested here: SC283, SC243, and SC418. Sorghum lines PU954199 and PU954201 were included because of their dormancy trait which is correlated with grain mold resistance. Overall, there was a good range of materials, good disease levels for screening, and an enthusiastic staff developing the program.

I saw several forage hybrids and sweet sorghums:

Hybrid	Comment
BR601	Excellent
BR602	Looks good
BR603	Both leaf blight & anthracnose
Brandes	Some downy mildew
Theis	Looks good, late
Wrey	Sus. to downy mildew
Mn1500	Very late
(Wrey x Theis)	Several excellent selections in trial

At Sete Lagoas, the nurseries were relatively disease free, even in the pathology nurseries. They have a nursery Ensaio Nacional de Doenças with 50 entries, very much like the INTSORMIL ADIN. CS35-6 was extremely susceptible to anthracnose at Sete Lagoas.

The Brazilians are very interested in working with us in areas outlined in our Memorandum of Understanding. These are stress resistance, disease and insect resistance, mineral nutrition, and overall plant breeding. Benefits from cooperative work should result in better sorghum in both temperate and tropical growing areas.