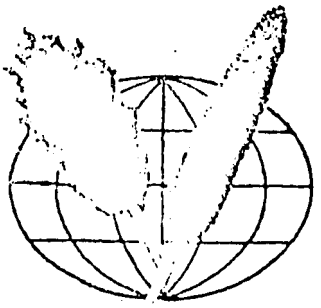

Intsormil

TRIP REPORT

MEXICO
by
Dr. F. R. Miller
Mr. John Mann
Texas A&M University

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☆ International
Sorghum/Millet

☆ Collaborative Research
Support Program
(CRSP)

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Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln

Trip Report - Mexico
October 11, 1982 to October 18, 19, 1982

Dr. F.R. Miller and Mr. John Mann

PURPOSE:

The object of this trip was to evaluate sorghum materials previously sent to Mexico and to discuss progress made on completing the memorandum of understanding to cooperate. The second objective was to complete initial plans for the Sorghum Breeding workshop scheduled for April 1983.

RESULTS:

We were met by Dr. Alberto Betancourt, INIA sorghum breeder, at Guadalajara. From that point Dr. Billy DeWalt, Mr. John Mann, Dr. Betancourt and I evaluated sorghum at Ocotlan, Celaya, Zatapec, El Batan and intermediate sites. Most areas had suffered serious drought conditions during the regular growing season. Maize losses were substantial, with estimates of 50 to 60 percent reduction in yields for the country. Sorghum losses were evident also but estimates were in the range of 25 to 30 percent reduction. Other crops were evidently reduced also as were pastures. Sorghum was not nearly as badly hurt as maize even though planting density was typically very high. Density was well over three times too high.

At Ocotlan where we observed and evaluated F_1 crosses, F_2 populations, F_3 through F_5 rows we were impressed with the superiority of materials coming from crosses provided by Texas A&M/INTSORMIL. Parental sources that were providing superior germplasm were 77CS1, 77CS2, ADN55 (SC0120- x Tx7000), Tx430, TAM428, 76CS478, 76CS490, 74CS5388, Tx623, SC0326-6 and 80CS2241. Excellent foliar disease resistance, downy mildew resistance and non-senescence was evident among the several generations planted at Ocotlan.

Materials contained in the Tropical Adaptation Trials at Ocotlan and Celeya were very good. Combinations with more TA in them were best at Ocotlan, while the more TE types were best at Celaya. Bacterial streak was very evident at Celeya but there were differences among hybrids. ATx623 x ADN55, ATx623 x

80CS2241, ATx623 x 76CS490 and ATx378 x RTx430 were among the best yielding hybrids at both locations.

Also at Celaya Ing. Vega and Ing. Jimenez had topcrossed many of their best females by RTx430. These were some of the best sorghum hybrids I've seen. Mean estimated yield of the 100^{+} hybrids was in excess of 12,000 lb/ac. This shows the combining ability which has been accumulated in these elite cultivars.

The twin seed hybrid trials at both Ocotlan and Celaya showed very high yields and t[illegible] percentages in excess of 80/100 spikelets. The twin seed materials con[illegible] to show excellent adaptation to drier environments.

INTSORMIL materials entered in the LASON (Latin American Sorghum Observation Nursery) showed a wide range of foliar disease response. Texas materials were both high yielding and generally free of rust, anthracnose and bacterial streak at Zetacapec. ATx623 x Rio produced in excess of 15,000 lbs/ac of grain at this tropical location.

A 100-entry three replication trial of selected temperature responsive sorghums were evaluated at El Batan, CIMMYT. Selections with high base temperatures had seed set but those with low base temperatures were completely sterile. Hybrids among the types had intermediate levels of seed set. Sorghums of a temperate nature such as Tx7000 and Tx378 produced seed set while tropically adapted types like 77CS2, Tx430 and others were sterile. Tx09 was completely decumbent and had developed over 100 tillers, an apparent response to the cold environment. There was a reversal in maturity among some of the entries at El Batan and Poza Rica, both trials were very good and as a part of this genotype x environment study will give an indication of the temperature response.

Dr. Vartan Guiragossian and Fred Miller met with various CIMMYT staff to finalize preliminary plans for the Sorghum Breeding workshop to be held at CIMMYT April 10 to 16, 1983. Ing. Elias Calles, INIA Sub-Director was contacted to be a keynote speaker to which he agreed. Country by country invitees were identified. Plans for a demonstration planting at Poza Rica were laid. Seeds will be sent to Dr. Guiragossian for planting on December 2, 1982.

Concerning the progress made on a memorandum of understanding to cooperate

very little progress has been made. INIA authorities have diverse opinions on why or why not to sign the memo. Following a meeting between Dr. Betancourt, INIA Sub-Directors and me, not much could be progressively reported. Following the meeting some progress appeared. This is currently being pursued. Both Dr. Betancourt and I were told by the Sub-Director Medina D. that we, INTSORMIL and INIA, should proceed to cooperate as much as we could pending the approval.

Ing. Elias Calles, Sub-Director located at Celaya, appears to have and understanding of sorghum research needs and what avenues must be explored to maximize cooperation. He is definitely someone who will benefit Latin American agriculture by developing international cooperative relationships.