

INSIDE — INTSORMIL



March, 2003

Sorghum/Millet Collaborative Research Support Program Newsletter

Publication 03-03

2002 INTSORMIL P.I. Conference in Addis Abba, Ethiopia

The 2002 INTSORMIL Principal Investigators Conference was held at the Sheraton Addis Hotel, November 18-20, 2002. The theme of the conference was “Increasing Profitability of Sorghum and Millets.” With the strengthening of many of the national agriculture research programs in production in some countries, associated with the use of new technologies, INTSORMIL has developed a new paradigm to focus on input and output markets to make sorghum and millet farming a more profitable enterprise. The Opening Session was chaired by Dr. Gebisa Ejeta, Organizing Committee Chair, and included welcoming remarks by the EARO Director, Dr. Demel Teketay; INTSORMIL Director, Dr. John Yohe;

U.S. Embassy Charge D’Affairs to Ethiopia, Mr. Thomas Hull; and the Opening Address by the Ethiopian Minister of Agriculture, H.E. Dr. Mulatu Teshome.

Conference session topics included: INTSORMIL Regional Program Highlights; INTSORMIL: Global Perspective and Mission; Biotechnology for Addressing Key Sorghum and Millet Constraints; Identity Preserved and Value-Added Products to Enhance Value of Sorghum and Millets; Developing Proper Markets, Policy, and Economic Environments; Strengthening Partnerships in Sorghum and Millet Research and Development; and Reports of Regional Program Working Groups.

Three field trips were held in conjunction with the conference. There was a one day pre-conference field trip to the Melkassa, Arsi-Negele, and Awasa Research Stations. At the end of the third day of the conference a field trip visit was made to the Ethiopian Biodiversity Research Institute. A three-day post-conference field trip was made to the Amhara Region to visit Lalibela, Woldiya, Kobo, Sirinka and Dessie research stations.

The conference was sponsored by INTSORMIL, EARO (Ethiopian Agricultural Research Organization) and USAID. Over 23 countries were

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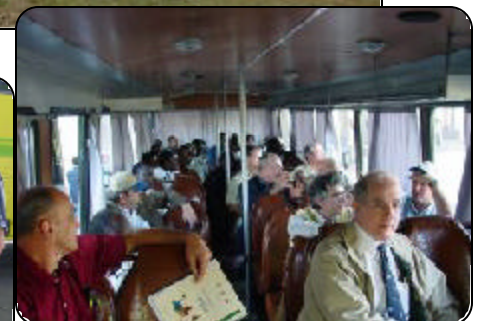
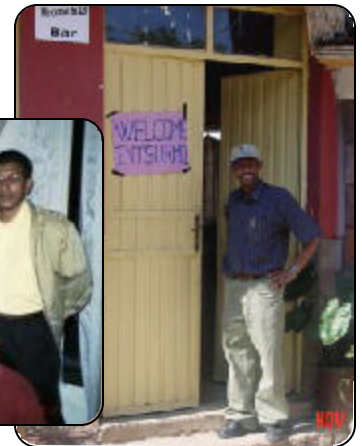
Conference Participants outside the Sheraton Addis Hotel

represented at the conference, with 141 participants attending. Poster sessions were held in conjunction with the conference and 78 posters were presented. A contest was held and cash prizes were awarded to Aboubacar Touré (Mali) and Issoufou Kapran (Niger), for oral presentations and to Hamidou Traoré, and Boniface Bougouma (Burkina Faso) and Beyene Seboka (Ethiopia) for poster presentations. EARO hosted a reception

at the Imperial Hotel and a banquet at the Ghion Hotel. INTSORMIL hosted a banquet and awards dinner at the Hilton Hotel. Certificates of Appreciation were presented to organizers of the conference, including Zenbaba Gutema, Girma Tezera, Dr. Tadesse Gebremedhin, and Dr. Aberra Deressa from EARO, Katy Ibrahim from Purdue University, Joan Frederick, Diane Sullivan, Dottie Stoner and Kim Jones, staff at the INTSORMIL

Management Office. Career Achievement Awards were presented to Drs. Henry Pitre, Darrell Rosenow, Lloyd Rooney, Gebisa Ejeta and John Yohe, Program Director, for their leadership and service to the INTSORMIL Program.

The conference was considered to be a resounding success by all those who attended.



Comments from the Director. . . John M. Yohe

The year 2002 was a good year for the INTSORMIL program. INTSORMIL activities have continued to grow stronger in Central America, West Africa, East Africa and in Southern Africa. We have seen new collaborators become active in INTSORMIL from Senegal, Burkina Faso, Ghana, Nigeria, Ethiopia, Mozambique, South Africa and in Nicaragua and El Salvador. INTSORMIL initiated four new projects; a large project on "Enhancing the utilization of grain sorghum and pearl millet through the improvement of grain quality via genetic and nutritional research" with sub-components of sorghum breeding, biotechnology, and poultry nutrition with Kansas State University and Texas A&M University; a new soil and water management project, "Soil and water management for improving sorghum production in East Africa" with the University of Nebraska; a new entomology project, "Sustainable management of insect pests" with West Texas A&M University and a new project on "Breeding pearl millet with improved performance, stability, and

resistance to pests", USDA/ARS/Tifton, Georgia. INTSORMIL is moving rapidly to a program focusing on contributing to the shift of sorghum and pearl millet from subsistence crops to value-added, cash crops.

INTSORMIL, USAID and the Ethiopian Agricultural Research Organization (EARO) hosted the 2002 INTSORMIL P.I. Conference in Addis Abba, Ethiopia. Over 23 countries were represented with 141 participants. This gave an opportunity for all to visit the ancient, historical country of Ethiopia and to observe first hand areas believed to be the ancestral origin of sorghum.

As we move into the third year of our current grant period (2001-2006) INTSORMIL is organizing visioning groups to develop statements about what INTSORMIL should be about in collaborative research and training programs for the next grant stage of 2006-2011. We look forward to working with the many scientists throughout

the program who will contribute to this effort.

The INTSORMIL External Evaluation Panel (EEP) will be initiating the Five Year In-Depth review of the program in October, 2003. Current EEP members are Dr. Walter deMilliano, African Centre for Crop Improvement (ACCI), Kwa Zulu Natal, South Africa, Dr. John Mann, Rice Tech, Inc, Houston, TX, Dr. Moussa Traore, Project Officer, Islamic Development Bank, Jeddah, Saudi Arabia, Dr. John Lynam, Rockefeller Foundation, Nairobi, Kenya, and Dr. Richard Hahn, Kansas State University, Manhattan. The five year EEP report is an integral component of the next request for a five year grant extension from USAID.

We see significant progress being made in areas of sorghum and millet utilization and in areas such as *Striga* control. We will continue to strive to have the best collaborative research efforts possible.

From the Green Revolution to the Gene Revolution Bologna (Italy), May 28 to 31, 2003

For further information and online registration: <http://www.avenuedia.it/linkCONG/Green-Gene/info.html>

Fifty years after the discovery of the structure of DNA, our progress in manipulating genes and unravelling their functions has been enormous and the consequences, for better or for worse, far-reaching. This Conference will bring together the architects of the green revolution and a number of pioneers of modern plant biotechnology who have laid the foundations for the gene revolution and have mastered the tools to harness its potential. Cutting-edge technologies will be

critically assessed for their value in identifying valuable alleles and in manipulating such alleles with indirect (e.g. marker-assisted selection) and/or direct (e.g. genetic engineering) approaches. The controversy surrounding transgenic crops is unprecedented, and the debate on the benefits and risks of GM crops remains unsettled. Speakers from different countries will illustrate the present status, opportunities and future perspectives of public and private research in plant biotechnology. A number of panel discussions will provide ample opportunities for confronting different views and for debating to what extent in

the future it may be possible to benefit from the merits of biotechnology while avoiding the shortcomings.

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Registration: (includes book of abstracts/coffee breaks/lunches)

Before March 15: Euro 160
After March 15: Euro 220
Students (under 35)
Before March 15: Euro 120
After March 15: Euro 160

Impact Assessment Workshop

John Yohe and Thomas Crawford attended a workshop, Impact Assessment of Agricultural and NRM Research: Needs, Challenges and Options, September 12 - 13, 2003 at the headquarters of the National Association of State Universities and Land Grant Colleges (NASULGC) in Washington, D.C. USAID Perspectives on Impact Assessment was presented by Ms. Emmy Simmons, Assistant Administrator of the Economic Growth, Agriculture

and Trade (EGAT) Bureau of USAID. Small groups met to discuss implications of the USAID Impact Assessment Task Force Report. Invited speakers made presentations on subjects such as measurement techniques to gauge economic impacts of productivity-enhancing research and measuring impacts of research on human health, nutrition, natural resources and the environment. Other sessions addressed specific methods of measuring social,

economic and environmental impacts of international agricultural research. Impact assessments that made a difference were presented by several specialists, including John Sanders. During a working lunch, small groups prepared written responses and recommendations to the USAID Impact Assessment Task Force. Written and oral reports were presented to USAID senior management.

Fusarium Laboratory Workshop

A *Fusarium* Laboratory Workshop will be held at Kansas State University in Manhattan, Kansas from June 22-27, 2003. The workshop is being co-sponsored by INTSORMIL. The workshop is a one-week full-time laboratory workshop that introduces the participants to the morphological, biological and phylogenetic species concepts currently used to identify these fungi. Laboratory sessions include morphological identification of most widely distributed *Fusarium* species,

DNA extraction and analysis of DNA sequences for species identifications, sexual crossing protocols, vegetative compatibility groups (VCGs), and PCR amplification of mating type alleles. Participants also will hear lectures on VCGs, *Fusarium* mycotoxins, mating type, population genetics, and biogeography of *Fusarium* species distribution. Instructors include: John F. Leslie (Kansas State University/Organizer), Brett A. Summerell (Royal Botanic

Gardens, Sydney, Australia), Walter F. O. Marasas (Medical Research Council, Capetown, South Africa), Baharuddin Salleh (Science University of Malaysia, Penang, Malaysia), and David Geiser (Pennsylvania State University, University Park, Pennsylvania). The number of participants is limited, and pre-registration is required. For more information or to register on-line go to www.oznet.ksu.edu/plantpath and follow the *Fusarium* links.

CRSP Council Meeting

John Yohe, the Vice Chair of the CRSP Council, and Thomas Crawford represented INTSORMIL at the CRSP Council Meeting of CRSP directors in Spring Green, Wisconsin on September 15 - 18, 2002. Thomas Hobgood and John Swanson, USAID, briefed the CRSP program directors regarding USAID restructuring, the agency's

agriculture strategy and program priorities in the Office of Agriculture and Food Security in the Bureau of Economic Growth, Agriculture and Trade (EGAT) and other issues of interest to the members of the CRSP Council. John Yohe presented an historical perspective of the CRSPs (compendium of key results) and led a

discussion on the membership of the CRSP Council (program directors, chairs of boards of directors, and chairs of technical committees). Thomas Crawford presented an update on the Mozambique INIA/CRSPs graduate degree program and briefed the council on the new CRSPs atlas (<http://crsps.org/crspatlas.htm>).

INIA/CRSPs Participant Training

The USAID/Mission in Mozambique has awarded a training grant to INTSORMIL to place 10 students from Mozambique in MS degree programs with the CRSP programs at U.S. Universities. INTSORMIL's Management Office is managing the \$1.2 million USAID Grant and coordinating the student's placement for degree training.

In August 2001, eight of the ten students attended the University of Nebraska for Intensive English Training before beginning their MS programs. All ten students are now placed in MS programs. Five of the ten students will do thesis research in Mozambique and one will do research in Costa Rica, while the rest will complete thesis research in the United States.



Participants from left to right

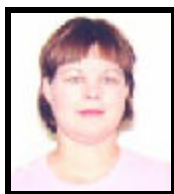
Back Row: M. Miguel, S. Xerinda, R. Uaiene, F. Mazuze **Front Row:** J. Augusto, F. Chitio, C. Jochua, A. Mutia, and J. Mutaliano, R. Maria

The INTSORMIL CRSP has 4 students pursuing their degrees; Rafael Uaiene/ agricultural economics, Fernando Chitio/entomology, Soares Xerinda/soil fertility and Joaquim Mutaliano/ sorghum breeding. The Bean/Cowpea CRSP has 3 students; Feliciano Mazuze/ agricultural economics, Magalhães Miguel/plant physiology, and Celestina Jochua/plant pathology. The Peanut CRSP has 2 students; João Augusto/ plant pathology and Amade Múitia/ peanut breeding. The Soil Management CRSP has one student, Ricardo Maria, studying soil fertility for his MS degree. This gives the CRSP scientists a unique opportunity to build collaborative linkages between their university communities, CRSP programs and Mozambique scientists.

NEW PROJECTS - NEW FACES

Meet the new faces behind INTSORMIL's four new projects at West Texas A&M University, Kansas State University, Texas A&M University, the University of Nebraska and the USDA/ARS in Georgia.

Dr. Bonnie Pendleton is an Assistant Professor of IPM Entomology at West Texas A&M University. Dr. Pendleton has collaborated with international entomologists Dr. D. C. Munthali in Botswana, Drs. Niamoye Yaro Diarisso and Yacouba Doumbia in Mali, Hame Abdou Kadi Kadi in Niger and Dr. Johnnie van den Berg in South Africa. Dr. Pendleton commented, "Our goals are to develop and evaluate longer lasting strategies for managing such major insect pests of sorghum and pearl millet as aphids, sorghum midge,



panicle-infesting bugs, stalk borers, and stored grain insects in Africa and the United States. Our objectives are focused on: 1) understanding the biology, ecology, and population dynamics of major insect pests; 2) assessing insect-plant interactions, especially damage caused by major insect pests; 3) developing cultural management strategies such as improved agronomic practices for tillage, fertilizer input, and planting patterns and use of resistant cultivars to manage major insect pests; and 4) educating farmers, consultants, and students in how to use integrated pest management and cropping systems approaches to manage insect pests."

Dr. Mitch Tuinstra is an Associate Professor in the Department of Agronomy at Kansas State University. Dr. Tuinstra notes that, "Joe Hancock and I work closely with the INRAN program in Niger, primarily Drs. Kapran and Issa, to develop sorghum varieties and hybrids with improved poultry feed value. Large-seeded sorghum germplasm sources have been identified and these genes are being incorporated into parent lines currently being utilized by Dr. Kapran in the national program. Once improved



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for these traits, these parent lines should have direct application in hybrid cultivar development. In addition, we are developing a technology transfer program to improve the efficiency and productivity of poultry producers using sorghum feed grains in West Africa. Meetings and workshops are being planned to demonstrate best management practices for poultry producers and feed millers. These workshops will also facilitate dialogue between sorghum producers, feed mill operators, and poultry producers.”

Dr. Joe Hancock is a Professor at Kansas State University. Dr. Hancock comments that, “Our research activities for INTSORMIL include chick feeding experiments to determine the metabolizable energy content of sorghums we have selected for variation in seed size. Additionally, we intend to determine the amino acid digestibilities for these cereals. The cereals are characterized chemically with traditional measurements of nutrient content (i.e., proximate components and amino acid concentrations) and with less traditional measurements such as physical dissection into bran, germ, and endosperm. Also, protein fractionations, NIR determinations, and in vitro gas production are used to more completely characterize the cereals and to begin the search for “rapid analysis” procedures to accurately predict feeding value in the whole animal.”



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Dr. Bill Rooney is an Associate Professor in the Department of Soil and Crop Science at Texas A&M University. Dr. Rooney is involved in international research at sites in Central America and Southern Africa. According to Dr. Rooney, “Our sorghum breeding

program emphasizes the development of germplasm, parental lines and varieties with strong agronomic adaptation, disease resistance and grain quality. Within the program, factors influencing grain quality are being researched with specific emphasis on grain mold and weathering resistance. In addition, research on anthracnose resistance is being conducted. The enhancement of productivity is important in our program and we are currently working with molecular geneticists to identify heterotic groups and make sorghum improvement programs more effective. Our program interacts with other INTSORMIL sorghum breeders, utilization experts, pathologists and nutritionists to effectively screen new germplasm for Central America and Southern Africa.”



Dr. Clint Magill is a Professor in the Department of Plant Pathology at Texas A&M University. Dr. Magill notes, “I have an active project with Nigeria and am still working to get a project established in Mali. My research projects involve various aspects of grain mold resistance in sorghum. We are setting up crosses that will allow us to “tag” genes or quantitative trait loci (QTLs) associated with mold resistance for use in marker assisted selection. We are also attempting to identify genes that show differential expression in resistant and susceptible cultivars on exposure to *Curvularia* and *Fusarium*, the fungi most often responsible for grain mold. Another project involves the mapping of resistance-gene analogs in order to determine if they may be involved in grain mold reactions.



Dr. Charles Wortmann is an Assistant Professor in the Department of Agronomy and Horticulture at the University of Nebraska. Dr. Wortmann comments, “Our INTSORMIL research activities currently are in Ethiopia, Uganda and Nebraska while possible collaborative activity in Tanzania is being investigated. The research addresses soil and water management in eastern Africa for small holder sorghum production in semi-arid areas. In Ethiopia, the focus is on tillage systems for water conservation coupled with improved nutrient supply with collaborative effects with Nazareth, Mekele and Sirinka research centers. In Uganda, we are collaborating with Kawanda ARI in the study of the integration of reduced tillage with green manure/cover crops as a means to conserve water, improve nutrient supply, and get greater returns to investment of labor. In Tanzania, we hope to study the adaptation of a new hand tillage system which has been well adopted in Zambia. A study of relevance to all of these countries investigates soil properties affecting phosphorus fixation to improve the basis for estimating P fixation potential and eventually mapping this soil property for the sorghum/millet production areas of eastern Africa. The research in Nebraska addresses: more efficient fertilizer use through the use of starter fertilizer for no-till situations and better estimation of the nitrogen credit gained from rotation with soybean; and the effect of occasional tillage in no-till systems for soil improvement, increased yields and increased carbon sequestration in the soil.”



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Dr. Martha Mamo is an Assistant Professor in the Department of Agronomy and Horticulture at the University of Nebraska. Dr. Mamo is involved in international research with the Ethiopian Agricultural Research Organization (EARO) at Melkassa and Mekele Research Centers and the National Agricultural Research Organization of Uganda, Kampala (Kumi and Pallissa districts). Dr. Mamo notes, "The overall objective of our project is to improve soil fertility water management for grain sorghum production in Ethiopia and Uganda. On-going research in Nebraska includes fine-tuning starter fertilizer use for no-till milo production; verifying nitrogen credit for milo following soybean; improving the understanding of soil properties affecting phosphorus availability; and, assessing the impact of tillage systems on organic matter. In Ethiopia, participatory research with small-scale farmers is addressing the interaction of fertilizer with water conservation techniques. Research is being initiated in Uganda to harness cover crop technology with fertilizer management."



Dr. Jeffrey P. Wilson is a Research Plant Pathologist with the USDA-ARS Crop Genetics and Breeding Research Unit, located at the University of Georgia, Tifton. His INTSORMIL-funded research is being conducted primarily in the West Africa/ West (Mali) and West Africa/East (Niger and Nigeria) regions. The goal of the research is to develop pearl millet germplasm and hybrids with superior yield, grain quality, and disease resistance.



AIARD 39th Annual Meeting

The 39th Annual Meeting of the Association for International Agriculture and Rural Development (AIARD) will be held at the Capital Holiday Inn Hotel, June 1-3, 2003 in Washington, D.C. AIARD is an association of professionals from universities, private voluntary organizations, consulting companies, trade associations, private firms, national and international agencies and foundations in every state in the union. AIARD members have dedicated their careers to alleviating world hunger and advancing international agriculture and rural development. AIARD's mission is to improve the quality of life for all people by improving and developing global capacities to respond to new challenges and opportunities in helping to eliminate poverty, improve food

security, and conserve and protect the environment, in order to stimulate broad-based economic growth and sustainable development. Registration information can be found at <http://aiard.org/>

From time to time, AIARD helps sponsor students attending the AIARD annual meeting. These awards are meant for students who have a sincere interest in international agriculture and rural development issues and their solutions. If a student is interested in attending the annual meeting with AIARD support or knows someone who is, please complete the brief application/nomination form on the web page and submit by e-mail to (odom@agecon.msstate.edu) or fax to 662-325-8777.



The 2002 Annual Report is now available online at <http://intsormil.org/icannrep.htm>

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USAID/OFDA Ethiopia Trip Report

Visit to USAID/OFDA (Office of Foreign Disaster Assistance) – INTSORMIL pilot project on seed production, demonstration, and popularization, of new *Striga*-resistant genotypes in Ethiopia - D.E. Hess, Z. Gutema, H. Traoré, C. Grenier, and A. Ellicott - November 2002

The Purdue University sorghum breeding program houses one of the largest collections of improved sorghum germplasm in the world. The availability of this diverse set of germplasm stock has facilitated investigations into the biology of sorghum-*Striga* interactions. Laboratory procedures developed at Purdue allow selection for *Striga*-resistant sorghum cultivars and characterization of resistant varieties for the specific mechanisms involved. Use of these bioassays has facilitated sorghum breeding for *Striga* resistance and introgression and pyramiding of genes for multiple mechanisms of resistance.

In 1995, the Purdue-INTSORMIL sorghum breeding program released eight sorghum varieties and made them available for wide distribution with assistance provided by USAID/OFDA through World Vision International to 12 countries in sub-Saharan Africa. Adoption and diffusion successes across these countries were, however, variable. Hence, USAID/OFDA recently provided further funding to Purdue to undertake a pilot project in Ethiopia and Eritrea to accelerate seed production and diffusion. This initiative is undertaken through seed multiplication, demonstration and popularization trials involving over six hundred farmers in four regions (Tigray, Amhara, Oromia, and Southern). Among the eight Purdue releases, P9401 and P9403 were officially released in Ethiopia for wide cultivation in the *Striga*-endemic areas of the country. Seed multiplication and demonstration trials integrate water conservation practices and fertilizer use to the improved sorghum variety. Popularization trials are sown and managed by the farmer.

The Purdue team visited only the Amhara and Tigray Regions. Plots in

Oromia (east and south) and Southern Region were not seen as they had already been harvested. In addition to farmers' fields, the Amhara Agricultural Research Institute at Sirinka, and the Tigray Agricultural Research Institute at Mekele, were visited. On-station activities include seed multiplication of *Striga*-resistant lines. On-farm visits were made to seed multiplication, demonstration, and popularization trials, reports of which follow.

Seed Multiplication The lack of a functional seed multiplication and distribution program for sorghum farmers in Ethiopia has been a significant bottleneck. This work is designed to promote a community-based, sustainable seed multiplication effort. Farmers were visited in Kobo and Amba Madre in Amhara. Seventy-one farmers in Amhara region were provided with seed of P9401 and trained to multiply the seed under conditions that will maintain its genetic purity. Plans are for the project to purchase seed from the farmer.

Demonstration Use of a *Striga*-resistant sorghum cultivar in combination with inorganic fertilizer and moisture conservation (tied ridges) can result in better control of *Striga* and increased sorghum yield (Figure A&B).



Figure (A) Local variety 76T23 at Kobo, Ethiopia November 23, 2002



Figure (B) *Striga*-resistant variety P9401 at Kobo, Ethiopia November 23, 2002

This work seeks to promote an integrated approach to *Striga* management (ISM). The resistant variety is sown into plots in which tied ridging conserves water and soil fertility is enhanced through the application of inorganic fertilizer. Ideally the resulting grain would be consumed and not sown, seed for sowing coming preferentially from seed multiplication plots.

Popularization This activity was conducted as a seed relief effort to subsistence farmers affected by the ravages of drought and *Striga*. Seed of improved, *Striga*-resistant varieties is distributed to as many farmers as possible. Farmers could sow the seed and manage the fields as they wished, but were invited to field days to see the beneficial effects of integrating water conservation and enhanced fertilization to the fight against *Striga*.

An Integrated *Striga* Management experiment was designed and conducted on two research stations to explain the contribution of different factors (genotype, fertilizer and moisture conservation) and combinations of factors to integrated *Striga* management. At Kobo, the trial was sown on July 19, 2002. The effects of drought were clearly visible. The local landrace showed high infestation of

S. hermonthica whereas P9401 was quite clean. Fertilizer and tied ridging clearly enhanced sorghum growth and yield.

Summary An excellent effort was made by research and extension staff of the national and regional programs to inform and involve farmers in the pilot project. Once involved, the merits of the extended technology retained the farmers' interest. In addition, many farmers not involved in first-year activities are interested in involvement in the coming year. Farmers expressed the wish for increased interaction with

project staff throughout the course of the cropping season. In the demonstration and popularization trials farmers were particularly attracted to the productivity of P9401 in a drought year. In many fields the superior *Striga* resistance of the variety was very clear. Where this was less evident (e.g., in Sheraro), farmers understood the influence of environment, especially sowing date and rainfall, on *Striga* emergence and were not discouraged. The short stature of the improved variety, not always appreciated, is offset by clear advantages. Where water conservation and fertilization were used,

their contribution to enhanced crop growth and productivity was generally apparent. Overall, seed multiplication trials were placed too close to other sorghum fields, which may influence the quality of seed produced in 2002. Farmers consistently reported high demand for P9401 seed, so high volume of farmer to farmer trade may considerably reduce the amount of seed returning to the project. Farmers indicated that they would be evaluating P9401 for the first time with respect to processing and food quality. However, the results of previous tests by other farmers would suggest good acceptance of the improved variety.

The First National Workshop on Sorghum and Millets Research, Extension and Production in Ethiopia

The Ethiopian sorghum and millets improvement program is one of the more successful and storied national programs in Africa. The program has an impressive cadre of scientists working together in developing technologies for enhancing sorghum production and utilization in the country. The First National Workshop on sorghum and millet research, extension, and production was held, with INTSORMIL support, in Nazaret/Melkassa, Ethiopia, November 12-14, 2002.

The significance of the potential, opportunities and challenges of sorghum and millets production in household food security and poverty reduction in Ethiopia was the main focus of the workshop. The keynote address was given by Dr. Brhane Gebrekidan, considered to be the founder of modern

day sorghum breeding in Ethiopia. Dr. Gebrekidan provided a historical overview of sorghum research in Ethiopia. There were 41 papers presented and poster presentations during the three day meeting which focused on sorghum/millet genetic resources, breeding and genetics, agronomic research, sorghum diseases, insect pests and weeds, utilization and post harvest research, technology transfer options, issues of seed and marketing, socio-economic issues. Inter-institutional collaboration ended in group meetings discussing revision and further development of sorghum and millets research strategies in Ethiopia.

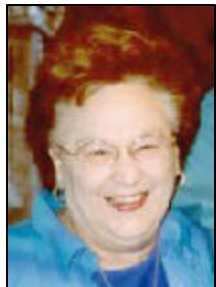
There were participants from the Ethiopian Agricultural Research Organization (EARO), Jimma College of Agriculture, Alemaya University,

Melkassa Research Center, Bako Research Center, Sirinka Research Center, Holetta Agricultural Research Center, the Ministry of Agriculture, SG-2000, Pioneer Hi-Bred International, Inc., the Ethiopian Seed Enterprise, the National Seed Industry, ICRISAT, INTSORMIL, Purdue University, Kansas State University and the University of Pretoria.

The meeting was followed by an on-station field tour of sorghum research at the Melkassa Research Station. The excellent turnout for the conference reflects the importance of sorghum and millet in the Ethiopian agricultural economy and the commitment of EARO and other national organizations in assuring improved food security and natural resource management throughout Ethiopia.

Dottie Stoner Retires

Dorothy (Dottie) Stoner is retiring from the INTSORMIL Management Entity office staff on May 1, 2003, after working with INTSORMIL for 20 years. She has



been a highly respected member of the program and will be remembered with great fondness for her energy, enthusiasm and wit by both U.S. and International PIs, the Board of Directors and her co-workers in the ME. She began as a part-time secretary with Dr. Earl Leng, INTSORMIL's first Program Director. Dottie has worked under both Dr. Glen

Vollmar (former Program Director) and Dr. John Yohe and has contributed to making the program the success it is today.

With her enthusiasm and skills she soon took on a major role within the office as the INTSORMIL Illustrator/Desktop Publishing-Graphic Arts Specialist. Such a long title does not even do justice to the responsibilities she assumed. Dottie knew all the scientists and programs and was part of the "institutional knowledge base" and has been an invaluable source of knowledge about the history of the program. She has played a major role in all the publications that INTSORMIL has issued, working on every detail from start to finish.

We wish her the best in her retirement and will miss her dedication to our program.

The Proceedings of the Global 2000: Sorghum and Pearl Millet Diseases III Conference, held in Guanajuato, Mexico September 24-29, 2000 will be available in April 2003. Dr. John Leslie, Kansas State University, is the editor of the proceedings and has been working with the Iowa State Press towards its publication.

Participants at the conference will receive a complementary copy. If your address has changed, please notify the ME.

Additional copies may be purchased through Iowa State Press (www.iowastatepress.com) Blackwell Scientific, World Agriculture Series. Estimated price is \$115.00. If you or your institution want to make a bulk purchase of books, the ME can provide contact information for you.

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