

July – September 2009

Recent publications

Muhammed, L., D. Mwabu, W. Mwangi, and R. la Rovere. 2009. Community assessment of drought tolerant maize for Africa (DTMA) in Kenya. Nairobi: CIMMYT.

More information: **Roberto la Rovere** (r.larovere@cgiar.org) and **Lutta Mohammed** (luttam2002@yahoo.com)

Setimela, P.S., B. Badu-Apraku, and W. Mwangi. 2009. Variety testing and release approaches in DTMA project countries in sub-Saharan Africa. Harare: CIMMYT.

More information: **Peter Setimela** (p.setimela@cgiar.org)

MacRobert, J.F. 2009. Seed Business Management in Africa. Harare: CIMMYT.

More information: **John MacRobert** (j.macrobert@cgiar.org)

Langyintou, A., W. Mwangi, A. Diallo, J. MacRobert, J. Dixon, and M. Bänziger. 2009. An analysis of the challenges of the maize seed industry in eastern and southern Africa. Presented at the 27th Conference of the International Association of Agricultural Economists (IAAE). Beijing, China, 16–22 August 2009.

More information: **Wilfred Mwangi** (w.mwangi@cgiar.org)

Getachew, L.F., A. Langyintou, W. Mwangi, M. Jaleta, and R. la Rovere. 2009. Household resource endowment and determinants of adoption of drought tolerant maize varieties: A double-hurdle approach. Presented at the 27th Conference of the International Association of Agricultural Economists (IAAE). Beijing, China, 16–22 August 2009.

More information: **Wilfred Mwangi** (w.mwangi@cgiar.org)

MacRobert, J.F. 2009. Key considerations for seed company establishment and management in Africa. Presented at African Crop Science Society Conference. Cape Town, South Africa, 28 September –1 October 2009.

More information: **John MacRobert** (j.macrobert@cgiar.org)

Setimela, P.S., B. Badu-Apraku, and W. Mwangi. 2009. Impediments to new improved maize variety testing and release in selected countries in sub-Saharan Africa. Presented at African Crop Science Society Conference. Cape Town, South Africa, 28 September –1 October 2009.

More information: **Peter Setimela** (p.setimela@cgiar.org)

Warburton, M.L., P.S. Setimela, J. Franco, H. Cordova, K. Pixley, M. Bänziger, S. Dreisigacker, C. Bedoya and J. MacRobert. 2009. The fingerprint police: a cost-effective laboratory assay to verify the identification of open pollinated varieties. Presented at African Crop Science Society Conference. Cape Town, South Africa, 28 September –1 October 2009

More information: **Peter Setimela** (p.setimela@cgiar.org)

Key Events

- Evaluation of funded activities under the eastern and central Africa Maize Working Group Tanzania (19–25 July 2009) and Uganda (23–25 July 2009)
- Collaborators' meeting and Regional Steering Committee meeting for southern Africa Lusaka, Zambia; 4–7 August 2009
- DTMA Annual Planning Meeting: Masvingo, Zimbabwe; 14–18 September 2009
- AGRA/Program for Africa's Seed Systems (PASS) Grantees' Meeting: The March Toward a Green Revolution in Africa Bamako, Mali; 5–8 October 2009
- B&MGF Grantee Communications Training: New York City, New York, USA; 21–23 October 2009
- DTMA West Africa Regional Policy Workshop: Abuja, Nigeria; 29 October 2009

Presidential approval for new drought-tolerant maize seed in Malawi

In September 2009, the ZM 309 drought tolerant maize variety was officially approved by President Bingu wa Mutharika. "The new maize variety, ZM 309, released under the auspices of the DTMA Project, will give Malawi farmers an advantage because it is high yielding and drought tolerant," said the President. He welcomed the initiative, saying it would help Malawi cope with climate change and improve food security. ZM 309 has been earmarked for inclusion in the national farm input subsidy program. The maize will be planted this October by farmers in the most drought-prone areas. A 10-ton consignment of the seed was delivered to President wa Mutharika, by CIMMYT's Wilfred Mwangi, project leader of Drought Tolerant Maize for Africa (DTMA), and Peter Setimela, maize breeder, at the State House in Lilongwe.

More: <http://blog.cimmyt.org/?p=2074>



DTMA Project urged to "make Africa the bread basket of the world"

Speaking in September, during the third annual planning meeting of the DTMA Project, Tom Lumpkin, CIMMYT Director General, urged project teams and national collaborators to be passionate about developing and delivering improved maize varieties to farmers, especially by linking up with seed companies. Lumpkin emphasized the need for climate-ready maize that will respond to the needs of smallholder farmers' mixed cropping systems in sub-Saharan Africa (SSA).

"Today, we're here working on a noble project to develop drought tolerant varieties that will change the lives of the poor. Let us be more than just scientists, let us be champions!" he said. "Let us make Africa the bread basket of the world. In this way we will honor the late Dr Norman Borlaug." Borlaug, who passed away on 12 September 2009 was a 1970 Nobel Peace Prize Laureate and was considered the world's leading hunger fighter.

(<http://www.cimmyt.org/english/wps/media/farewellBorlaug.htm>)

The DTMA Project teams, together with collaborators from national agricultural research systems (NARS), seed companies and universities, were meeting at Masvingo, in Zimbabwe to review progress made in 2009, share insights and plan for 2010. The teams were also joined by senior government officials from Zimbabwe, the project Advisory Board, consultant and David Bergvinson, Senior Program Officer, Bill & Melinda Gates Foundation. The Zimbabwean officials were Dr S. Mlambo, former Permanent Secretary of Ministry of Agriculture, Mechanization, Irrigation Development, and Dr N.R. Gata, Principal Director Department of Research and Specialist Services.

In their remarks, they confirmed their government's recognition and support for the DTMA project's work on mitigating drought. They thanked CIMMYT-IITA and the Foundation for continued support through capacity building of national scientists and improvement of research facilities, especially at Chiredzi, one of the project's drought screening sites.

"The Zimbabwe government will collaborate with the DTMA Project to ensure that the developed maize varieties reach intended regional users, by removing import-export restrictions to increase the availability and movement of these developed varieties," said Dr Mlambo.

Zimbabwe and Malawi win DTMA excellence awards

The DTMA excellence awards for southern Africa were won by Zimbabwe and Malawi. The national maize team in Malawi received the award for technology development and dissemination, while the prize for breeding went to the Zimbabwe national maize program. The awards were made to the winning teams by Tom Lumpkin, CIMMYT Director General in September, in their respective countries. The Zimbabwe team was selected for effectively developing maize varieties that will be used for the

benefit of Zimbabwean farmers and their counterparts within the region, who have started feeling the effects of recent recurrent droughts and climate change. "I congratulate the national maize program for winning this award while working under difficult economic circumstances, and for putting Zimbabwe's research on the global map," said Dr S. Mlambo. In Malawi, the national team effectively promoted two new drought tolerant maize varieties (ZM 309 and ZM 523) among farmers, who have accepted them, giving them local names and pushing for the inclusion of ZM 309 ('Msunga banja' – that which feeds the family) in the national farm input subsidy program.

Climate-ready maize for Ethiopian and Ugandan farmers

In Melkassa, a drought-prone area in Ethiopia, rainfall patterns are changing and amounts gradually decreasing. The region is currently experiencing one of its worst droughts in recent years, with the rains coming in late May instead of early April. This gives farmers a short window (late May to mid-June) in which to plant their maize, therefore adapted varieties are needed. Between 2000 and 2008, seven drought tolerant maize varieties named 'Melkassa' were developed jointly by CIMMYT and the Ethiopian Institute of

Agricultural Research (EIAR). This was specifically done for Melkassa and other similar drought-prone areas in Ethiopia. More than 20,000 maize farmers are now growing new earlier-maturing maize varieties with better yields and drought tolerance. "Planting the local (Habesha) varieties was frustrating because the crop always failed. With the new Melkassa -2 variety, it is fitting in with the rain patterns," said Demena Bunu, a local farmer, in August this year. In Uganda, which also experienced severe drought this year, three new drought tolerant hybrids have been released – Ege 9H, Longe 10H and Longe 11H.

Fete for retired DTMA maize breeder



Alpha Diallo, a former CIMMYT maize breeder, who also worked within the DTMA Project, was honored at a maize fair held in Embu, Kenya in September 2009. The fair was organized by DTMA collaborator, the Kenya Agricultural Research Institute (KARI). Diallo worked with CIMMYT for a total of 25 years, 11 of which were spent at CIMMYT-Kenya, before his retirement at the end of 2008. He was recognized for his contribution to maize improvement and capacity building in Kenya, and for his mentorship of KARI maize breeders. Diallo developed several maize varieties suitable for the wet and dry mid-altitudes of Kenya, which are currently being marketed by seed companies. Diallo's work formed part of the DTMA Initiative. More: <http://blog.cimmyt.org/?p=2191>



'Fast-tracking' DT maize variety development

In 2009, progress has been made in developing and evaluating drought tolerant varieties in collaboration with project partners across main sites in Kenya, Mexico, Nigeria and Zimbabwe. To 'fast-track' the process of identifying and providing good sources of drought tolerant maize, to national partners, the project is using modern breeding approaches available such as the double haploid technology and also combining with breeding for disease resistance (mainly to maize streak virus). The double haploid technology involves the crossing of normal maize and 'inducer' lines. This approach has the potential of producing hybrids in only two generations—about one year, instead of the conventional seven or more generations (at least three years) (<http://www.cimmyt.org/english/wps/news/2008/may/doubledHaploids.htm>). Between September 08 and September 09, the first set of double haploids developed in Mexico were planted in Zimbabwe for evaluation. Seed from these trials is being sent to breeders in Kenya and Zimbabwe for further testing.

Going hand in hand with these breeding innovations, electronic data capture in the field and bar-coding have accelerated the rate of data analysis and turn-around. The result? Data entry errors are reduced and breeding decisions can now be made earlier.

Running successful seed businesses in Africa

Having an effective and functional seed system in Africa will be key to ensuring that developed improved maize varieties, including DT ones reach target farmers. At the heart of this is providing technical support to both emerging and established seed enterprises, to ensure they run successfully. Between June and November 2008, the DTMA project held a four-module Seed Business Management Course,

targeting senior to middle level managers of such seed companies from 15 countries in Africa. Drawing trainers from successful local and international institutes, seed companies and businesses, the course covered all aspects of successfully running a profitable seed enterprise. This course had four modules. Module 1 was an introduction to seed business management and strategic planning; module 2 covered product development and seed production management. In module 3, participants learnt the technicalities of seed conditioning, quality, marketing and seed legislation, while module 4 dealt with the financial management of a seed business. One year on, this is what two of the participants had to say of the course:

John Klooper, area manager of Capstone Seeds (South Africa) found the course to be "...very well designed and useful." He recommended the course, saying, "Every seed business manager should avail themselves of the opportunity to learn from experts in the business." Ibrahim Abdullahi, the Managing Director of Maslaha Seeds, Nigeria, thought the course was "fantastic!" The course had a positive impact on him, and he now has a better understanding of budgeting and cash flow management. He shared what he had learnt in the financial module

with his accounting unit, and was proud to say, "Now I can leave the company with confidence and attend to other matters, without (fear of) the company collapsing."

In short, the training was a worthwhile and eye-opening endeavor. It also opened up business opportunities, and the participants can now engage in friendly competition with each other. To complement this training, CDs of the training and a reference manual – Seed Business Management in Africa, by John MacRobert – have been produced and will be shared with participants and others interested in refreshing their knowledge.

Reviewing variety testing and release approaches in Africa—the DTMA experience

Lengthy and complicated variety release procedures in most SSA countries prevent seed companies from registering new varieties and producing certified seed, seed much-needed by farmers to increase their crop productivity. Both farmers and seed companies lose out on potential income. A recent CIMMYT-IITA study on Variety Testing and Release Approaches in DTMA Project Countries in sub-Saharan Africa identifies the factors blocking speedy variety release and makes recommendations on how these can be resolved.



Among the constraints identified were large number of traits for Distinct Uniform Stable (DUS) and Value for Cultivation and Use (VCU) that are time-consuming, costly and add little value. Poor quality data for DUS and VCU tests coupled with lack of enough qualified personnel to conduct these tests also further delayed the process. Other key findings were that in some countries there were no functional national varietal release committees, and where these were in existence, they lacked funding to carry out DUS and VCU tests and hold regular meetings to review variety release proposals. A slow implementation of regional variety release systems, means that varieties approved for release in one country within a regional bloc still have to be evaluated and approved for release in a different country within the same bloc – this is both time-consuming and an extra expense.

What recommendations does the study make?

The use of data from other countries and breeders' own data should be promoted to reduce the time (and resources) spent on collecting data for VRC meetings. Regional variety release systems should be developed and promoted. Regional harmonization of seed laws will ensure that these laws are clearly understood and consistently interpreted across

all countries. Simplifying variety testing by reducing the number of traits for DUS and VCU; increasing the frequency of national varietal release committees meetings and providing more government funds to support these meetings will all go a long way to accelerating the pace of variety releases.

Insights from community survey reports

A report on a community survey carried out in eastern Kenya has been published and will be posted on the DTMA website. Similar surveys have been carried out in eight other DTMA project countries. The studies provide information on key DTMA indicators such as adoption rates for maize varieties in different areas, as well as critical household and area characteristics including relative riskiness and profitability of maize, drought-risk coping strategies used by farmer and general livelihood strategies.

DTMA software updates

New software updates are **MaizeFinder database v.Sep2009, and MaizeFinder application v.8.3. MaizeFinder database v.Sep2009** gives adjusted means updated from 1993 to 2008, and also a summary of experiments by breeding program and year, while downloading **MaizeFinder application v.8.3.** will install the latest version of **MaizeFinder**, without the database.

DTMA in the news

New seed varieties in subsidy program
Kingsley Jassi, *The Guardian*, 4 September 2009, Malawi

Drought resistant maize variety unveiled
Kondwani Muthali, *The Nation*, 4 September 2009, Malawi

Drought tolerant maize varieties witnessed tremendous positive outcome in Ethiopia
Ethiopian News Agency (ENA), 29 August 2009
<http://www.ena.gov.et/EnglishNews/2009/Aug/29Aug09/95667.htm>

DTMA Project witnesses remarkable achievements
The Ethiopian Herald, Ethiopian News Agency (ENA) 31 August 2009
http://dtma.cimmyt.org/index.php/documents/doc_view/81-dtma-news-aug-09-the-ethiopian-herald?tmpl=component&format=raw

Drought Tolerant Maize for the Hungry
Islam Online - Doha, Qatar, Government of Ethiopia Melkasa, (Addis Ababa)
http://www.islamonline.net/servlet/Satellite?c=Article_C&cid=1251021285282&pagename=Zone-English-Youth%2FYTELayout#

The Drought Tolerant Maize for Africa (DTMA) Project is being implemented jointly by CIMMYT and the IITA, and is funded by the Bill & Melinda Gates Foundation and the Howard G. Buffet Foundation. The project is part of a broad partnership also involving national agricultural research and extension systems, seed companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and advanced research institutes, known as the Drought Tolerant Maize for Africa (DTMA) Initiative. Its activities build on longer-term support by other donors, including the Swiss Agency for Development and Cooperation (SDC), the German Federal Ministry for Economic Cooperation and Development (BMZ), the International Fund for Agricultural Development (IFAD), and the Eiselen Foundation. The project aims to develop and disseminate drought tolerant, high-yielding, locally-adapted maize varieties and to reach 30-40 million people in sub-Saharan Africa with these varieties in 10 years.

Drought-Tolerant Maize for Africa (DTMA) Project

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