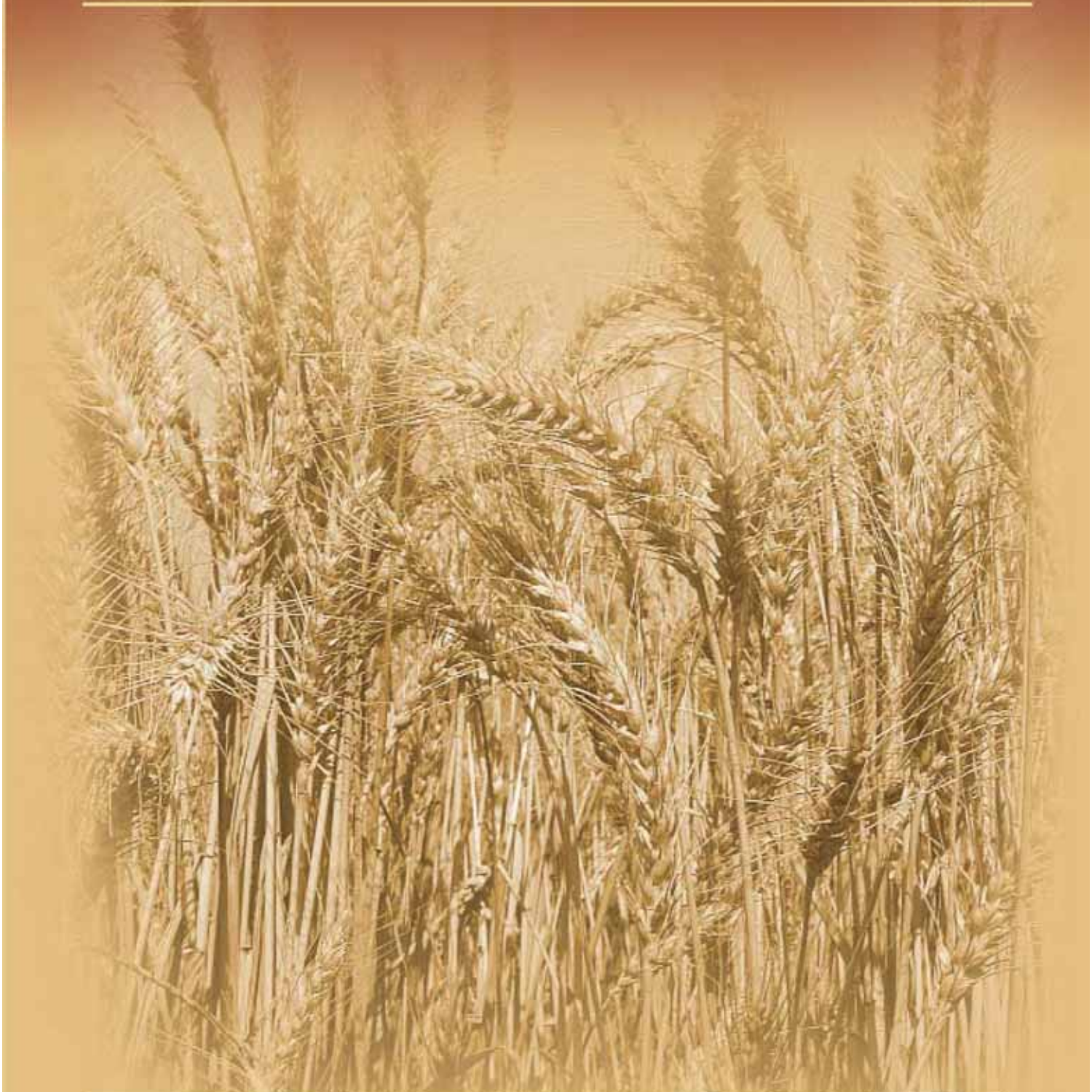
SEED INFO

Official Newsletter of the WANA Seed Network

Seed Info No. 44 January 2013



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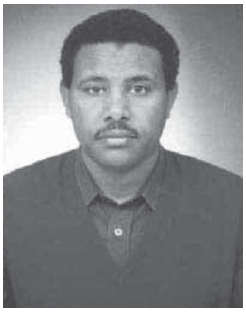
EDITORIAL NOTE



Seed Info aims to stimulate information exchange and regular communication among seed staff in the Central and West Asia and North Africa (CWANA) region and beyond. Its purpose is to help strengthen national seed programs and thus improve the supply of high quality seed to farmers.

The WANA Seed Network provides information on activities relating to global and/or regional cooperation and collaboration to facilitate the development of a vibrant regional seed industry. In this issue of *Seed Info*, we highlight the 4th Seed Trade Conference of the Economic Cooperation Organization's Regional Seed Association (ECOSA) held from 11 to 13 January 2012 in Istanbul, Turkey. We also continue to report on seed courses conducted by the Seed Section of the International Center for Agricultural Research in the Dry Areas (ICARDA). From the outset, to meet the increasing and diverse needs of national seed programs, the Seed Section has adopted a 'train-the-trainers' approach. In so doing, primary courses held at ICARDA headquarters lead to follow-up courses organized in country by national seed programs. The Seed Section therefore continues to strengthen human resource development within the region.

In the **NEWS AND VIEWS** section, Niels Louwaars from the Dutch Seed Association, Plantum, presents an article entitled *Developments in Patenting of Plants in Europe*. The article highlights contemporary views from Europe on plant breeders' rights and the patent system. Plant breeders' rights have effectively supported breeders and protected plant varieties from being illegally reproduced. These rights give breeders a fair chance to capture some financial return to further invest in breeding, while keeping the varieties open for use in further breeding by others. With the development of plant biotechnology, the patent system entered the sphere of plant breeding, initially in the USA and then 14 years ago in Europe. The patent system provides a much stronger right to the holder since plant breeders' rights have exemptions for farmers (the right to re-use seed under certain conditions and limitations) and for breeders (the right to freely use protected varieties for further breeding). However, the EU experience shows that the patent system is not set in stone. With some creativity, based on solid policy objectives, openings can be made within the law to limit the negative effects of the patent system on plant breeders and seed business. Other news in this section comes from regional and/or international organizations, such as the Food and Agriculture Organization (FAO) of the United Nations, the International Seed Testing Association (ISTA), the International Union for the Protection of New Varieties of Plants (UPOV) and the International Fund for Agricultural Development (IFAD).

The section on **SEED PROGRAMS** includes news from Egypt, Ethiopia, Lebanon and India. The report covers a biosafety workshop organized by the Egyptian Biotechnology Information Center and Egypt's Ministry of Environment, and the Ethiopian launch of the Integrated Seed Sector Development (ISSD) project by the Centre for Development Innovation, Wageningen UR. The news from Lebanon is the recent revival of cereal seed production, an undertaking of the country's Ministry of Agriculture. In October 2012, the ministry announced the availability of more than 4000 tonnes of certified wheat seed and 600 tonnes of certified barley seed for distribution to farmers at competitive prices. The International Center for Agricultural Research in the Dry Areas provided technical training and 15 tonnes of foundation seed, comprising 13 varieties of wheat, barley, chickpea and lentil.

The **RESEARCH** section of Seed Info captures information on adaptive research or issues relevant to developing seed programs in the CWANA region and beyond. This issue features an article entitled *Participatory Varietal Selection of Malt Barley (Hordeum vulgare L.)* in Ethiopia by Yetsedaw Aynewa et al. from the Bahir Dar University, Ethiopia. This paper discusses participatory variety selection for yield and yield components in northwestern Ethiopia.

Seed Info encourages the exchange of information between the national, regional, and global seed industries. We encourage our readers to share their views and news through this newsletter. Your contributions, in Arabic, English, or French, are most welcome.

Happy New Year

Zewdie Bishaw, Editor

WANA SEED NETWORK NEWS

This section presents information on the WANA Seed Network, including network activities and reports from meetings of the Steering Committee and the WANA Seed Council.

ECOSA Organizes Regional Seed Conference

The Economic Cooperation Organization's Regional Seed Association aims to promote seed trade in the ECO region and to integrate this into the global seed industry. To realize its aim, the association has organized a regional seed trade conference annually since 2009. It has done this with help and collaboration from the ECO Secretariat, FAO, ICARDA, the International Seed Federation, the Organization for Economic Co-operation and Development, ISTA, UPOV, the Turkish Seed Union and the Turkish Ministry of Food, Agriculture and Livestock. The fourth conference took place alongside the Turkish Seed Fair from 11 to 13 January 2013 in Istanbul, Turkey. The seed trade conferences aim to explore and promote seed trade within the ECO region and beyond. The ECO region encompasses 10 member countries (Afghanistan, Azerbaijan, Kazakhstan, Kirgizstan, Iran, Pakistan, Uzbekistan, Tajikistan, Turkmenistan and Turkey) with an area of 800 million ha and a population of more than 350 million. It contains a rich variety of agro-climatic conditions suitable for agricultural and horticultural crop and livestock production. Agriculture has a significant share in the GDP of the ECO countries, ranging from 11% to 50% and employing 39% of the economically active population. There is great potential for agricultural expansion and diversification bringing opportunities for the seed sector.

The latest ECOSA conference provided a forum to promote regional seed trade among seed companies within and outside the region, and to share experiences among stakeholders of the seed industry. Conference participants came from the private sector (seed companies, agricultural input suppliers, and seed equipment manufacturers), the public sector, international, regional and national seed trade associations and international development organizations working on seeds.

While the focus of the conference was on seed trade, the program included seed-related technical workshops on the following main themes:

- Organization of regional and global seed industries and their importance in seed trade;
- International environments of relevance to the ECO region;
- Seed quality standards in global seed trade;
- Status of the seed sector in the ECO region; and
- Opportunities in seed trade in the ECO region.

The experiences shared showed that ECOSA regional seed trade conferences have contributed towards improvements in the seed sector of the ECO region. As a result, there are many companies and organizations showing interest in the conferences as a means to finding new partners in a region which was not explored for seed trade before. It is the duty of ECOSA, as a key player in the global seed sector, to help countries in the ECO region, enter fully into a globally integrated regional seed sector.

For more information contact: Mete Komeagac, ECOSA, Adakale Sokak 2212/ Kızılay, Ankara, Turkey; Tel: +903124333065; Fax: +904333006-312-; E-mail: mete@akdeniztohum.com

ICARDA Organizes Seed Courses

Regional course on seed marketing in Egypt

The formal public and private seed sectors are highly centralized and geared towards high input agriculture and better off farmers. This situation means that resource-poor farmers, particularly in remote areas, find it hard to access good quality seed of improved varieties. This, in turn, limits the return on investments in agricultural research in the country.

In order to reach out to resource-poor farmers in vast areas of low-input agricultural areas, seed production and supply needs to be decentralized. This would make good quality seed of desirable and locally adapted varieties available at the right time and place, and at a price that farmers can afford and are willing to pay. One way of doing this is to develop small-scale seed enterprises managed by pioneer farmers. To address this critical gap, ICARDA is promoting village-based seed enterprise (VBSEs) in all its research for development projects and is implementing it in partnership with national seed programs. A corner stone of the VBSE program is to strengthen human resources through technical backstopping

and train-the-trainer courses followed up by in-country courses in the seed business.

However, the necessary technical and managerial capacity of seed businesses is severely limited in many developing countries. To this end, ICARDA organized a regional course on seed marketing. The course focused on the in-depth analysis of current theories and practices in business planning, seed demand assessment, profitability analysis, seed marketing and promotion. The recent seed marketing course consisted of an in-class lectures, case studies and practical exercises covering the organization and management of small seed enterprises with focus on marketing and promotion.

Sixteen participants (18.8% women) from four countries, namely; Yemen (5), Palestine (2), Pakistan (3), and Ethiopia (6) attended the course. The course was funded through the Rainfed Agriculture and Livestock Project supported by the World Bank in Yemen; the Wheat Productivity Enhancement Program supported by the United States Agency for International Development (USAID) in Pakistan; the Rapid Deployment of Rust Resistant Varieties project supported by USAID in Ethiopia; and the Development of Community-Based Informal Seed Production Enterprises supported by the Dutch Government in the Palestine National Authority.

Participants of the seed marketing course, Cairo, Egypt

Abdoul Aziz Niane, ICARDA, Beirut, Lebanon; E-mail: a.niane@cgiar.org

In-country course on legume seed production in Ethiopia

Under USAID's Africa Rising in Highlands of Ethiopia Program, ICARDA is implementing the project 'Improving Productivity and Rural Livelihoods of Smallholder Farmers in the Bale Highlands of Ethiopia'. The project focuses on popularizing and demonstrating newly released varieties of faba bean, chickpea, lentil, and grass pea involving farmers in alternative methods of seed production and strengthening the capacity of partner institutions.

The International Center for Agricultural Research in the Dry Areas distributed the seed of legume varieties for demonstration and seed production to 10 peasant associations in five districts of Bale Zone during 2012n crop season. Then, in collaboration with the Sinana Agricultural Research Center (SARC) of the Oromia Agricultural Research Institute, ICARDA organized a course on legume seed production and quality assurance from 30 to 31 October 2012 in Goba, Bale. The course covered seed system components and functions, seed quality components and measurements, seed production principles and techniques and alternative approaches in seed delivery for small-scale farmers. In addition, staff from Farm Africa presented lectures on participatory research approaches and tools.

Thirty extension and development agents (17% women participants), Heads of Bureau of Agriculture from five districts, and 10 agricultural research staff (breeders and agronomists) from different research teams in SARC attended the two-day course.

Participants of the legume seed production course, Bale Zone, Ethiopia

Tadelle Tadesse, SARC, Sinana, Bale; E-mail: tadyeko20@gmail.com; and Zewdie Bishaw, ICARDA, Addis Ababa, Ethiopia; E-mail: z.bishaw@cgiar.org

NEWS AND VIEWS

News, views, and suggestions relating to the seed industry are included in this section, which is a forum for discussion among seed sector professionals.

Developments in Patenting of Plants in Europe

Plant breeders' rights (plant variety protection) have effectively supported breeders for almost half a century. They have protected plant varieties from being illegally reproduced, thus giving breeders a fair chance to capture some financial return to further invest in breeding, while keeping the varieties open for use in further breeding activities by others. With the development of plant biotechnology, the patent system entered the sphere of plant breeding initially in the USA and then 14 years ago in Europe. Many countries resist the patenting of plants, an opportunity that the World Trade Organization Agreement on Trade-related Aspects of Intellectual Property Rights explicitly provides. The patent system provides a much stronger right to the holder since Plant Breeder's Rights have exemptions for farmers (the right to re-use seed, even though under certain conditions and limitations) and breeders (the right to freely use protected varieties for further breeding).

However, countries that do provide patent protection on genes or plant biotechnologies do provide exemptions at different levels. In 1988, the European Union (EU) had already regulated that plant varieties are not patentable, and that farmers have the right to re-use seed that contains a patented component where this is also possible under plant breeders' rights. More recently, discussions have started on providing a breeder›s exemption in patent laws. France, Germany and Switzerland introduced such clauses in their national patent laws several years ago; a similar proposal is in parliament in the Netherlands at this moment. This proposal is a 'limited breeders' exemption' allowing breeders to freely use patent-protected materials in further breeding, with the limitation that if the variety produced contains the patented component, breeders must get a license before commercializing seeds of that variety.

The Dutch Seed Association (Plantum) considers this exemption a first step in resolving a serious problem for the future of plant breeding. An important recent development is that such clause is also entered in a multilateral agreement supporting a new 'unitary patent' system in the European Union. Such developments are in line with the view on intellectual property rights that the International Seed Federation (representing the global seed industry) agreed upon earlier this year: that a better balance should be sought between patents and breeders' rights. It is unfortunate that few countries have initiated steps to create a limited or full breeders' exemption in their national patent laws.

Another development in Europe is the decision by patent judges that breeding methods cannot be patented when they consist of conventional crossing and selection, even when they use marker-assisted selection techniques or other molecular techniques to improve selection. Only innovative methods that are directly impacting the genome may be granted a patent. Currently, a case is on the desk of patent judges to assess whether the plants developed by such ‹essentially biological methods› can be patented. A negative decision in that case would mean that 'native traits' would not be patentable in Europe any more.

Seed specialists commonly have good knowledge of their national seed laws and, in many cases, of the protection that plant breeders' rights provide. Unfortunately, few seed specialists have sufficient knowledge of the patent system in their countries, and may not realize to what extent patents – not only on genetically modified (GM) organisms but also on conventionally developed traits – can affect the seed sector. In many countries, there is debate about balancing breeders' rights and farmers' rights. Strong patents provide no scope at all for farmers› rights and may collide with breeders' rights as well. However, the EU measures show that the patent system is not cast in stone, and that with some creativity, and based on solid policy objectives, openings can be made in patent laws to limit the negative effects of the patent system for plant breeding and seed business.

Niels P. Louwaars, Plantum, The Dutch Seed Association, Rotterdam, The Netherlands; E-mail: niels.louwaars@wur.nl

FAO Submits Draft Seed Policy Document to Intergovernmental Working Group on PGRFA

The Plant Production and Protection Division of FAO has focused attention on national policies that can provide a favorable climate for new seed companies entering the seed sector, leading to a more diverse seed supply system for farmers. In March 2011, an expert consultation meeting on seed policy was held in Milan, Italy to gather relevant experiences and prepare a guideline for governments on the formulation and implementation of such policy (see Seed Info No. 41, July 2011). Subsequent follow-up regional workshops took place in West Africa and Central and West Asia (see Seed Info No. 42, January 2012). These workshops have resulted in a draft document on seed policy that was submitted to the Intergovernmental Working Group on Plant Genetic Resources for Food and Agriculture (PGFRA) on 14 November 2012. Working group members will review the document and finalize it for presentation to the Commission on Genetic Resources for Food and Agriculture in April 2013.

ISTA Signs Memorandum of Collaboration with Royal Botanic Gardens

The Royal Botanic Gardens, Kew (RBG Kew) and the International Seed Testing Association have signed a memorandum of collaboration which will enhance the commitment of these non-profit making organizations to the maintenance and improvement of seed quality for research, agriculture and forestry and for restoration and re-introduction.

The focus of RBG Kew's Millennium Seed Bank Partnership (MSBP) and its global network is the long-term conservation and use of seeds from wild plants, crop relatives and forestry species. Within this framework, evaluation and maintenance of seed quality is essential. Members of ISTA are committed to developing and establishing standard methods for sampling seeds and testing seed quality, accrediting seed testing laboratories and promoting research in all aspects of seed science and technology.

Close relationships between the two organizations have existed for a number of years. Kew staff members have participated on ISTA technical committees and have made presentations at ISTA seed symposia. Likewise, ISTA members have contributed to Kew research programs. The signing of the memorandum of collaboration will encourage greater communication and exchange of information, and collaboration between RBG Kew and its international partners and ISTA member laboratories. There will be particular interest in developing seed testing procedures and methods for wild plant species not currently covered by ISTA rules. These include crop relatives and forestry species that will contribute to the maintenance of food security and plant diversity in the future.

News from the International Convention for the Protection of New Varieties of Plants

Accession to the 1991 Act by Panama and Serbia

Panama deposited its instrument of accession to the 1991 Act of the International Convention for the Protection of New Varieties of Plants on 22 October 2012, and became bound by the 1991 Act on 22 November 2012

Serbia has deposited its instrument of accession to the UPOV Convention and will become the seventy-first member of the International Union for the Protection of New Varieties of Plants on 5 January 2013 (see UPOV membership at http://upov.int/ members/en/index.html).

Council decisions on plant breeders' bills in Ghana and Tanzania

Ghana: The UPOV Council at its forty-sixth ordinary session, held in Geneva on 1 November 2012, decided that the Plant Breeders' Bill of Ghana, subject to certain modifications, was in conformity with the provisions of the 1991 Act of the UPOV Convention. Once the relevant law, on which the conformity was decided, is in force, Ghana will be in a position to deposit its instrument of accession to the 1991 Act of the UPOV Convention.

Tanzania: The UPOV Council at its forty-sixth ordinary session, held in Geneva on 1 November 2012, decided that the Plant Breeders' Rights Bill of Mainland Tanzania (United Republic of Tanzania), subject to certain modifications, was in conformity with the provisions of the 1991 Act of the UPOV Convention. The UPOV Council noted that the Government of Tanzania (GoT) intended to submit, at a later stage, the draft law or adopted law for Zanzibar for examination by the Council. The UPOV Council informed the GoT that its

instrument of accession may be deposited after positive decisions by the council on the laws for Mainland Tanzania and Zanzibar.

Participation of UPOV in ITPGRFA platform

Members of UPOV approved participation in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) platform for the codevelopment and transfer of technologies.

Cooperation in examination of new plant varieties

In 2012, the number of plant genera and species for which members of UPOV agreed to cooperate in the examination of distinctness, uniformity and stability totaled 1,991, compared to 1,990 in 2011. Although the total number of genera and species did not significantly increase, there were a significant number of new agreements for cooperation within those genera and species.

Election of president and vice-president of the UPOV Council

The UPOV Council, at its forty-sixth ordinary session, held in Geneva on 1 November 2012, elected, in each case for a term of three years ending with the forty-ninth ordinary session of the UPOV Council in 2015:

- Ms Kitisri Sukhapinda (United States of America), President of the Council
- Mr Luis Salaices (Spain), Vice-President of the Council

Adoption of information and guidance documents

The documents adopted by the UPOV Council at its forty-sixth ordinary session, held in Geneva on 1 November 2012, included:

a. Document UPOV/INF/191/: *Rules governing the granting of observer status to States, intergovernmental organizations and international non-governmental organizations in UPOV bodies (Revision)*
b. Document UPOV/INF/201/: *Rules governing access to UPOV documents (Revision)*

Symposium on benefits of PVP for farmers and growers

A symposium on plant variety protection (PVP) took place on 2 November 2012 in Geneva, Switzerland. The aim of the symposium was to provide illustrations of how PVP can improve incomes for farmers and growers by supporting the development and supply of new, improved varieties that are suited to their needs. The symposium also provided examples of how farmers and growers can use plant variety protection as breeders. A video of the symposium is available on the website at http://www.upov.int/news/en/symposium_2012_video.html and the presentation at http://www.upov.int/meetings/en/details.jsp?meeting_id=26104.

The International Union for the Protection of New Varieties of Plants is an intergovernmental organization based in Geneva. For further information please contact: UPOV Secretariat, 4, Chemin des Colombettes, CH-1211 Genève 20; Tel: +413389111-22-; Fax: +41-22-7330336; E-mail: upov.mail@upov.int; Website: http://www.upov.int

IFAD's New Program Aims at Smallholder Farmers› Adaptation to Climate Change

The International Fund for Agricultural Development has launched a new project that aims to support small-scale farmers in building resilience amid the threat of climate change. The project, dubbed as the Adaptation for Smallholder Agriculture Program (ASAP) represents a renewed, concerted effort to tackle climate risk issues in rural development. In the coming years, ASAP will channel grant co-financing into climate-smart investments in poor smallholder communities around the world.

Among the approaches the program will tap into mixed crop and livestock systems usjng drought-tolerant crops and manure to increase productivity; crop rotation comprising both food and fodder crops to reduce exposure to climate threats; and combining agroforestry systems and communal ponds to improve the quality of soils, increase water availability during dry periods. The Adaptation for Smallholder Agriculture Program will also empower community-based organizations to make use of new and relevant management skills, information and technologies for mitigating climate risk.

For more information on ASAP, please visit the website at http://www.ifad.org/climate/asap/smallscale.htm

Conference on Wheat for Food Security in Africa

Wheat is one of the main staple crops in the world and provides 20% of daily protein and calories.

It is the second most important food crop in the developing world after rice. In past decades, levels of wheat production have not satisfied demand, triggering price instability and hunger riots. With an expected world population of 9 billion in 2050, wheat demand is expected to increase by 70%. To meet the extra demand, annual wheat yield increases must grow from the current level of below 1% to at least 1.7%.

In Africa, urbanization and dietary changes due to income growth are fuelling wheat consumption across the continent. The crop now accounts for 30% of the continent's cereal calories and 15% of all food calorie supplies. Unfortunately, producers can only meet 30–40% of domestic demand; between 2007 and 2009 (latest figures), Africa imported 31 million tonnes of wheat at a cost of 10 billion USD. Recognizing this dependency and the potential threats to food security, the International Maize and Wheat Improvement Center, the International Food Policy Research Institute and ICARDA in collaboration with the Ethiopian Institute for Agricultural Research organized the conference Wheat for Food Security in Africa, held from 12 to 18 October 2012 in Addis Ababa, Ethiopia. The conference brought together more than 220 participants from national, regional and international organizations. The participants of the conference included researchers, policy makers, research directors, farmers, and development practitioners (extension workers); seed companies representatives, farmer organizations, the African Union Commission, the Economic Commission of Africa and more than 25 African governments and countries; and donors from Africa, Asia, Europe, USA, and Latin America.

The conference participants devised policy options that could boost domestic productivity and put the continent on a new path towards wheat self-sufficiency. They also adopted the Wheat for Africa Declaration to promote regional wheat value chains, strengthened cooperation in research innovation and technology, and measures to protect domestic producers – through careful timing of food aid and the removal of heavy import subsidies. The declaration also called on the Conference of African Ministers of Agriculture and Trade to include wheat as one of Africa's strategic products for achieving food and nutritional security. The International Center for Agricultural Research in the Dry Areas will contribute its expertise in wheat research specific to the continent – the organization is leading the wheat component of a program funded by the African Development Bank supporting the development of strategic crops across Africa – to advance the declaration's goals.

New Tools for Assessing Seed System Security

This news contribution from the International Center for Tropical Agriculture (CIAT) highlights a practice guide (published in English and French) and a full set of tools to assess how seed systems function, especially in stress periods.

Practice guide for seed system security assessments

A seed system security assessment (SSSA) determines the security of farmers' seed systems, considering both acute stress (the emergency) and more chronic, long-term challenges. Such a focus also includes broader analysis of cropping and livelihood systems, with special focus on vulnerability and resilience. An SSSA informs donor, government and non-governmental organization (NGO) responses in agricultural relief and recovery, identifying any need for interventions, and guiding the choice of relief and development actions.

A practice guide published in French and English supports SSSA implementation and steers diagnosis towards targeted, concrete action plans (see Box 1). Links for the manuals in English and in French can be found at: http://ciat-library.ciat.cgiar.org:8080/jspui/ handle/1234567896639/.
Several features in SSSA render the methodology of particular interest:

1. Local seed markets become visible. The tools allow researchers and development practitioners to assess the amount, quality, and price of potential seed stocks.
2. Insights are socially disaggregated. The tools allow for analyses to be differentiated by gender or other key social variables.
3. New software automates data analysis, generating instant results tables after data entry (see Box 2).

Completed field SSSAs: good seed security assessments leverage change

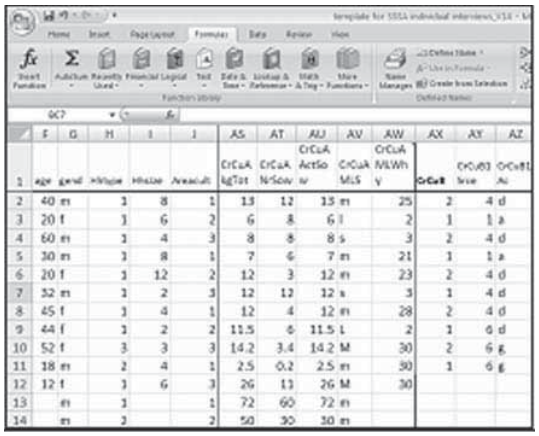
Research teams have recently completed SSSAs in northern Katanga, the Democratic Republic of Congo, Eastern Province and Coast Province in Kenya, southern Sudan, Haiti, northern Mali, southern Malawi, Zimbabwe, and Ethiopia, among

Box 1: Seven basic steps in assessing seed system security

1. Identify zones for assessment + possible intervention.
2. Describe normal status of crop and seed systems.
3. Describe broad effects of the disaster on farming systems.
4. Set goals for relief + recovery operations based on farmers' need.
5. Assess the post-crisis functioning of seed channels to determine whether short-term assistance is needed.
6. Identify any chronic stresses requiring long-term solutions + identify emerging development/ market opportunities.
7. Determine appropriate short- and long-term responses based on analysis of priority constraints, opportunities, and farmers' needs.

Source: When disaster strikes (2008)

Box 2: Seed system security assessment .... data in analysis and tables automatically out



Women-headed households - responses

1) Women-headed HHs - CURRENT/MOST RECENT SEASON: MORE,

Crop	Number of farmers	% of households			Change in se
		MORE	SAME	LESS	mean %
Maize	16	37.5	25.0	37.5	72.32
Sorghum	23	43.5	17.4	39.1	29.65
Millets	8	25.0	25.0	50.0	-7.01
Sweet potato	2	50.0	0.0	50.0	25.00
Irish potato	3	0.0	33.3	66.7	-38.89

others. For full set of field findings and published reports, see, 'Seed System Security Such features render rigorous analysis accessible to in-country teams. This means that there is little excuse for not conducting an assessment.

Field Assessments at http://ciat-library.ciat. cgiar.org:8080/jspui/handle/1234567896640/

Upcoming activities in early 2013

The International Center for Tropical Agriculture is preparing a website to host the full set of tools (with guidance on field use), major SSSAs completed to date, and information on upcoming assessments and training possibilities. As of June 2013, CIAT will make an e-course available, and will issue training certificates.

For more information, contact Louise Sperling, CIAT, Cali, Colombia; E-mail: l.sperling@cgiar.org or Shawn McGuire; University of East Anglia, United Kingdom; E-mail: S.McGuire@uea.uc.uk

Seedcalc8: a Tool for Seed Testing

Seedcalc8 is a Microsoft Excel® application written for Windows 2000 and XP and designed for use in testing seed for purity/impurity characteristics including levels of adventitious biotech traits in conventional seed lots. All of the capabilities of previous versions of Seedcalc (i.e., Seedcalc3, Seedcalc5 and Seedcalc7) are still available in Seedcalc8. They are described in two articles published in Seed Science Research entitled 'Statistical considerations in seed purity testing for transgenic traits' (June 2001) and 'Testing for adventitious presence of transgenic material in conventional seed or grain lots using quantitative laboratory methods: a new statistical approach and its implementation' (September 2005).

Seedcalc8 is able to design qualitative testing plans using a Bayesian approach. This new capability was presented at the 28th ISTA Congress 2007 under the title 'A Bayesian approach for adventitious presence (AP) semi-quantitative testing in conventional seed lots'.

Seedcalc8's spreadsheet application contains macros that are necessary for the full implementation of the statistical tools. If the security setting of the computer is set at the 'high' level, the macros are automatically disabled. We suggest enabling the macros so that the user can realize the full benefit of this application.

Note that three earlier versions of Seedcalc (i.e., Seedcalc3, Seedcalc5 and Seedcalc7) are also available for download. While these earlier versions do not have as many features as Seedcalc8, they may run better under older MS Windows versions such as Windows 95.

It is possible to design testing plans for the majority of seed testing situations by using both Seedcalc and Qualstat applications.

Please report any suggestions for improvements to Seedcalc8 to Kirk Remund; E-mail: kirk.m.remund@monsanto.com, Jean-Louis Laffont; E-mail: jean-louis.laffont@pioneer.com, or Sylvain Gregoire; E-mail: sylvain.gregoire@geves.fr

CONTRIBUTIONS FROM SEED PROGRAMS AND PROJECTS

In this section we invite national seed programs, projects, universities, and regional and international organizations to provide news about their seed-related activities.

Biosafety Workshop in Egypt

A workshop on the importance of biosafety law in Egypt took place on 11 July 2012. More than 50 participants from various fields were present to answer queries from members of the agriculture committee in the Egyptian Parliament. The Egyptian Biotechnology Information Center and the Ministry of Environment organized the workshop.

The participants stressed the importance of adopting a legal system that would regulate the use and handling of GM products. The participants agreed that adopting GM crops would contribute to food security in the face of population increase and the negative effects of climate change. Presentations emphasized the importance of adopting GM technology and its role in tackling the challenges of food security and reducing the use of pesticides and fertilizers in Egypt. It was also reported that many GM crops are now in the pipeline awaiting the 'green light' for commercialization.

Partial view of participants of the biosafety workshop, Egypt

Workshop recommendations included the following:

- Speed up the process of approving biosafety law;
- Launch a campaign on promoting and adopting GM technology;
- Organize regional seminars for stakeholders on the benefits and applications of the technology;
- Develop an institution to serve as a market place for scientific ideas; and
- Establish a council under the guidance of the Egyptian prime minister that would represent all the ministries that produce or consume GM materials.

For more information you may kindly contact: Dr Naglaa Abdalla, Egypt; E-mail: naglaa_a@hotmail.com

ISSD Launches Second Phase

The Integrated Seed Sector Development (ISSD) Ethiopia program launched its second phase on 5 April 2012. During phase I, which ran from 2009 to 2011, the program supported 34 farmers' groups in the production of quality seed of both local and improved varieties. The program also facilitated partnership projects, encouraged the private sector to engage in the seed sector, and contributed to the revision of Ethiopia's seed law.

The ISSD program facilitated support to innovation in the seed sector to address existing diversity in agro-ecology for improving the seed system in Ethiopia.

The Dutch government takes a great interest in the ISSD Ethiopia program. This is reinforced by the increasing presence of Dutch private companies operating in the seed business in Ethiopia.

The ISSD program is coordinated by a consortium of four universities (Bahir Dar, Haramaya, Hawassa, and Mekelle), the Oromia Seed Enterprise, and the Ethiopian Seed Growers and Processors Association in Ethiopia; and the Wageningen University and Research Centre for Development Innovation in the Netherlands. Partners include several organizations within federal government, regional government, and NGOs. The program is funded by the Directorate General for International Cooperation through the Embassy of the Kingdom of the Netherlands, Addis Ababa, Ethiopia.

For more information contact Marja Thijssen, Centre for Development Innovation, Wageningen UR, P.O. Box 88, 6700, AB Wageningen, The Netherlands; E-mail: marja.thijssen @wur.nl

Reviving Production of Cereal Seed in Lebanon

The Lebanese Agricultural Research Institute (LARI) previously handled the production of cereal seed in the country, while the private sector provided seed and planting materials of almost all horticultural crops (vegetables, fruit trees, and ornamentals). In recent years, LARI's role was restricted to breeder seed, while another governmental entity handled certified seed. Over the years, the production program for cereal seed has unfortunately been neglected and farmers have lost access to seed of new varieties.

In 2009, the Lebanese Ministry of Agriculture (MoA) started working with LARI to produce cereal seed. The International Center for Agricultural Research in the Dry Areas supported the initiative by training technical staff and providing 15 tonnes of foundation seed, comprising 13 new varieties of wheat, barley, chickpea and lentil. These varieties included 4 tonnes of durum wheat seed (1 tonne each of Azeghar, Mikki, Lahan and ICRASHA), 6 tonnes of barley seed (5 tonnes of Rihane and 1 tonne of Assi), 0.6 tonne of chickpea seed (0.075 each of Balila 2 and FLIP840.3 ,15- t of Ghab 5 and 0.15 t of FL977-) and 0.3 tonne of lentil seed (Idleb 2). In October 2012, the MoA, announced the availability of 3,050 tonnes of certified wheat seed and 600 tonnes of certified barley seed for distribution to farmers at competitive prices (see table below).

Cereal seed production in 2012 crop season

Crop	Variety	Quantity (t)
Wheat	Lahan 2	1000
	ICRASHA 2	1000
	Mikki 3	775
	Azeghar 2	225
	Massara	50
	Sub-total	**3050**
Barley	Rihane 03	600
	Total	**3650**

More than 200 farmers keen to have access to these new varieties attended the announcement by the Minister of Agriculture. The available wheat seed is mostly ICARDA durum wheat varieties (Azeghar, Miki, Lahn and ICARASHA) and is expected to improve significantly wheat production in Lebanon.

HE Minister of Agriculture Dr Hussein Hajj Hassan (center) and Dr Michel Afram, President and Director General of the Lebanese Agricultural Research Institute (second left) tour the new seed storage facilities at LARI, Tel Amara in Bekaa, Lebanon

Rabih Kabblan, LARI, Lebanon; E-mail: rkabalan@lari.gov.lb and Hassan Machlab, ICARDA, Terbol, Lebanon; E-mail: h.machlab@ cgiar.org

New Indian Seed Hubs Boost Productivity

The replacement rate for legume seed in India (i.e. seed bought in rather than that seed saved by farmers) is extremely low – only 2–7%, compared to the recommended rate of 25–30%. This limited availability of seed of new varieties undermines productivity and limits rural incomes in the country. A new ICARDA scheme aims to tackle this problem by distributing grass pea varieties that are low in toxins and high in biomass, thereby helping to boost farmer earnings and increase self-sufficiency.

The ICARDA project, funded by the Indian Ministry of Agriculture's National Food Security Mission, has established community-owned and managed seed hubs in various Indian states: Assam, Uttar Pradesh, Bihar, and West Bengal.

These centers of seed production will facilitate better access to improved seeds, speed-up dissemination rates, and broaden the appeal and adoption of pulse technologies. Farmers will also be able to generate additional income

Improving seed availability: Indian farmers registering for seed certification through the sale of seeds

For more information, please contact: Dr Ashutosh Sarker, South Asia and China Regional Program, New Delhi, India. E-mail: a.sarker@cgiar.org

Varietal Releases of Cool Season food Legumes

The International Center for Agricultural Research in the Dry Areas and its partners have developed improved varieties of a range of crops – wheat, barley, lentil, faba bean, chickpea, grass pea, field pea and forage crops. The new varieties are suitable for rainfed agriculture in areas where rainfall is low and erratic.

The new varieties offer higher and more stable yields and have a higher tolerance/resistance to diseases, insect pests, drought, heat, cold, parasitic weeds and other stress factors. Some varieties also offer large improvements in traits such as bread-making quality and nutritional value.

From the germplasm of cool season food legumes, ICARDA released the following varieties, which the organization evaluated in partnership with national agricultural research systems (NARS): Faba bean: Three varieties, Misr-3, Nubaria-2 and Sakha-4, released for cultivation in Egypt.

Chickpea: Two varieties, Hasanbey and Seckin, released for cultivation in Turkey whereas three elite lines (FLIP 9487-, FLIP 9393-, and FLIP 96-65) proposed for release in Kazakhstan.

Lentil: Four varieties (Khajura 3 in Nepal, BARI Masur 7 in Bangladesh, and VL Masoor 514 and IPL 315 in India) released for cultivation.

For more information, please contact: Dr Shiv Kumar, Agrawal, BIGM, ICARDA, Rabat, Morocco; E-email:s. agrawal@cgiar.org

RESEARCH NOTES

This section contains short communications on practical research or relevant information on agriculture or seed technology.

Participatory Varietal Selection of Malt Barley (Hordeum vulgare L.) for Yield and Related Traits at Gusha Shinkurta, West Gojam, Ethiopia

Yetsedaw Aynewa, Tadesse Dessalegn, Wondimu Bayu[1] and Zewdie Bishaw [2]

Abstract

Researchers worked with farmers to evaluate and select genotypes of malt barley with the best yield and related traits. The team evaluated six released varieties and four promising lines of malt barley at Gusha Shinkurta in West Gojam, northwestern Ethiopia. The research consisted of three mother trials comprising 10 genotypes in randomized complete block design with one replication each at three farmer's fields in the 2010 crop season. Genotypes were scored using the matrix-ranking method based on farmers' selection criteria. Researchers recorded the genetic variability of yield and other related traits. They found that the genotypes HB1533 and HB52 had the highest yields while Beka had the lowest. In the mother trials, farmers ranked HB52, HB120 and HB1533 first, second and third, respectively. The research team observed significant variation among genotypes evaluated for important quantitative traits, providing good scope for crop improvement through participatory varietal selection. The study shows that farmers' evaluations, coupled with that of researchers, are crucial in selecting elite varieties of barley for use under the growing conditions experienced by farmers.

Introduction

In Ethiopia, barley (*Hordeum vulgare L.*) has been ranked fifth next to teff, wheat, maize and sorghum in terms of area and production (CSA, 2010). Barley's second most important use in Ethiopia is as malt; elsewhere, malt is also used in hard liquors, malted milk and flavoring a variety of foods such as biscuits, bread, cakes and desserts. Malting barley in brewed drinks, distilled grains and sprouts can also provide proteins desirable for animal diets (Emebiria et al., 2003).

In Ethiopia, modern malt production started in 1974 at the St. George Brewery. Currently, there are six breweries requiring 45,679 tonnes of malt every year, while the existing capacity of the Asela malt factory is only 15,000 tonnes (Getachew et al., 2007).

Ethiopia's national barley research program has focused primarily on using exotic malting barley lines following conventional breeding methods (Alemayehu and Gebre, 1987). Consequently, a large number of breeding materials are discarded without much knowledge of their performance outside research stations or the likely performance of selected lines in farmers' fields. This study therefore used participatory varietal selection (PVS) as an alternative approach in which farmers worked with researchers to evaluate and select malt barley varieties and to make recommendations based on performance. The study investigated the application of participatory varietal selection in identifying malt barley varieties that are suitable for the malting and brewing industry and in broadening varietal choices and seed supply in the study area.

Materials and methods

The study took place at Gusha Shinkurta located at 1191°'N and 3702°'E, along the Bahir Dar to Addis Ababa main road in Guagusa Shekudad *woreda*, in the Awi Zone. The site is 2496 meters above sea level with a temperature ranging from 11.2°C to 25.5°C and a mean annual rainfall of 1834.6 mm. Soil at the site has a pH of 5.46, 0.098% total nitrogen, 19.73 ppm available phosphorus, 1.32% carbon and 2.28% organic matter.

Experimental materials and procedures

The research team evaluated through participatory varietal selection four promising genetic lines (EH1847/F4.2p.5.2, EH1877/F4.1p.35.1, IBON-17303/ and IBON-17403/) and six released varieties (HB1533, Miscal-21, HB-52, HB-120, Holker and Beka) of malting barley genotypes.

The experiment was hand planted on 18 June 2010 at a rate of 75 kg ha^{-1} in $3m^2$ plots. Three farmers

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planted the three mother experiments with one replication each. Nitrogen was applied at a rate of 41 kg ha-1 and P_2O_5 at 46

kg ha^{-1}. P_2O_5 was applied once during the planting time but nitrogen in equal portions three times (at planting, and when tillers and flag leaves appeared).

Data collection

Researchers took measurements from five plants randomly selected from each plot: plant height from ground level to the top of the spike excluding the awn, and spike length and tiller number per plant. They calculated days to heading and days to maturity as the number of days from the day of effective rainfall to the day where 50% of the plants had fully developed spikes and 90% of the spikes had fully matured, respectively. They also calculated the grain-filling period as the number of days from heading to maturity, and measured grain and above-ground biomass yields from the central four rows at maturity. Finally, the team determined the number of kernels per spike on five randomly sampled plants from the central four rows.

The experiment took place on farmers' fields at three sites. At each site, a randomly selected group of farmers of five members (two female and three male) participated in the PVS process. Farmers evaluated and ranked the varieties/lines at different crop growth stages. They used parameters like vegetative growth/vigor, tiller number, disease reaction, spike length, and kernel number to evaluate the cultivars. Farmers and researchers identified these evaluation criteria through brainstorming sessions.

Data analysis

To reveal the total variability present within the tested genotypes in a randomized complete block design, the team computed data for all the characteristics evaluated, as per Gomez and Gomez (1984). Researchers subjected the data to an analysis of variance (ANOVA) using SAS software version 8 (SAS, 1999) and computed variance components and genetic parameters. The team computed ANOVA of randomized complete block design using the following mathematical model: Yij is the observation for the ith treatment, which is supposed within the jth replication.

Farmers' data analysis

Farmers analyzed data using matrix ranking with criteria in the first row and varieties in the first column; criteria were identified through brainstorming and ranked in groups.

Results and discussion

Farmers' evaluation

Farmers used as selection criteria spike length, kernel number per spike, disease reaction, number of tillers per plant and crop stand. Farmers'

Table 1. Farmers' evaluation of malt barley genotypes in mother trials at Gusha Shinkurta in the 2010 crop season

Variety/line	Parameters and scores							
	Crop stand	Disease resistance	Spike length	No. of kernels/ spike	No. of tillers/ plant	Total Scores	Mean scores	Rank
IBON17403/	4.7	4.3	2.7	1.0	3.3	16.0	3.2	5
HB 120	4.0	3.7	4.7	4.0	4.3	20.7	4.3	2
EH-1877/F4.1p.35.1	4.0	4.7	3.0	2.3	3.3	17.3	3.5	4
EH-1847/F4.2p.5.2	3.3	4.0	3.7	2.7	3.7	17.3	3.5	4
Miscal-21	4. 7	4.0	3.7	2.0	3.0	17.3	3.5	4
HB-52	4. 7	4.0	5.0	3.7	4.7	22.0	4.4	1
IBON17303/	5.0	2.7	2.3	1.7	2.7	14.3	2.9	6
HB-1533	4.0	4.0	2.7	4.7	4.7	20.0	4.0	3
Beka	4.0	1.3	2.7	2.3	2.7	13.0	2.6	8
Holker	3.0	2.3	3.3	2.0	2.7	13.3	2.7	7

Scores: 1 = Very poor, 2 = Poor, 3 = Good, 4 = Very good, and 5 = Excellent

evaluated the genotypes on a scale of 1 (poor) to 5 (excellent). The product of the values for the criteria and the score for each specific variety provided a weighted ranking of varieties (Table 1). The total score ranged from 13 to 22. In the mother trial, the best genotype selected by farmers was HB52 (score 22) followed by HB120 (score 20.7) and HB1533 (score 20). Farmers' observations indicated that HB52 and HB1533 had a higher tillering capacity than the other varieties. They also showed that Holker and Beka were susceptible to scald and net blotch diseases, while IBON 17403/ and EH 1877/F4.1p.35.1 were relatively resistant. HB120 and HB52 had longer spikes compared to the other varieties and HB1533 had a higher number of kernels per spike than the other varieties.

It appears that on the one hand, plant breeding has been unable to address the needs of the majority of farmers, including the most marginal and the poorest, and on the other hand, it has created a number of undesirable effects on the environment and on biodiversity. The shortcomings of centralized plant breeding are related to its inability to address the enormous diversity of environmental conditions and end users' needs (Morris and Bellon, 2004).

Researcher evaluation

1. Growth parameters

Barley genotypes differed significantly (P<0.01) in days to heading, days to maturity and plant height (Table 2). These findings agreed with that of Tadesse (2010). Days to heading ranged from 74.6 to 91.3 days (Table 3); the shortest value recorded was for IBON17403/, while the longest was for Holker and HB52. The average number of days to maturity ranged from 120 to 134 (Table 3), with the largest value recorded for HB1533 followed by Holker and HB120, while the shortest was recorded for IBON17403/. For plant height, mean values ranged from 73.6 cm to 112 cm. The cultivars HB52, HB120 and HB1533 ranked first, second and third place respectively in terms of plant height. Beka had the shortest mean plant height.

Barley genotypes showed significant variation (p<0.05) in their grain-filling periods. The mean grain-filling period ranged from 39 to 47.6 days. The longest periods for grain filling were recorded for HB1533 followed by

2. Yield and yield components

Grain yield revealed non-significant differences among barley genotypes. The highest yielders were HB1533 and HB52, while the lowest yielder was Beka. The genotypes revealed highly significant differences (P< 0.01) for spike length and number of kernels per spike. Mean spike length ranged from 7.1 cm to 10 cm. The longest spike length was recorded for HB52 followed by HB120 and EH1847/F4.2p.5.2 respectively, while the shortest spike length was recorded for Holker. Average number of kernels ranged from 24.6 to 59.6. The highest number of kernels was recorded for HB1533 followed by HB52 and EH1847/ F4.2p.5.2. The lowest

IBON17403/ and IBON17303/ respectively, while the shortest grain-filling period was recorded for Beka. The genotypes did not show any

Table 2. Analysis of variance of malt barley genotypes at Gusha Shinkurta in the 2010 crop season (mean square value)

Source	Df	DH	DM	PH	GY	SPL	NK	NT	GFP	STD
Replication	2	221.73	386.03	1366.71	16.75	0.02	0.83	21.9	27.3	232.5
Genotype	9	102.33**	51.96**	557.38**	1.33NS	3.35**	321.74**	3.1*	25.4*	118.6NS
Error	18	9.14	8.18	61.51	0.86	0.28	4.09	1.2	8.0	121.4
F value		11.19	6.35	9.06	1.54	11.94	78.61	2.59	3.17	0.98
P value		0.0001	0.0005	0.0001	0.207	0.0001	0.0001	0.0411	0.017	0.489

** = Significant at P<0.05, ** = Significant at P<0.01, and NS = Non-significant; Df= Degrees of freedom, DH = Days to heading, DM = Days to maturity, PH = Plant height, GY = Grain yield, SPL = Spike length, NK = Number of kernels, NT = Number of tillers, GFP = Grain-filling period, STD = Crop stand*

Table 3. Performance of malt barley genotypes at Gusha Shinkurta in the 2010 crop season

Cultivar	DH	DM	PH	GY	SPL	NK	NT
Miscal 21	83.0ab*	126.0c	81.5cd	2.5	7.4c	24.6e	5.6cd
Beka	90.6cd	130.0abc	73.6d	1.9	7.5c	25.6de	5.6cd
Holker	91.3a	132.0ab	91.0bc	2.8	7.1c	28.3bcd	6.3abcd
HB1533	86.0bc	134.0a	96.1b	3.8	7.3c	59.6a	5.0d
HB120	91.3a	132.0a	110.0a	3.1	9.5ab	30.3bc	7.6ab
HB-52	90.0ab	131.0ab	112.0a	3.8	10.0a	31.6b	7.6ab
IBON17303/	80.3d	125.0c	79.9cd	2.3	7.4c	25.6de	6.0bcd
IBON17403/	74.6e	120.0d	74.7d	2.9	7.6c	26.0de	8.0a
EH1847/F4.2P.5.2	83.0c	127.0bc	80.1cd	3.7	9.1ab	31.0b	7.0abc
EH1877/F4.1p.35.1	79.3e	126c	84.4bcd	3.5	8.6b	27.3cde	7.0abc
Mean	84.9	128	88.3	3.1	8.2	31	6.6
LSD (5%)	5.1	4.91	13.4	-	0.9	3.4	1.8
CV (%)	3.5	2.2	8.8	30	6.4	6.5	16.5

**Means with the same letter are not significantly different at P<0.05; DH = Days to heading, DM = Days to maturity, PH = Plant height, GY= Grain yield, SPL= Spike length, NK= Number of kernels, NT = Number of tillers*

significant variation in crop stand.

number of kernels was recorded for Miscal-21. There was significant variation (P<0.05) in the number of tillers per plant. The mean value for number of tillers in the different genotypes ranged from five to eight. The highest number of tiller per plant was recorded for IBON17403/ followed by HB120 and HB52; the lowest number of tillers was recorded for HB1533. The numbers of productive tillers per plant, the grain number per spike and grain weight are important features of cereals in determining the yield potential (Moral *et al*., 2002). There was no significant variation for crop stand among genotypes.

Conclusion

Malt barley genotypes revealed differences in plant growth, yield and yield components. In the farmers' evaluation, HB52 received the highest score followed by HB120 and HB1533, while in the researchers' analysis, HB1533 and HB52 had the highest yield followed by EH1847 and EH1877. In general, barley genotypes selected on the basis of farmers' preferences and selection criteria matched well with the results of data analysis carried out by researchers. Farmers' involvement is crucial in identifying malt barley varieties preferred for consumption, malting and brewing industries. Both the researcher analysis and farmer evaluation provide useful information for designing and developing appropriate techniques to improve or select barley varieties better adapted to nutrient-deficient environments. They also provide an understanding of relevant approaches for strengthening crop and product development in a sustainable way. The analysis of crop characteristics, combined with farmers' evaluation, helps in understanding, conserving and accessing genetic diversity that can be used in the national and international integration of information and resources.

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MEETINGS AND COURSES

Announcements of national, regional, or international meetings, seminars, workshops, and training courses appear in this section. Please send in announcements of relevant events organized in your country for inclusion in the next issue.

Conferences

AFSTA Congress 2013

The AFSTA Congress 2013 will be held from 36-March 2013 at Le Meridien Hotel, Mauritius. Online registration is now available via the website www.afsta.org. For more information, on registration, kindly contact AFSTA Secretariat at afsta@afsta.org or by phone +25461/60/2727853 20--

30th ISTA Congress, Antalya, Turkey

The triennial congress of the International Seed Testing Association will take place in Antalya, Turkey (1218- June), along with the 30th ISTA Seed Symposium, on 12 to 14 June 2013 in the same venue. The seed symposium will cover a wide range of seed-related topics including: genetic conservation, habitat regeneration, seed pathology, seed germination and dormancy, seed quality and plant breeding, application of molecular markers, seed quality evaluation and seed physiology and stress responses. For more information, please contact ISTA Secretariat at.

First Legume Society Conference

The First Legume Society Conference will be held from 911- May 2013, in Novi Sad, Serbia. This event aimed at bringing together legume researchers worldwide, dealing with all legume crop groups, such as grain legumes, forage legumes, soybean, ornamental legumes, pharmaceutical legumes and the others, as well as all the legume research topics, ranging from genomics via agroecology and agronomy to human and animal health and environmental benefits. For more information please visit the conference web site at: http://lsc1.nsseme.com

Courses

Distance learning course

The International Union for the Protection of New Varieties of Plants' distance learning course, 'Introduction to the UPOV System of plant variety protection under the UPOV convention' will be conducted in English, French, German, and Spanish. The timetable for the session is as follows:

- 13 May to 16 June 2013 (registration: February 1 to March 31)
- 14 November to 8 December 2013 (registration: August 1 to September 31)

The categories of participants are as follows:
Category 1: Government officials from members of UPOV endorsed by the relevant representative to the UPOV Council (no fee).

Category 2: Officials of observer states/inter-governmental organizations endorsed by the relevant representative to the UPOV Council (one non-fee paying student per state/ intergovernmental organization, additional students at CHF1000 per student).

Category 3: Others (fee: CHF1000).

Please note that the registration of participants in categories 1 and 2 must be accompanied by an endorsement from the representative to the UPOV Council of the UPOV member or observer, as appropriate, formally nominating the participant.
Detailed information concerning the course content and on-line registration is available on the UPOV website: http://www.upov.int/resource/en/dl205_training.html.

ICARDA Courses 2013

Strengthening the human resources capacity of NARS is an integral part of ICARDA's work to ensure the effective use of advances in science and technology. The International Center for Agricultural Research in the Dry Areas offers a wide range of short-term (maximum 4 weeks) to long-term (4 to 9 months) tailor-made courses that meet the needs of a wide diversity of clients and national priorities. These courses cover topics including plant breeding and molecular technology, integrated crop management, seed science and technology, water and land management, socio-economics, and biometrics. The courses take the form of formal and informal education through specific tailor-made and hands-on practical short-term courses to the supervision of postgraduate (MSc and PhD) students, interns and research fellows from around the world. The annual training program is overseen by ICARDA's Capacity Development Unit.

For more information please contact: Dr Iman El-Kaffas, Head of CDU, ICARDA, Amman, Jordan; E-mail: i.kaffas@cgiar.org

IFDC 2013 Courses

The International Fertilizer Development Corporation (IFDC) has held over 700 formal workshops, study tours and training programs for more than 10,000 participants from 150 countries since 1974. The programs have covered a wide range of subjects including integrated soil fertility management, efficient use of fertilizers, fertilizer production technology, agro-input dealerships, competitive marketing, supply chain management, investment analysis, policy reforms and numerous specialized topics. A series of courses will take place in different parts of the world in 2013.

Please visit the web site http://www.ifdc.org/training for information and updates, and registration forms for events on the 2013 training program calendar

Norman E. Borlaug Leadership Enhancement in Agriculture Program

The Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) is accepting applications from sub-Saharan African students conducting research on topics related to the US governments global hunger initiative, Feed the Future. All topics related to agriculture (as defined by Title XII) and the Feed the Future initiative are admissible. The deadline for receipt of applications is 17 January 2013. These applications will be considered for fellowships beginning 1 May 2013 through to 30 April 2014.

Borlaug LEAP offers fellowships to enhance the quality of thesis research by graduate students from sub-Saharan Africa who show strong promise as leaders in the field of agriculture and related disciplines. The fellowship supports engaging a mentor at a US university and a CGIAR center. The fellowship provides 20,000 USD in for one year's research. For full details on eligibility and other criteria, please visit http://leap.ucdavis.edu.

The Norman E. Borlaug Leadership Enhancement in Agriculture Program is supported through the US government›s Feed the Future Borlaug 21st Century Leadership Program funded by USAID. For more information, please contact Borlaug Leadership Enhancement in Agriculture Program (LEAP), CA&ES International Programs, Environmental Horticulture Building, Rm #1103, University of California, Davis, One Shields Avenue, Davis, CA 95616; Email: BorlaugLEAP@ucdavis.edu; Website: http://ip.ucdavis.edu/study/leap

LITERATURE

Books, journal articles, and other literature of interest to readers are presented here. Please send information on agriculture-related publications – seed, policy, regulation, and technology – to the Editor for inclusion in Seed Info.

Books

Sumberg, J. and J. Thompson (eds.). 2012. Contested Agronomy: Agricultural Research in a Changing World
Routledge; ISBN: 978 0 415 50714 1 (paperback); 220 pp; Price: £19.99; Website: http://www.routledge.com

Over the last 40 years, agricultural research in the developing world has been profoundly influenced by three powerful trends: the growing importance and consolidation of the agro-inputs by the private sector; the development of the environmental agenda, which has shunned high external input systems in favor of indigenous systems and crop biodiversity; and the move towards participatory technology development, stimulated by an empowerment agenda as well as a demand to make research farmer-driven. The impact of such trends on agronomic science, the authors argue, raises the need for a ‹political agronomy› analysis, to which this meaty volume offers an extremely valuable contribution.

Detailed case studies highlight several key areas for analysis. These include the politics behind problem framing: the direction and validity of research is heavily influenced by how researchers and funders choose to define their objectives. In recent years, for example, the management of soil organic matter has been reframed as ‹carbon sequestration›, introducing new questions concerning monitoring and carbon markets that have little to do with the parameters of soil condition and crop response. The power of common-interest groups to determine research agendas are another key area: a case study on the promotion of conservation agriculture in Zimbabwe highlights the role of church-linked organizations in promoting a technology that is regarded as farming ‹God›s way›. Other key areas of discussion include the pressure by funders for research to work through collaboration and partnership and the necessity to prove impact.

Diao, Z., J. Thurlow, S. Benin and S. Fan (eds.). 2012. Strategies and Priorities for African Agriculture
International Food Policy Research Institute; 442pp; Price: free to download; Website: http://www.ifpri.org

In the first decade of the twenty-first century, countries within sub-Saharan Africa have enjoyed a period of strong and sustained economic growth and governance has improved. But continuing this pattern of success will require enhancing the region›s agricultural sector, in which a large proportion of poor people make a living, the authors argue.

Based on ten country case studies, this book examines the potential of agriculture to contribute to national growth and poverty reduction and evaluates the financial cost of accelerating agricultural growth. The authors state that broad-based growth will be difficult to achieve without expanding staple-food crop and livestock production which would benefit the poorest households. The need for greater investment in agriculture is also highlighted, but the efficiency of agricultural investment will have to improve, the authors say, if development targets are to remain attainable.

Hillel, D. and C. Rosenzweig (eds.). 2012. Handbook of Climate Change and Agroecosystems: Global and Regional Aspects and Implications

Imperial College Press, the American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America; ISBN: 9788-983-84816-1- (hardcover), 320 pp; Price: USD118.00; ISBN: 9785-984-84816-1- (ebook), Price: USD153.00. Website: http://www.worldscientific.com/worldscibooks/10.1142/p876
Climate change is no longer a mere projection for the indeterminate future, but has already

become manifest in the weather regimes affecting agroecosystems, food production and rural livelihoods in many regions around the world. It is a real and growing challenge to the world at large and in particular to the scientific community, which is under increasing pressure to respond effectively.

The handbook is the second volume in the International Climate Policy Series on Climate Change Impacts, Adaptation, and Mitigation. This on-going series is dedicated to elucidating the actual and potential impacts of climate change, and to formulating effective responses to this global challenge. It is designed to inform, spur, and integrate the work of leading researchers in the major regions of the world, and to further international cooperation in this crucial field.

Apart from thematic contributions on climate change, it includes regional reports from Africa; the Americas; Australia and New Zealand; Europe; the Middle East and North Africa; and South Asia.

Youdeowei, A., P. Stapleton and R. Obubo (eds.). 2012. Scientific Writing for Agricultural Research Scientists – A Training Resource Manual.

The Technical Centre for Agricultural and Rural Cooperation; ISBN: 9788-92-9081-506-(paperback); 190pp; Price: free to download; Website: http://publications.cta.int

Good scientific writing communicates in simple terms, even though the subject may be complicated, advise the editors of this newly updated manual. The editors and other contributors have done an excellent job of explaining the technicalities of effective science writing in very clear, readerfriendly language. Preparing a paper for publication in a scientific journal can be a daunting challenge, not least because of the myriad of conventions that must be observed. But the well-structured guidance presented here, complemented by suggestions for training activities, should instil confidence in those new to paper-writing, or looking to improve their rate of acceptance.

The bulk of the manual is devoted to the key aspects of writing research papers. Deciding on your target audience and selecting the most appropriate journal to reach them are essential, and should be done before beginning work on the actual paper. Other topics covered include: identifying your ‹significant results›; understanding the main component sections of a paper; language and style; using tables and illustrations; reporting statistics; and making citations and references.

Further chapters – including some new to this revised edition – discuss oral presentations, writing posters, proposals and reports, online publishing and communicating with non-scientific audiences. Effective science writing is essential, not only for career progression, but to ensure that research outputs are disseminated and used. This highly practical manual offers significant help in achieving both of those goals.

Websites

New website to support wheat research

The Wheat Initiative has launched a website to help coordinate worldwide research efforts in the fields of wheat genetics, genomics, physiology, breeding and agronomy. The new website provides a central hub for the Wheat Initiative, which aims to coordinate research on producing improved wheat varieties, disseminate better agronomic practices worldwide, and to help farmers stably produce more and better wheat in diverse production environments.

The Wheat Initiative website will foster communication between the research community, funders and global policy makers at the international level to meet their research and development goals. Through online discussions and collaborative workspaces, it will provide a forum for the international wheat research community. On the website, users can find out about the Wheat Initiative, access wheat databases, find researchers for collaboration, participate in discussions and keep up to date with the latest publications, news and events.

There is a worldwide need to increase wheat yield and improve tolerance to stresses, diseases and pests. Coordinated research can address this and help to improve the efficiency of farming inputs for more sustainable wheat production. The Wheat Initiative will help researchers and farmers meet this grand challenge by exchanging knowledge, identifying synergies and encouraging collaborations among major wheat research programs. An important element of the initiative is that it brings together researchers with the various funding agencies involved in wheat research.

The Biotechnology and Biological Sciences Research Council, the International Maize and Wheat Improvement Center and Institut National de la Recherche Agronomique contribute to the coordination of Wheat Initiative activities. The initiative was proposed by G20 agricultural ministers

in 2011. To find out more, go to: http://www.bbsrc.ac.uk/news/food-security/2011110629-/pr-g20-endorses-wheat-improvement.aspx

Journals

New journal on applied cell biology

Applied Cell Biology is a new journal devoted to the rapid publication of fundamental research papers on all phases of cell biology. Journal topics include cell physiology, cytometry, cellular structures, microscopy, cellular types, systems biology and computational biology.

All contributions shall be rigorously refereed and selected on the basis of quality and originality of work as well as the breadth of interest to readers. The journal will publish the most significant new research in all phases of cell biology being investigated in the world today, thus ensuring its scientific priority.

Applied Cell Biology will be published four times a year. Manuscripts submitted to Applied Cell Biology should be short communications, reviews and regular papers. A modular version of these guidelines is available as a separate PDF file at http://www.tradescienceinc.com/index.php?option=com_content&view=article&id=2835&Itemid=196

Newsletters

ESA's Seed Week

Seed Week is a weekly summary of news, views and breakthroughs in the seed industry published by the European Seed Association (ESA), the voice of the European seed industry. The European Seed Association represents those active in the research, breeding, production and marketing of seeds for agricultural and ornamental plant species. It represents more than 30 national seed associations (and with that more than 7000 seed business in the EU) and more than 60 direct company members. The mission of ESA is to work for fair and proportionate regulation of the European seed industry; freedom of choice for customers in supplying seeds through innovative, diverse technologies and production methods; and effective protection of intellectual property rights relating to plants and seed. To find out more contact: Katharina Bednarz, Communication Manager at the European Seed Association; Tel. +327432860-2-; Website: http:www.euroseeds.org

Note to Subscribers

Subscribers are encouraged to play a proactive role in making this newsletter a useful platform for information exchange. Contributions are most welcome on the broad areas of seed system development; meetings, courses and electronic conferences; books and reviews; websites of special relevance to the seed sector; funding opportunities; requests to other readers for information and collaboration; and feature articles or discussion issues brought by subscribers. The Editor always welcomes suggestions on format and content, sent by e-mail to z.bishaw@cgiar.org

About ICARDA and the CGIAR

Established in 1977, the International Center for Agricultural Research in the Dry Areas (ICARDA) is one of 15 centers supported by the CGIAR. ICARDA's mission is to contribute to the improvement of livelihoods of the resource-poor in dry areas by enhancing food security and alleviating poverty through research and partnerships to achieve sustainable increases in agricultural productivity and income, while ensuring the efficient and more equitable use and conservation of natural resources.

ICARDA has a global mandate for the improvement of barley, lentil and faba bean, and serves the non-tropical dry areas for the improvement of on-farm water use efficiency, rangeland and small-ruminant production. In the Central and West Asia and North Africa (CWANA) region, ICARDA contributes to the improvement of bread and durum wheats, kabuli chickpea, pasture and forage legumes, and associated farming systems. It also works on improved land management, diversification of production systems, and value-added crop and livestock products. Social, economic and policy research is an integral component of ICARDA's research to better target poverty and to enhance the uptake and maximize impact of research outputs.

The Consultative Group on International Agricultural Research (CGIAR) is a strategic alliance of countries, international and regional organizations, and private foundations supporting 15 international agricultural Centers that work with national agricultural research systems and civil society organizations including the private sector. The alliance mobilizes agricultural science to reduce poverty, foster human well being, promote agricultural growth and protect the environment. The CGIAR generates global public goods that are available to all.

The World Bank, the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP), and the International Fund for Agricultural Development (IFAD) are cosponsors of the CGIAR. The World Bank provides the CGIAR with a System Office in Washington, DC. A Science Council, with its Secretariat at FAO in Rome, assists the System in the development of its research program.