



# SEED INFO

Official Newsletter of the WANA Seed Network



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Seed Info No. 26

January 2004

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Published by WANA Seed Network Secretariat, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; Tel: ++963-21-2213433/2213477; Fax: 963-21-2213490/2219380; E-mail: [icarda@cgiar.org](mailto:icarda@cgiar.org)  
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## EDITORIAL NOTE

Seed Info aims to stimulate information exchange and communication among seed staff in the Central, West Asia and North Africa (CWANA) region. The purpose is to contribute towards the development of stronger national seed programs which supply quality seed to farmers.



In the last two issues of Seed Info we presented a two-part article on seed policy issues as affected by international developments. In the first part we described the conceptual framework on the development of seed policy environment arising from the three main functions of seed and the increasing complexity of globalization of policies whereas in the second part we focused on alternative options for the development and implementation of these seed policies in developing countries. In the **VIEW**S section of this issue we feature the trends in seed legislation in developing countries focusing on deregulation once again by our regular contributor N.P. Louwaars, from Wageningen UR, The Netherlands.

The section on **SEED PROGRAMS** includes news from Afghanistan, Ethiopia, Iran, Morocco and Tunisia. The summary of activities of FHCRAA presents the progress on rehabilitation of agriculture and seed sector in Afghanistan. From Iran we report on the progress of the seed industry development with the establishment of new independent plant variety registration, seed and plant certification institute (PVRSPCI).

Readiness of sample divider, for which verifiable evidence is required under quality assurance, is among the factors affecting the accuracy of sample preparation. In the **HOW TO** section, your regular contributor, Abdoul Aziz Niane presents the calibration of sample dividers.

The **RESEARCH** section is aimed at capturing information on adapted research in seed science and technology that are of relevance and of immediate application for seed program development in the region or elsewhere. Within this context Sam Kugbei *et al.* presents an article comparing forage seed production at research station and at farm levels in northeast Syria. It is a known fact that the commercial potential of forage seed production is limited in developing countries. In this study, costs and revenue data for vetch, barley and lentil drawn from farmers' fields in northeast Syria and from seed multiplication plots at the International Center for Agricultural Research in the Dry Areas (ICARDA) in Aleppo, are used to discuss opportunities for commercializing forage seed production.

Seed Info is aimed at encouraging exchange of information and a transparent dialogue among professionals to debate and broaden our understanding of issues that affect the seed industry development. We encourage our readers to take the lead and share their views with others!

HAPPY NEW YEAR!

*Zewdie Bishaw, Editor*

## WANA SEED NETWORK NEWS

This section presents information related to the WANA Seed Network. It regularly updates the progress of Network activities and reports on the meetings of Steering Committee and WANA Seed Council.

### Harmonization Initiatives in CWANA

In Seed Info No. 24 we reported about a Regional Workshop on Review of Seed Programs and Seed Regulations that was held on 2-3 November 2002 in Karaj, Iran under the umbrella of the WANA Seed Network. The policy makers and senior seed program managers from Afghanistan, Azerbaijan, Iran, Iraq, Lebanon, Kazakhstan, Khyrgyzstan, Pakistan, Tajikistan, Turkmenistan, Turkey and Uzbekistan participated in the workshop.

The workshop participants identified and prioritized issues for harmonization at national and regional levels and made commitments to initiate the process in their respective countries. Each participant has agreed to serve as national resource person to undertake an extensive review and needs assessment of his respective national seed program.

The Secretariat of the WANA Seed Network in consultation with FAO has developed comprehensive guidelines to review national policies, laws and regulations and technical procedures for variety testing, evaluation, release and registration; seed quality control and certification; international seed trade; plant quarantine; and plant variety protection with relevant institutions as the first step towards harmonization. The guidelines were also translated to Russian and distributed to focal persons in Azerbaijan, Kazakhstan, Khyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The focal persons are expected to undertake an extensive review and needs assessment of rules and regulations in each country.

It is anticipated that in each country the study will be followed by a national consultative workshop to inform and consult all stakeholders to reach a consensus on policy and regulatory reforms

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required at national level and for possible collaboration/harmonization at the regional level.

ICARDA and FAO are working together to find alternative ways for merging the harmonization activities of the WANA Seed Network (ICARDA) and of the Consultative Forum on Seeds for NENA (FAO) and secure funding for the implementation of the harmonization process in the CWANA region.

### **Network Publications**

The WANA Seed Network continues to implement one of its primary functions, the exchange of information. Thirteen new and updated Focus on Seed Programs from member countries were posted at the Seed Unit website for access by the general public. The WANA Catalogue of Field and Seed Standards was also made available on the ICARDA website. The WANA Seed Directory and WANA Variety Catalogue have also been regularly updated on the website. For more information or access to some of the publications, please visit the website at [http://www.icarda.cgiar.org/seed\\_unit/SeedUnit/home.htm](http://www.icarda.cgiar.org/seed_unit/SeedUnit/home.htm). If you need hard copies of some publications, please contact the WANA Seed Network Secretariat at [z.bishaw@cgiar.org](mailto:z.bishaw@cgiar.org) or [a.vangastel@cgiar.org](mailto:a.vangastel@cgiar.org)

### **Change of Address**

The e-mail address of Mr Bahattin Bozkurt has been changed. Mr Bozkurt is the Country Representative of Turkey and member of its Steering Committee. His full address will be as follows: Bahattin Bozkurt, Deputy Director General, General Directorate of Agricultural Production and Development, Ministry of Agriculture and Rural Affairs, Milli Madafa Cad. No. 20 Kat 9, 06100 Bakanliklar, Ankara, Turkey; Tel: ++90-312-425 0175; Fax: ++90-312-4170026; E-mail: [bbahattin@tarim.gov.tr](mailto:bbahattin@tarim.gov.tr)

### **NEWS and VIEWS**

**N**ews, views, comments and suggestions on varieties and seeds are included in this section. It is also a forum for discussion among professionals in the seed sector.

### **Trends in Seed Legislation in Developing Countries: Dereulation**

#### *Regulatory reforms*

The first seed laws that were enacted in most developing countries were based on the blueprint model supplied by the Seed Industry Development Program of the FAO. The details depend to a large extent on the origin of the advisors assisting the development of the seed sector. India adopted a

truth-in-labeling system of the USA, but combined this with a very strict variety control system from Europe. The seed laws of many other countries simply took either the examples of France, Spain or UK as a basis, depending on their historical ties and official languages. While taking these European laws as a basis, they often picked the most stringent control mechanisms from these countries. For example the variety release system is based on government-run multi-location DUS and VCU tests whereas the marketing of certified seed of all crops is covered under comprehensive seed certification schemes. The level of regulation is commonly not in line with the level of institutional development of the country, leading to incomplete implementation and insufficient transparency. This creates a serious lack of credibility and inconsistent application of these regulations by the authorities.

Two rather opposite forces, globalization and localization, in development theory have inspired reforms to the standard regulatory systems. And both forces lead to calls for deregulation. Forces that relate to globalization and liberalization of markets oppose the existing regulations because the level of government control would hinder foreign investments in the seed sector and the emergence of domestic private seed enterprises. Moreover, similar to the influence of past development assistance projects which advocated the establishment of public seed enterprises and their regulatory basis, recent projects put the needs of farmers' seed production, participatory plant breeding and establishment of small enterprise as the political and development agenda. This draws national and international NGO's into the policy debate and present a different role for seed quality assurance institutions. The belief that farmers' seed systems are important for on-farm management of genetic resources puts pressure to relax variety release procedures.

Liberalization of trade requires the removal of obstacles by inefficient control agencies. The lifting of government controls may also assist the development of small seed enterprises especially where the inefficiencies of such institutions are translated into the certification and testing fees, and where market opportunities for local (non-released and possibly less uniform) varieties cannot be developed due to such restrictive seed laws.

The multinational seed companies that want to introduce varieties from their international breeding programs and local seed enterprises and farmer-groups that may want to provide seed of locally adapted varieties (landraces) would benefit from lesser variety controls. Large seed companies may work with a (ISO) certification of their own internal quality control system. Small-scale seed providers would also better thrive on brand names than on government certification, especially where

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the regulatory institutions lack the capacity to check quite often remote seed production fields.

The options to reform these regulatory and institutional systems depend to a large extent on the existing institutions and organizations, on bureaucratic considerations, on regulatory cultures and international pressures. Deregulation has to strike a balance between the opportunities (promotion of private enterprise) and reduced consumer protection due to relaxed controls. Proposals to deregulate and change compulsory regulations into voluntary ones have to go hand in hand with educating the seed users where many farmers are unable to read seed labels. A truth-in-labelling system can very well be combined with prescribing certain minimum standards in order to reduce risks to farmers.

#### *Developments that oppose deregulation trends*

Deregulation is a global trend in many sectors. The Sanitary and Phytosanitary Measures/Technical Barriers to Trade (SPS/TBT) agreement of WTO prescribes a framework for acceptable regulations for non-tariff trade barriers, which do not include extensive seed controls other than strictly necessary phytosanitary measures. There are, however, tendencies that go in opposite directions. These include particularly intellectual property rights, biosafety and access regulations on genetic resources.

First, the WTO-TRIPs agreement urges the development of plant variety protection laws in many developing countries. In contrast to conventional seed legislation that intend to abandon variety registration, the introduction of variety protection laws does require a detailed registration of the protected entity. Moreover, national and international seed trade will be influenced by protection claims, not so much because of government laws, but as the result of private law contracts and private market control organizations (e.g. ARPOV in Argentina) that regulate the seed trade. Claiming intellectual property rights is a voluntary choice of breeders, but there is a trend that even public agencies are registering their varieties, either for profit or as a means to prevent others from claiming ownership. This new variety registration system will largely replace the 'old' variety release procedures and will curtail the use of 'protected' varieties in farmers' seed systems. This is exacerbated by the development of patent-protected transgenic crops.

Second, the introduction of transgenic crops forced countries to develop biosafety regulations that make the release of these varieties both for testing and for commercial use, dependent on extensive release procedures. In case the use of such varieties becomes more widespread, the reduction in variety registration procedures due to deregulation in conventional seed laws will be replaced by

comprehensive release procedures under the biosafety laws.

Third, new developments within the framework of CBD may lead to even more variety regulatory systems than ever experienced under conventional seed laws. Access to genetic resources is made subject to national laws, based on Prior Informed Consent (PIC) and Mutually Agreed Terms that may have to be transferred from first user down the line, and which may lead to extensive variety regulations.

#### *Conclusion*

Deregulation in the seed sector is necessary to provide opportunities for both private enterprises and grassroot initiatives. It should, however, not lead to abandoning the protection of farmers who cannot judge the quality of the seed simply by its appearance. International policies towards deregulation are not as straightforward as they seem to be. The move towards free markets goes hand in hand with international forces to introduce new and in some cases even more stringent regulatory frameworks in the seed sector. This creates a dilemma for national policy makers when they have to combine national policies and international agreements in developing new regulatory and institutional arrangements to guide the seed sector. *N.P. Louwaars, Center for Genetic Resources, Wageningen, The Netherlands; E-mail: niels.louwaars@wur.nl*

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#### **National Seminar on Plant Variety Protection in Iran**

Intellectual property rights (IPR) have become important globally and situations are evolving very rapidly in the agricultural sector particularly in issues related to WTO/TRIPs. In Iran, a national seminar on plant variety protection was organized from 28-29 November 2003 under the auspices of the newly established Plant Variety Registration, Seed and Plant Certification Institute. The seminar was divided into four sessions. The first session consisted of introductory lectures on plant variety protection under UPOV Convention and was intended for clarifying the relationship between the UPOV Convention and other relevant international agreements on crop genetic resources conservation (CBD and ITGRFA (FAO)) and the protection of intellectual property rights of new plant varieties (WTO/TRIPS). The second session covered presentations on crop improvement of agricultural, horticultural and industrial crops in Iran followed by the presentation from ICARDA. The third session focused on technical and administrative issues including examination of varieties for granting rights, arrangements for testing and the organization of PVP offices at national/regional levels. The last session was a panel discussion on

clarifying outstanding issues raised during the seminar on the effects of PVP on genetic resources and intellectual property rights from national and international perspectives.



A large group of people attended the seminar including senior policy makers from the Ministry of Jihad-e-Agriculture, Directors of Agricultural Research Centers, senior staff of the newly established institute and other stakeholders. Two resource persons from UPOV (Vice Secretary-General and Senior Councilor) and one from ICARDA (Seed Systems Specialist) attended the seminar and made the presentations. The seminar was an 'eye opener' for policy makers, agricultural researchers and plant breeders. *Samad Mobasser, Plant Variety Registration and Seed Certification Institute, Karaj; E-mail: Sa\_mobasser@yahoo.com*

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### **International Seed Congress in Turkey**

A one-day International Seed Congress was held on 18 September 2003 in Ankara, Turkey. The Congress was organized by the Turkish Seed Industry Association and attended by over one hundred participants from Turkey, France (GNIS), Spain (Eurosemillas) and the Netherlands (NAK) as well as by national, regional and international organizations such as ISF (International Seed Federation), ICARDA, CIMMYT, etc. The meeting was part of a continuous dialogue among the stakeholders of national seed industry and to forge stronger partnership between the public and private sector and to solicit policy and regulatory support by the Government.

The meeting had three sessions where national and international experts made presentations. The first session dealt with opportunities and challenges of international seed trade aimed at informing the seed business community in Turkey. The organization and development of the seed industry in selected European countries were also presented to share experiences. The second session focused on the national policy and regulatory framework of the Turkish seed industry. Presentations were made on common agricultural and seed policy, market regulation and variety protection, and the support

available for business development from the relevant departments from the Ministry of Agriculture and Rural Affairs and local technology development foundation. The third session was a panel discussion by national policy makers and international experts on the trends in seed industry in general and the future of Turkish seed sector in particular.

ICARDA was invited to attend and contribute to this dialogue particularly in areas of private seed sector development. The meeting provided an opportunity to interact with colleagues from Turkey and international organizations. The Turkish Seed Industry Association is a partner for developing national seed associations in member countries of the WANA Seed Network. Discussion is already under way for the possibility of organizing a regional seed congress in Istanbul in 2004 to bring together the stakeholders of the seed industry in the CWANA region. Turkey has a dynamic emerging private sector and domestic seed industry valued at \$250 million (\$110 million in vegetables) and seed export worth \$22 million.

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### **FAO and ICARDA Join Hands to Strengthen Seed Sector in Central Asia and the Caucasus**

A regional FAO TCP project was prepared to establish more efficient seed production, distribution and marketing systems in Central Asia and the Caucasus (CAC). The project will analyze the organization, capacity and current developments of seed systems in the CAC region and acquaint public and private seed sector stakeholders with new technology and international standards and regulations. The project will also initiate regional consultation aiming at harmonization of trade impeding seed regulations.

A regular regional seed conference will be initiated to stimulate exchange of genetic resources, seed and technology. This first CAC Regional Seed Conference is expected to bring together seed sector stakeholders in the CAC region and international specialists in seed regulations and seed program management. The project will be coordinated through the ICARDA office in Tashkent and supported by staff from AGPS, FAO and Seed Unit, ICARDA. *A.J.G. van Gastel, Seed Unit, ICARDA, Aleppo, Syria; E-mail: a.vangastel@cgiar.org*

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### **African Agricultural Technology Foundation**

The African Agricultural Technology Foundation (AATF) resulted from over two years of consultations with several hundred African, North American and European stakeholders by the

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Rockefeller Foundation and the Meridian Institute. The consultations were held to determine the major underlying principles and an operational model for the AATF in addressing challenges in food security and poverty reduction. Stakeholder involvement was ensured through a Design Advisory Committee (DAC), comprising representatives from major stakeholder groups, (African NARS- Kenya, Ghana, Uganda), CGIAR centers (ICRISAT, CIMMYT, WARDA), African seed and biotechnology companies (Zimbabwe and Kenya), crop science corporations (Emergent Genetics, Monsanto, Pioneer HiBred, and Dow-AgroSciences), and donor organizations (USAID, Rockefeller Foundation, DANIDA, DFID).

The mission and core business of AATF is to link needs of resource-poor farmers in Sub-Saharan Africa with potential technological (biological, chemical, mechanical, process) solutions. It will:

- Identify and facilitate royalty free transfers of proprietary technologies through negotiation
- Enter into contractual agreements with existing institutions that will manage deployment of the technologies
- Ensure that subsequent constraints after access are addressed

For more information contact: E. Terry, P.O. Box 30709, Nairobi 00100, Kenya; Tel: ++254-020-630743; Fax: ++254-020-631499; E-mail: e.terry@cgiar.org; Website: <http://www.aafch.found.org>

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### **Cartagena Biosafety Protocol Take Effect**

The Cartagena Protocol on Biosafety, the first legally binding international agreement governing the movement of living modified organisms (LMOs) across national borders took effect on 11 September 2003.

The Protocol, adopted by the member governments of the Convention on Biological Diversity on 29 January 2000 after more than five years of negotiation, aims at ensuring adequate safety in the transboundary movement and use of LMOs resulting from modern biotechnology that may have adverse effects on the biological diversity and human health. At the date of entry into force certain provisions will take effect immediately:

- Countries shipping LMOs for intentional introduction into the environment will have to give prior notification of the first shipment to an importing country that is a party to the Protocol.
- Member countries of the Protocol will also be required to use the Biosafety Clearing House (BCH) to fulfill a number of specific obligations. The BCH is a largely Internet-based facility established under the Protocol to ease communications and exchange of information between the Parties.

- All shipments containing LMOs for international introduction into the environment will be clearly identified as such in the accompanying documentation which must specify the identify and characteristics of the specific LMOs contained in each shipment.

Additional information about the Protocol is available at <http://www.biodiv.org/biosafety> or <http://www.biodiv.org/biosafety/faqs.asp>

### **European Union Directives on GM Seeds**

The European Union (EU) has formulated a separate legislation for genetically modified (GM) seeds. All GM seed varieties have to be approved and authorized for cultivation in the EU under Directive 2001/18. Authorization is only granted after scientific assessments have concluded that the GM seeds do not pose any risks to the environment or to human health.

The EU Directives on the marketing of agricultural and vegetable seeds aim to improve the quality of seeds (e.g. identity and purity of the variety) that are currently marketed in the EU. Requirements were specifically made regarding sealing, labeling and documentation.

Further, a minimum threshold for the presence of authorized GM varieties was specified for seed lots of non-genetically modified (non-GM) varieties. To date, only GM of maize, swede rape, soya bean and chicory are authorized in the EU. Requests for authorization for GM of potato, beet and cotton have already been made.

The Commission proposes a threshold for GM-presence in conventional seeds according to the species, and the reproductive systems of the plants. Accordingly, thresholds specified for GM crops are as follows: 0.3% for swede rape; 0.5% for beet, maize, potato, cotton, chicory and tomato; and 0.7% for soya bean. *Source: Crop Biotech Update; October 2003.*

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### **ISTA Proficiency Tests on GMO Testing**

The adventitious presence of GM seeds in non-GM seed lots has increasingly become a problem for the international trade. Apart from the difficulty in establishing the threshold for GM seeds in conventional seed lots, the development of relevant, reliable and inexpensive methodology for detection, identification and quantification of GM content in conventional seed lots continues to be a challenge.

In view of the situation, ISTA laid down its position, established a new strategy and formed the ISTA GMO Task Force. The task force would

organize proficiency tests on GMO testing in conventional seed. The Second GMO Proficiency Test was initiated in February 2003. The purpose of this Proficiency Test was to check the capacity of individual laboratories to detect and, on a voluntary basis, to quantify the presence of GM seeds in samples of conventional seed of maize. The objective of data analysis was not to identify deviating laboratories but to compile their performances and database for the laboratories.

Each participating laboratory received a set of 10 maize samples: three negative samples (no GM seeds added) and 7 positive samples. From the seven samples, three were spiked with 0.7% GM seeds (MON810) and four were spiked with 1.4% GM seeds. Laboratories could use the method they thought appropriate for the test.

A total of 52 laboratories received the samples and 47 submitted their results for evaluation by 27 June 2003. All 47 laboratories reported qualitative results that could be evaluated (Table 1). Thirteen laboratories reported semi-quantitative tests. Nineteen laboratories reported quantitative test results, with analyzable data, and performed in total 20 test series and one laboratory applied two different methods.

Table 1. Number of maize seed samples tested and percentage reported as false negative or positive.

Samples types	Samples tested (number)	Samples reported false (number)	Samples reported false (%)
Negative samples	141	7	5
Positive samples	329	10	3
0.70%	141	8	5.7
1.40%	188	2	1.1
All samples	470	17	3.6

If you are interested in more information or would like to participate in the ISTA Proficiency Test in GMO Testing, contact the ISTA Secretariat directly at [ista.office@ista.ch](mailto:ista.office@ista.ch), or visit the website at [www.seedtest.org](http://www.seedtest.org). Sarah Anne Meier, ISTA, Zuerichstrasse 50, P.O. Box 308, 8303 Bassersdorf, Switzerland; Fax: ++41-1-8386001; E-mail: [sarah.meier@ista.ch](mailto:sarah.meier@ista.ch); Website <http://www.seedtest.org>

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### UPOV Membership on the Rise

Tunisia became the fifty-third member of UPOV by depositing its instrument of accession on 31 July 2003 and designated a responsible office for plant variety protection. The Service d'Homologation et de Protection des Obtentions Végétales of Direction Général de la Protection et du Contrôle de la Qualité des Produits Agricoles is assigned the responsibility for implementing the plant variety protection. Tunisia is the first country from the

West Asia and North Africa region to become a full member of UPOV. From Central Asia, Kyrgyzstan is already a member of UPOV. This brings to two the countries from the ICARDA mandate region which are now members of the UPOV under the 1991 Convention. Source: <http://www.upov.int>

### The Egyptian Seed Association

The Egyptian Seed Association (ESAS) is not-for-profit NGO established in March 1998 to represent the private sector of the Egyptian seed industry. ESAS has over 180 national, regional and international members and a number of specialized councils such as: Maize, Vegetables, Field Crops, Potato, Traders, Exporters, Importers, Food Processors, Tissue Culture and Seedlings, and Biotechnology Councils. It has four permanent committees to achieve its objectives: (a) Policy Reform Committee; (b) Code of Ethics Committee; (c) Quality and Technology Transfer Committee; and (d) Networking and Foreign Relations Committee.

ESAS is an official member of legislative and key governmental committees regulating the Egyptian seed industry: Variety Release Advisory Committee, Variety Registration Committee, Committee for Privatization of Seed Production, Mediation and Arbitration of Disputes (according to ISF rules) and WTO's contact point for intellectual property rights.

ESAS is an affiliate of international associations such as AFSTA, ISF, APSA and BioAfrica. It serves national and international members by advocating policy and regulatory reforms and facilitates links between local and international seed companies and organizations. The association serves the global seed industry through hosting or organizing international conferences and meetings such as of ISF and AFSTA. ESAS promotes public awareness on the role of seed trade associations at regional and global levels. For more information contact: Adel Sayed Ahmed, General Manager, ESAS, 35 Gamet El-Dawal El Arabia Street, Mohandesen 12411, Cairo, Egypt; Fax: ++20-2-3498994; E-mail: [asa@esasegypt.org](mailto:asa@esasegypt.org); Website: <http://www.esasegypt.org>

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### First Hybrid Barley Hits the Market

In July 2003, Syngenta announced the introduction of the first hybrid barley variety. Colossus is a conventionally bred hybrid feed barley approved earlier in the year in the United Kingdom. According to the press release, the new variety was bred for improved performance and demonstrates 'hybrid vigor'. Colossus will be sold in the UK as part of a first-of-its-kind crop production program, the Hybrid Barley System. The system provides

growers with the benefits of the new variety, three crop protection products-Syngenta's fungicides Amistar and Unix, and plant growth regulator Moddus as well as a comprehensive growing program.

Field trials have demonstrated that the Hybrid Barley System delivers yield improvements of 10% and more compared with standard barley varieties. The hybrid barley also will be marketed in Denmark, France and Germany once variety approvals have been received. Syngenta is a world-leading agribusiness company. It ranks third in the high-value commercial seed market with sales of US \$6.2 billion in 2002. Further information is available at website: <http://www.syngenta.com>

### **CONTRIBUTIONS from SEED PROGRAMS and PROJECTS**

**I**n this section we invite national seed programs, projects, universities, regional or international organizations to provide news about their seed related activities.

#### **Activities of Future Harvest Consortium to Rebuild Agriculture in Afghanistan (FHCRAA)**

With the USAID grant, a CGIAR-Future Harvest Consortium to Rebuild Agriculture in Afghanistan (FHCRAA) was established to implement short- and long-term interventions in the country. ICARDA is a lead center for the Consortium.

Several achievements have been made by FHCRAA over a very short period of time which form a firm basis for future development of agriculture in Afghanistan.

#### *Seed Supply*

*Emergency seed supply for 2002 spring planting:* Approximately 3500 tonnes of high quality wheat seed was procured from Pakistan and distributed to Afghan farmers through a network of NGOs, in close coordination with the Ministry of Agriculture and Livestock. Farmers were provided with quality seed for planting and by saving seed for the next planting season a much longer and broader benefit of the spring distribution is anticipated.

*Seed supply for fall 2002 planting:* More than 5000 tonnes of seed produced in Afghanistan was distributed for 2002 fall planting. Rice, barley, chickpea, lentil, flax, sesame, mung bean, alfalfa, berseem and clover were purchased and distributed.

*Pioneer village-based seed enterprises established:* Village-based seed enterprises have been initiated in Baghlan, Kunduz, Nangarhar and Takhar and 260 tonnes of seed has been distributed to 821 farmers. Mobile seed cleaners, specifically designed for use at the farmer level, have been

provided. Farmers assisted and trained in seed production practices including marketing. These farmers' seed multiplication fields will provide approximately 5000 tonnes seed of adapted varieties. The aim is to produce seed in a cost efficient manner for the village and beyond.

*Potato seed program initiated:* This sub-project was implemented by the International Potato Center and aimed at supply of quality potato seed to Afghan farmers.

#### *Regulatory functions for the seed Industry*

The FHCRAA is assisting the Government of Afghanistan to carry out its regulatory function in ensuring that quality seed reaches the farming communities.

*Code of conduct workshop:* A code of conduct for seed production and marketing was developed and published. This code is now used for all activities in seed production, seed marketing and seed import.



*Draft seed law and national seed policy:* A draft national seed policy and seed law have been submitted to the Government, aimed at integrating Afghanistan into the developments that are taking place in the global seed industry.

*Rehabilitation of seed testing and quarantine laboratories:* Two main seed testing laboratories (Badem Bagh, Kabul and Jalalabad, Nangarhar) and two satellite stations (Baghlan, Kunduz) were established and seed testing work resumed. The consortium also supported equipping seed testing station in Herat.

#### *Rehabilitation of Research Capacity*

*Research stations:* Several research stations (Baghlan, Jalalabad, Kabul, Kunduz and Takhar) and sub-stations were rehabilitated, farm equipment provided and formal research activities resumed. During the 2002/03 season, wheat, barley, chickpea, lentil, faba bean, tomato, onion and pepper research experiments were planted. Several international nurseries were sent to Afghanistan for evaluation.



*Human resources development:* Training courses were organized in: (a) Seed production, (b) Seed quality assurance, (c) Variety management, (d) Seed production and enterprise management, (e) Potato seed multiplication, (f) Sun pest control, (g) Experimental station operation and management, (h) Training on use of farm machinery, (i) Operating meteorological equipment/stations, and (j) Management of water resources in the dry areas.

#### *Needs assessments*

To target interventions and to develop a vision for future rural Afghanistan, four needs assessments were carried out on: (a) Seed systems & crop improvement, (b) Soil & water management, (c) Livestock, feed & rangelands, and (d) Horticulture. As an integral part of these needs assessment (i) household surveys, (ii) key informant interviews, and (iii) wrap-up meetings were organized.

#### *Communication, public awareness, radio broadcast*

As part of the efforts to provide agricultural radio broadcasts for Afghan farmers, weekly halfhour programs on agricultural topics are being produced and distributed to radio stations throughout Afghanistan. These programs were made with strong emphasis on providing farming families with useful information. The Afghanistan Ministry of Agriculture Communications Office for Radio has been re-equipped, training in digital production resumed and media extension services to farmers via radio provided.

#### *Short-term High-impact Projects*

The International Potato Center is rapidly increasing the supply of virus-free potato seed in Afghanistan by stimulating the development of farmer-based seed multiplication system.

Scientists from CIMMYT identified nursery locations and seed was distributed to 20 locations. Afghan scientists participated in training courses in Mexico.

Michigan State University utilized satellite remote sensing and GIS technology for rangeland management project. Web-based maps are provided to agricultural professionals and farmers along with training in interpretation and utilization of the data for improved rangeland management (<http://35.8.163.126/research/>).

The International Center for Biosaline Agriculture provided apprenticeships for extension agents to improve basic skills in designing and operating improved irrigation systems suitable for saline soils and water.

The Danish Committee for Aid to Afghan Refugees is introducing best management practices for on-farm water management and irrigation. Eight Afghan scientists were trained at ICARDA headquarters.

A team from Cornell University held a workshop on 'Best Management Practices for Water and Soil' at the College of Agriculture in Kabul.

A joint project of ICARDA and the University of Vermont addressed the sunn pest control through training and providing information to growers and NGOs. *A.J.G. van Gastel, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; E-mail: a.vangastel@cgiar.org*

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#### **Seeds for Rehabilitation of Agriculture in Iraq**

ICARDA has been assisting the rehabilitation of the seed and crop improvement program in Iraq by providing more than 20 tonnes of high quality seed. The seeds will be used by the agricultural component of Agricultural Rehabilitation and Development (ARDI) project in Iraq. ARDI project is funded by USAID and implemented by Texas A&M University to carry out technology demonstrations. ICARDA provided seed of 4 varieties of barley, 2 varieties of bread wheat, 3 varieties of durum wheat, 1 variety of lentil and 2 varieties of chickpea.



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#### **Independent Seed Certification Agency in Iran**

In October 2002, the Seed and Plant Improvement Institute (SPII) in collaboration with the Seed Unit of ICARDA and the Iran/ICARDA Agricultural Research Project organized the First Iran/ICARDA National Seed Workshop bringing together national stakeholders and a number of international experts to discuss alternative ways for the improvement of the national seed industry in Iran. The workshop reviewed the status of the national seed industry highlighting key policy, regulatory, institutional and technical issues with particular reference to seed and planting material production and supply of agricultural, horticultural and industrial crops. Several key recommendations were made during the meeting including the need to sanction national seed policy, seed laws and regulations to encourage

private sector participation. Among the key recommendations was for the government to establish an independent seed certification institute and to consider the enactment of plant variety protection law.

In 2003, a remarkable progress was made in the national seed policy and regulatory environment. The Government of Iran passed an Act of Plant Variety Registration and Certification of Seeds and Planting Materials (Seed Law 33709) and established a fully independent institute responsible for plant variety registration and seed and planting material certification. The Plant Variety Registration and Seed Certification Institute (PVRSCI) has an overall mandate for the implementation of plant variety registration, variety protection, seed and planting materials certification and adaptive research in seed technology. The organization is located in Karaj and took over the facilities and the responsibilities from the Seed and Plant Improvement Institute.



PVRSCI will have four departments: plant variety registration, seed certification, vegetative planting material certification and seed testing laboratory. The institute would establish referee testing laboratory to coordinate the activities of regional laboratories and would like the central laboratory to be an accredited member of ISTA. A number of draft policies and regulations was prepared by PVRSCI (draft national seed policy, national vegetative planting materials policy, seed legislation) and these will be further discussed with stakeholders before submission to the Cabinet. The institute will seek membership in international organizations (ISTA, OECD, UPOV) and regional associations (APSA and WANA Seed Network) currently operated by the Seed Unit of ICARDA. *Samad Mobasser, PVRSCI, P.O. Box 31535-3383, Karaj, Iran; E-mail: Sa\_mobasser@yahoo.com*

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#### **Morocco Released Hessian Fly Resistant Varieties**

The INRA (Morocco) and ICARDA announced the official release of five durum wheat varieties (INRA 1804, 1805, 1807, 1808, and 1809) combining resistance to Hessian fly and tolerance to drought. Hessian fly (*Mayetiola destructor*) is an

insect pest of durum and bread wheat responsible for severe reductions in production. In Morocco, the crop losses from Hessian fly infestations in the 2002/03 cropping season could reach US\$200 million. The release and subsequent adoption of resistant varieties is key to breaking the drought-Hessian fly cycle prevailing in many rain fed areas, and preventing crop failure.

Durum wheat is known for its susceptibility to Hessian fly, especially in the Mediterranean region. The release of these varieties by the Moroccan national program will significantly boost the production in the region. *Source: The Week at ICARDA; 10 July 2003 No. 776.*

#### **Tunisia Released Food Legume Varieties**

The INRAT (Tunisia) and ICARDA released a total of three chickpea, two lentil and three faba bean varieties in Tunisia. The three released chickpea varieties, Beja 1 (INRAT93-1), Neyer (FLIP84-92C) and Bouchra (FLIP84-79C) are all partially resistant to *Ascochyta* blight. However, Beja 1 is resistant against *Fusarium* wilt race 0. In 2003/4 crop season about 15-20% of chickpea area is expected to be sown with winter chickpea varieties in Tunisia. Likewise two lentil varieties Siliana (FLIP90-13L) and Kef (78S26002) were released. Moreover, small seeded fababean, Bachaar (FLIP84-59FB) and Badi (selection from landrace) and large seeded Chahbi (S83182) were also released. *Source: The Week at ICARDA, No 801, 15 January 2004.*

#### **Ethiopia Released 14 New Crop Varieties**

In 2003, 52 varieties of 14 crop species were evaluated under the auspices of the National Variety Release Committee in Ethiopia. The Committee released one variety each of barley, *tef*, sorghum, field pea, lentil, sorghum and potato. Moreover, five haricot bean and three soya bean varieties were released. The barley variety Shedho is adapted to moisture stress areas in Wello in northern Ethiopia. The lentil (Assano) and field pea (Weyyitu) varieties are adapted to the highlands of Bale in southeastern Ethiopia. *Source: AgriTopia 18(3), July-September 2003/9.*

### **HOW TO**

In this section we provide technical/practical information that seed sector staff may find useful. It is simple to follow instructions for technical staff in seed production and quality control.

#### **How to No 28: Calibration of Seed Dividers**

A representative sample is a prerequisite for laboratory seed testing and the accuracy of the test results. Seed dividers are used to prepare

representative submitted and working samples from composite and submitted samples respectively. For a sample to be truly representative, all the components existing in the original lot from which the sample is drawn are to be represented at the same rate in the sample.

The Chief Officer at the Seed Testing Station for Scotland devised a simple method for calibration of seed dividers to fulfill quality assurance requirement in seed testing laboratories. The method can be summarized in the following steps:

1. Prepare a calibration seed sample in line with the information provided in the table below. The method can be adapted to your laboratory and it is not necessary to use the same species. The essence is that seed and admixture will be easily separated using a proper sieve.
2. Mix the seed species and the admixture well and divide into two portions (a & b) using the divider to be calibrated.
3. Record the weight of a, b and a+b. The difference between a and b should be within predetermined standard (i.e. 5%).
4. Separate the admixture from the seed using sieves with the right perforations.
5. Determine the percentage of admixtures in each of the two half samples (a and b) and in the total weight (a+b) of the original calibration sample.
6. Check how close the figures reflect the original seed-admixture composition in the calibration sample (a+b) and in each of the two halves (a and b).
7. Check whether the deviations are within tolerance, using tolerated differences for the separation of an admixture in a sample' (Miles, 1963).

Dividers	Seed species	Admixture	Calibration sample (g)	% Admixture
Centrifugal	Wheat	Brassica	800	15
Riffle divider (small seeds)	Ryegrass	Wheat	220	35
Riffle divider (large seeds)	Bean	Spinach	1200	10

The calibration should be carried out according to a specific timetable and calibration samples should be kept in a moisture proof container after use. The sample should be renewed whenever its size is considerably reduced or the composition significantly changed. The level of these changes is left to each laboratory to decide. *Abdoul Aziz Niane, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; E-mail: a.niane@cgiar.org*

## RESEARCH NOTES

Short communication of practical oriented research or relevant information in agriculture or seed technology are presented in this section.

## Comparison of Research-based Forage Seed Production with Farm-level in Northeast Syria

by

S. Kugbei, A. Niane and M. Darwich

### Abstract

*The potential of forage seed production in developing countries is generally limited. Vetch (*Vicia sativa*) and barley (*Hordeum vulgare*) are important forage crops in Syria; lentil (*Lens culinaris*) straw is an important source of animal feed and is occasionally grown as fodder. In this study, costs and revenue data for vetch, barley and lentil drawn from farmers' fields in northeast Syria and from seed multiplication plots at the International Center for Agricultural Research in the Dry Areas (ICARDA) in Aleppo, are used to discuss opportunities for commercializing forage seed production. The results of this study demonstrate that high potential yield, appropriate harvesting methods and commercial use of straw are important factors, which determine profitability in cultivating vetch and lentil. Despite the low value of its straw, the cultivation of barley crop can be profitable in the rainfed areas, because the variable costs of production are low and no fertilizer is used. Under research conditions on the ICARDA farm, high yield potential combined with efficient mechanical harvesting of grain and straw render barley cultivation cost-effective. The case of barley demonstrates the important role that appropriate and efficient harvesting methods play in contributing to overall cost-effectiveness. That a potential exists for farmers to obtain high margins suggests that it is possible to promote cost-effective seed production at the local level.*

### Introduction

In comparison with main food crops, the commercial potential of forage seed production in developing countries is generally limited (Turner, 1998). Forage seed production is also risky, particularly if the forage seed serves no useful purpose other than being sown. This risk means that enterprises producing such forage seed should know precisely the effective demand of farmers, since there may be no alternative use for the unsold seed. The demand for seed will depend on the demand for the forage crop needed as a livestock feed. The commercial demand for forage crops is weak in many developing countries, because of poorly developed livestock sectors in which animals are kept mainly for subsistence. However, if the livestock sector develops, particularly in terms of value added industries, it is expected that demand for intensive forage cultivation will increase. This will translate into a 'derived demand' for seed, in order to sow the required forage crops. The concept of derived demand is useful, as it helps to explain (1) the interrelationships between livestock development, forage promotion and seed production (Loch and Fergusson, 1999), and (2) how these factors could be used as integral components of livestock policies.

The margin of profit that seed producers receive will depend on the extent to which the sale price of seed covers the actual production costs incurred. Both technical and socioeconomic factors will influence production costs. Whether farmers buy forage seed from outside, or whether they produce their own will depend, largely, on the price they have to pay in relation to the benefits they expect to receive from using the seed. This study, therefore, compares the costs and margins associated with seed coming from a research organization with those of seed produced by farmers, and the factors that influence these costs. The crops considered here are vetch (*Vicia sativa*) and barley (*Hordeum vulgare*), which are important forage crops in Syria, and lentil (*Lens culinaris*). Lentil is not a typical forage crop but its straw is an important source of animal feed in Syria and is occasionally grown as fodder where the whole plant being grazed green or cut and fed to livestock (Nygaard and Hawtin, 1981).

#### Sources of data

Syria is divided into five agricultural zones on the basis of annual precipitation. From a total of area of 18.5 million ha, 14.6, 13.3, 7.1, 9.9 and 55.1% is in Zones 1, 2, 3, 4 and 5, respectively. Rainfall is the major factor that determines yield and total crop production, as most of the cultivated area is rainfed (Jumaa, *et al.*, 1999; ICARDA, 2000).

A total of 177 formal interviews were conducted in July 2001. These involved farmers in three districts within northeast Syria, namely Malkiyeh in Zone 1, for vetch (n = 61); Hassekeh in Zones 3 and 4, for barley (n = 55) and Qamishli in Zone 2, for lentil (n = 61). Apart from a small proportion of the group, who were seed growers for the General Organization for Seed multiplication (GOSM), most of the farmers cultivated their crops for use as grain, although they usually set aside a certain proportion for use as seed.

Data were collected from each farmer for the past two seasons (1999/00 and 2000/01). There was significant crop loss, as a result of drought, during the 1999/00 season, while the following season (2000/01) was good. The results of this study, therefore, provide an interesting comparison between two contrasting seasons. Malkiyeh is located in Zone 1, which receives the highest average rainfall. Farmers in this area grow wheat as the main crop; followed by vetch and chickpea. Informal production and distribution of vetch seed has continued in the Malkiyeh area following an initial distribution of seed by GOSM in the late 1980s, as part of its contract growers scheme. Although GOSM stopped distributing certified vetch seed a few years later, cultivation of this crop has continued to expand and now covers a large area including many villages. Hasakeh district comprises both Zones 3 and 4. Most of the farmers interviewed in this district grow barley followed by irrigated wheat in terms of importance. The farmers interviewed in the Qamishli district

grow a local red lentil cultivar, although wheat is their most important crop. For comparison, data on costs, yields and prices were also obtained from the ICARDA Seed Unit for the seed multiplication of vetch, barley and lentil during the 1999/00 and 2000/01 crop seasons.

#### Results and discussion

The farmers in Malkiyeh have adopted vetch because of certain attractive attributes, including a high rotational value, in improving physical properties and fertility of the soil; a high seed yield and vigorous vegetative growth that suppresses weeds. However, the farmers in this area currently encounter problems associated with cultivar purity and seed quality. Since GOSM discontinued formal seed multiplication and variety replacement, all the farmers grow local varieties of vetch. The farmers save their own seed and sell grain and straw as animal feed. Since Malkiyeh is predominantly a crop growing area, having little animal production, most of the vetch grain and straw they produce are sold to traders and to national livestock organizations for use outside the district. Most farmers harvest vetch manually and then thresh mechanically, during which process the straw is also chopped up, bagged, and then sold as livestock feed.

Of the farmers who grew lentil during the 2000/01 season, up to 60% of those interviewed harvested their crop manually and threshed it mechanically. As in the case of vetch in Malkiyeh, the lentil farmers in Qamishli collected the chopped straw as animal feed, which was a key reason why they harvested their crop manually. The remaining 40% of the farmers preferred fully mechanized harvesting, despite seed loss and non-recovery of straw by this method. They could not collect straw manually after mechanical harvesting, because the cost of doing so would far exceed the financial value of the straw. Another reason that many farmers chose mechanical harvesting was the high labor cost associated with manual harvesting (SYP4500 ha<sup>-1</sup>) compared to combine harvesting (SYP2000 ha<sup>-1</sup>).

All the farmers in Hasakeh grow a local black-seeded variety of barley, which is commonly called *Arabi Aswad*. Relatively large areas are cultivated with barley; all agronomic operations for this crop are fully mechanized. Both grain and straw are used exclusively for feeding animals. Since the grain yield of barley in Hasakeh is generally low, farmers do not normally have surplus quantities they can keep as seed. They usually obtain their seed from GOSM. Also, the straw yield of barley is low. This makes its collection and handling after combine harvesting rather expensive. Therefore, the barley stubble is usually either reserved for direct grazing by animals or ploughed back into the soil. In very dry years, the entire standing crop is left for grazing and is not harvested. As an

alternative to barley straw, farmers use the straw of irrigated wheat, which produces more straw and is cheaper to collect and chop up.

Results of average costs, returns and gross margins show that farmers in northeast Syria (Table 2) can obtain high margins, especially during a year with good rain fall (e.g. the 2000/01 season). The results, once again, confirm rain fall as a key factor in determining whether or not farmers in northeast Syria obtain good yields and high margins. While vetch farmers in Malkiyeh (Zone 1) received good yields during both the 1999/00 and 2000/01 seasons, the situation was different in the case of lentil and barley farmers in Qamishli (Zone 2) and Hasakeh (Zones 3 and 4), respectively. The yield of lentil was very low during the dry season of 1999/00, while barley farmers had virtually no yield at all. However, the situation improved dramatically during the following season, which had adequate rain fall.

In the case of all three crops, grain was the main product. However, straw contributed significantly to overall income, particularly in the case of vetch.

The importance of straw as a source of income in the cases of vetch and lentil becomes more apparent when the farm-level figures from northeast Syria are compared with those of the ICARDA farm, where straw is not collected and sold, but is incorporated into the soil as organic matter. The operations at ICARDA are research-based; crops are produced according to strict technical guidelines to ensure high seed quality.

Therefore, the seed from ICARDA represents seed that enterprises would normally produce under certification. This method of seed production contrasts with operations carried out by farmers in northeast Syria, who produce grain and reserve only part of the crop as seed.

High yields, of 3294 and 2500 kg ha<sup>-1</sup> were obtained for an improved barley variety, *Tadmor*, on the ICARDA farm during the 1999/00 and 2000/01 seasons, respectively. This variety is not yet widely used by farmers in northeast Syria, who still use a local landrace, *Arabi Aswad*. This barley landrace has lower average yield potential, 1000 kg ha<sup>-1</sup>.

Table 2. Farm level margins ha<sup>-1</sup> for vetch, lentil and barley in northeast Syria.

Item (value in SYP <sup>1</sup> )	1999/2000			2000/2001		
	Malkiyeh (Vetch)	Hasakeh (Barley)	Qamishli (Lentil)	Malkiyeh (Vetch)	Hasakeh (Barley)	Qamishli (Lentil)
Income from sale of seed, straw and rejects	15519	383	69	17804	25162	6959
Cost of seed, land preparation and sowing	2598	4087	2232	2573	4281	2099
Other variable production costs	6859	669	0	8901	5933	1480
Total production cost	9457	4756	2232	11474	10214	3579
Net revenue (gross margin)	6062	-4373	-2163	6330	14948	3380
Net revenue as percent of total cost	64	-92	-97	55	146	94
Straw value as percent of total income	15	36	100	12	5	3

<sup>1</sup>SYP (Syrian pound) 50 equals approximately US\$ 1

Table 3. Margins ha<sup>-1</sup> for vetch, lentil and barley grown seed production plots at ICARDA.

Item (value in SYP)	Vetch		Barley		Lentil		Barley <sup>1</sup> 2001
	1999/01	2000/01	1999/01	2000/01	1999/01	2000/01	
Value of seed & rejects (+ straw for barley)	8379	14700	48548	34350	11375	26900	14548
Cost of seed, land preparation and sowing	6500	6500	4600	4600	6900	6900	4600
Other variable production costs	5573	5633	6304	6145	5812	6246	5842
Total production cost	12073	12133	10904	10745	12712	13146	10442
Net revenue (gross margin)	-3694	2567	37644	23605	-1337	13754	4106
Net revenue as percent of total cost	-31	21	345	220	-11	105	39
Straw value as percent of total income	0	0	19	20	0	0	19

<sup>1</sup> Assuming seed yield of 987 kg (farmers' yield at Hasakeh in 2000/01) and corresponding straw yield at ICARDA; Source: Seed Unit, Aleppo, Syria

Moreover, the ICARDA research farm is in a region that has an average annual rainfall of 340 mm, which, in comparison with Hasakeh, is a generally more favorable environment, especially if the improved management practices at ICARDA are also taken into account. In vetch and lentil, manual harvesting and related operations are costly for farmers. These operations account for 41 and 34% of total cost in vetch and lentil, respectively compared with 15% combine harvesting cost in barley. Mechanical harvesting of vetch and lentil seed at ICARDA does not improve margins because of significant seed and

straw loss that occurs when using this method. However, the mechanical harvesting method used for barley is more appropriate, in which case seed recovery is high and the straw is directly bound into bales using specialized equipment. This method resulted in high margins, 345% and 220% for corresponding high grain yields of 3294 and 2500 kg ha<sup>-1</sup>, respectively during the 1999/00 and 2000/01 seasons. With the results obtained during 2000/01 season, this margin would drop to 39%, assuming the ICARDA seed farm was to obtain the average seed yield of 987 kg/ha and the corresponding straw yield

as those in Hasakeh (Table 3). A suitable mechanical harvesting method, one which minimizes seed loss in vetch and lentil and recovers straw, would improve the margin figures in the cases of vetch and lentil seed production at ICARDA. Manual harvesting is a problem also in other important vetch growing areas of northwest Syria (Bounejmate *et al.*, 1998).

#### Conclusion

This study has demonstrated that demand for grain and straw (as animal feeds), and for forage legumes (for direct grazing) creates a need for farmers to cultivate annual forage crops. For this, they require seed to sow. The greater the demand by livestock owners for certain varieties, the greater the demand for grain or seed of these varieties.

The importance of straw and grain as sources of additional revenue demonstrate that enterprises could enhance their profitability if they could diversify their operations beyond seed, to include the sale of related products such as grain and straw. To achieve this, farmers need varieties that are suitable for mechanical harvesting. Such methods should also maximize the recovery of both seed and straw during harvest.

The study has also revealed that farmers in Northeast Syria can get good margins, in comparison with formal seed production such as that carried out at ICARDA. This indicates a potential for farmer producers at village level to produce seed cost-effectively and to distribute it within the community. ICARDA is used, in this paper, as an example of a formal seed producer. However, seed production at ICARDA is not a commercial activity, although the supply of early generation seed to national programs helps in promoting new cultivars and providing start-up support for large-scale multiplication.

At the level of policy, it is essential that projects in livestock development are integrated with those dealing with forage promotion and forage seed multiplication, because of the complementarities and causal relationships involved. Information from this study could be useful in developing commercial opportunities at the local level that could benefit potential seed producers, livestock farmers and related value added industries in Syria and other countries.

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### MEETINGS and COURSES

**A**nnouncements of meetings, seminars, workshops and training courses are made. Please send us national, regional or international announcements for workshops, seminars and training courses organized in your country for inclusion in the next issue.

#### Conferences

**Third AFSTA Congress, 24-26 March 2004 Tunis, Tunisia.** The AFSTA congress will take place in Tunis, from 24-26 March 2004. Adequate support was secured to make the occasion a well-attended event. For more information contact: Mr. Raouf Ghariani, Managing Director, Espace Vert, 22, Rue 7134 El Manar II, Tunis, Tunisia; Tel: ++216-7-333858; Fax: ++216-71-344158; E-mail: espace.vert@planet.tn

**ESAS 2004 Conference: Seed Industry-Future and Challenges, 19-21 April 2004, Cairo, Egypt.** The conference will be organized and hosted by the Egyptian Seed Association and will discuss a variety of issues pertaining to the international and regional investment in the seed sector. The main purpose of the event is to enhance export of seeds, fresh and processed vegetables by bringing together the scientist and experts from universities, research institutes, seed industry and organizations from the world to share their views and visions. For more information, contact: ESAS, 35 Gamet El-dowal El-Arabia St., Mohandesseen, Giza, Egypt; Fax: ++20-2-7498994; E-mail: events@esasegypt.org or info@esasegypt.org; Website: <http://www.esasegypt.org>

**27th ISTA Congress, May 13-24, 2004, Budapest, Hungary.** The Congress in Budapest will be divided into three parts: (i). ISTA Technical Committees meetings (13–15 May); (ii) ISTA Seed Symposium (May 17–19); and (iii) Ordinary Meeting of ISTA (20–21 May). The Post-Congress tours will be from 22–24 May 2003.

The meetings of Technical Committees will discuss the International Rules for Seed Testing, training and education program, new publications of the Technical Committees and Rules Changes 2004. These meetings are open to all representatives of public and private sector and interested seed scientists. The ISTA Seed Symposium will be held under theme 'Towards the future in seed production, evaluation and improvement' and is structured into 7 sessions. During the Ordinary Meeting the voting delegates, appointed by their respective governments of 73 ISTA member countries, will decide on the latest rules change proposals, governance, voting rights and the authorization rights to issue ISTA Certificates.

After the historic changes of the ISTA Constitution in the 1995, the 27th Congress could become a significant milestone in the history of ISTA. For more details please contact: ISTA, Zuerichstrasse 50, P.O. Box 308, 8303 Bassersdorf, Switzerland; Tel: ++41-1-8386000; Fax ++41-1-8386001; E-mail: [ista.office@ista.ch](mailto:ista.office@ista.ch); Website: <http://www.seedtest.org>

**World Seed Congress 2004, 24-26 May 2004, Berlin, Germany.** The annual ISF Congress will take place in Berlin, Germany on 24-26 May 2004. Berlin expects to see a record number of delegates from over 70 countries. The congress provides a: (i) forum for discussion on topics ranging from crop specific issues to trade and arbitration to intellectual property and plant breeding; (ii) meeting place for colleagues to exchange scientific, technical and commercial information; and (iii) floor for trading seed and planting material, and exhibition booths. The ISF Breeders Committee will organize an international seminar on Intellectual Property and Access to Plant Genetic Resources after the congress on 27 and 28 May 2004. The main items on the agenda are: (i) Essential derivation: codes of conduct for several crops and possible arbitration procedures in case of disputes; (ii) Organic agriculture: use of organic seed, coexistence of organic and other forms of agriculture; (iii) Sustainable agriculture, renewable energy and raw materials; (iv) Presentation of the German seed industry; (v) Traceability and identity preservation; and (vi) Plant/pest relationship: recommended terminology to be used by ISF members. For more information, contact the ISF

Secretariat: Chemin du Reposoir 7, 1260 Nyon, Switzerland; Fax: ++41-22-3654421; E-mail: [isf@worldseed.org](mailto:isf@worldseed.org); Website: <http://www.worldseed.org>

## Training

**Genetic Resources and Intellectual Property Rights—Pathways for Development, 3–21 May 2004, Svalöv, Sweden:** In recent times, there has been a growing appreciation of the role of Intellectual Property Rights (IPR) in stimulating human capital formation, knowledge diffusion, benefit sharing and technological innovation, necessary for national development. International conventions and treaties together with the rapid biotechnology development have led to new conditions for the access of genetic resources and knowledge. The Convention of Biological Diversity (CBD) and the requirements under WTO/TRIPS have led to stricter mechanisms for access to and control of genetic resources as well as new regimes for protection of biological innovations. This new environment has created both threats and opportunities for countries in the developing world which must develop a clear understanding of the development and its implications. However, the IPR controlling access and transfers of genetic resources are increasingly complex, the literature is vast and incomprehensive, models are complex, and options are many. Thus, policy makers, scientists and other practitioners especially in resource poor countries face a considerable challenge in formulating IPR policies and negotiating appropriate agreements. Recognizing this fact, the Swedish Biodiversity Center, Svalof Weibull AB and the Stockholm Environment Institute (SEI) are offering a unique three week IPR/Genetic Resources Program. For information contact: Svalof Weibull AB, Consultancy Department, SE-268 81 Svalöv, Sweden; Tel: ++46 418 66 70 00; Telefax: ++46 418 66 71 09; E-mail: [consultants@swseed.com](mailto:consultants@swseed.com); Website: <http://www.swseed.com>

## LITERATURE

Literature, books and journal articles of interest to readers are presented here. Please send list of seed publications on policy, regulation and technology to the Editor for inclusion in Seed Info.

**ISTA. 2003. Common Laboratory Seed Health Testing Methods for Detecting Fungi:** This book describes in detail the conventional testing methods that are used in detecting fungi associated with seeds. The basic facilities and equipment required to perform these methods are presented with photographs. There are eight chapters covering

sampling, examination of dry seeds, washing test, blotter method and its modifications, agar plate method, embryo count method and seedling symptom test, supported with a glossary and literature. Each method is supplemented with examples. This book has been written for scientists and technicians working at the seed testing and plant quarantine laboratories where the health of seeds is monitored for planting value and where presence of fungi of quarantine importance is checked in seed consignments of big and small sizes, including germplasm. Methods described in the book, along with identifying characters of fungi, will be useful to plant pathologists and seed technologists in their daily work and at the same time the book will act as a reference source to plant pathologists and mycologists in research and training programs. The descriptions of 239 fungi have been well illustrated with photographs (black and white as well as colored) and line drawings of fruiting structures that will ease their identification. First Edition, 425 pp; Price, €100 (\$115) plus shipment freights. For orders contact: ISTA, P.O. BOX 308, 8303, Bassersdorf, Switzerland, Fax: ++41-1-8386001; E-mail: [ista.office@ista.ch](mailto:ista.office@ista.ch); Online order at <http://www.seedtest.org>

**Interactive CD on Seed Processing ICARDA, Aleppo, Syria:**



This interactive CD provides information on seed cleaning and treatment both at the farmers' level and as part of the national seed industry. The most important machines in a seed processing plant are illustrated and working principles discussed. The

CD is available free from Seed Unit of ICARDA.

**WANA Catalogue of Field and Seed Standards, WANA Seed Network Publication 25/02,**



**ICARDA, Aleppo, Syria:** This catalogue includes field and seed standards of agricultural, horticultural, industrial and pasture and forage crops in member countries of the WANA Seed Network. The document is useful for harmonization initiatives and

seed trade among the countries. The publication is available from the WANA Seed Network Secretariat.





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