SEED INFO

Official Newsletter of the WANA Seed Network

Seed Info No. 25 **July 2003**

EDITORIAL NOTE

Seed Info aims to stimulate communication and information exchange 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 VIEWS section we will present the second of the two-part article on seed policy and regulatory issues by N.P. Louwaars, from Wageningen UR, The Netherlands. The first section focused on conceptual framework on the development of seed policy and regulatory environment arising from the three main functions of seed and the increasing complexity of globalization of policies. In his second article he will focus on options for implementation of seed policy. The forum is aimed at encouraging a transparent dialogue among professionals to debate and broaden our understanding of the issues that affect seed industry development. We would welcome your contribution to the on-going dialogue on issues affecting the seed sector at national, regional or global levels.

The section on SEED PROGRAMS includes news from Afghanistan, Cyprus, Pakistan, Syria and Uzbekistan. The update on the activities of FHCRAA will present the progress on rehabilitation of agriculture and seed sector in Afghanistan. From Ethiopia we report on the reorganization of the agricultural input supply sector following the merger of the Ethiopian Seed Industry Agency and National Fertilizer Agency. In Lebanon we focus on the status of the vegetable seed industry.

In the HOW TO section, your regular contributor, Abdoul Aziz Niane presents the flow chart for Standard Operating Procedures (SOPs) for purity test supplementing the descriptive SOPs appeared in Seed Info No. 22.

Since its establishment as a regional newsletter Seed Info published very diverse views on seed program development and news from national seed programs in CWANA region and beyond. While information exchange remain at the heart of the newsletter there is a desire from the general public to introduce a research section to diversify quality of information delivered to its readers. The RESEARCH section is aimed at capturing a wealth of information available 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. Under this section, we would also like to present development oriented alternative approaches to improve seed supply in areas which are of particular relevance to less favorable environments, remote areas with poor infrastructure and less commercial crops which are crucial for the livelihood of small-scale resource poor farmers.

Within this context in this issue Dr Ismail Küsmenoglu, Managing Director of Exporters Union Research and Seed Company (ITAS), will present an article *Participatory Transfer of Integrated Technology: A Promising Approach to Increase Food Legume Production in Turkey*. ITAS is the first private sector initiative of its kind looking for alternative ways of improving the legume seed supply through the participation of the industry and farmers in Turkey.

We wish you an enjoyable read.

Zewdie Bishaw, Editor

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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 have reported that a regional workshop on Review of Seed Programs and Seed Regulations was held on 2-3 November 2002 in Karaj, Iran under the umbrella of the WANA Seed Network. The meeting was attended by policy makers and senior managers from Afghanistan, Azerbaijan, Iran, Iraq, Lebanon, Kazakhstan, Khyrgzstan, Pakistan, Tajikistan, Turkmenistan, Turkey and Uzbekistan.

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 a comprehensive guideline 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.

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 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 CWANA region.

Steering Committee Meeting

The 10th Steering Committee meeting of the WANA Seed Network planned to be held in the second half of 2003 possibly in Cairo, Egypt. The Central Administration for Seed Certification and Testing Seed may host the meeting where Steering Committee members from Cyprus, Lebanon, Morocco, Syria and Turkey will participate.

Network Publications

The WANA Catalogue of Field and Seed Standards is printed and circulated for use as a reference document to national agricultural research systems and seed programs in the region and beyond. The publication will also be made available on ICARDA website at http://www.icarda.cgiar.org/ seed_unit/ SeedUnit/Activ/activ1.htm. If you need copies please contact the WANA Seed Network Secretariat at z.bishaw@cgiar.org.

Change of Country Representatives

Mr Kamel Latrous replaced Dr Ammar Assabah as the Director General of the Centre National de

(CNCC) and nominated as a new Country Representative of Algeria to the WANA Seed Network. In Oman Ms Safaa Bint Mohammed Al-Farsi, Head of Seed and Genetic Resources Laboratory has replaced Mr Ali Hussein Al Lawati as Country Representative of Oman.

We would like to thank Dr Assabah and Mr Al-Lawati for their valuable contribution to the Network during their terms as Country Representatives of Algeria and Oman and welcome Mr Latrous and Ms Al-Farsi as new members. The full contact address of Mr Latrous and Ms Al-Farsi is as follows:

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Harrach, Alger, Algeria. *Tel: ++213-21-521207, 521213; Fax: ++213-2-529900; E-mail: cncc@wissal.oz*

Ms Safaa Bint Mohammed Al -Farsi, Head, Seed and Genetic Resources Laboratory, Ministry of Agriculture and Fisheries, P.O. Box 467, Post Code 113, Muscat, Oman. Tel: ++968-694182; Fax: ++968-695909; E-mail: agricop@omantel.net.om

Seed Unit Website

Since the launch of the Seed Unit website on 19 August 2002 at ICARDA homepage we have received several encouraging e-mails and enquires. So far we have posted additional Network

industry from 13 member countries of the WANA Seed Network. Moreover, an Arabic version of Seed Info is also available on the website. We are also regularly updating three Network publications such as the WANA Seed Directory, WANA Catalogue of Varieties and WANA Catalogue of Field and Seed Standards. The website will continue posting and updating relevant information on the national seed industry of Network member countries in CWANA region. The support of the country representatives and observers in providing us with up-to-date information remains crucial in this endeavor. The website can be accessed at http://www.icarda.cgiar.org/seed%20unit/file/home.htm.

We welcome your suggestions, comments and ideas in improving the website and to provide you with relevant information and services. If you have any specific queries please do not hesitate to contact us at the Seed Unit. We wish you an enjoyable surfing!

NEWS and VIEWS

News, 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.

Seed Policy a Widening Arena

This is the second article in a two-part series on *seed policy a widening arena*. The first part focused on conceptual framework on the development of seed policy and regulatory environment arising from the three main functions of seed (i.e. technology transfer function, commercial (commodity) function, and carrier of genetic diversity function) and the increasing complexity of globalization of policies that have an impact on seed sector. In this second part we look into options for implementing seed policies.

Seed Policy three basic options for implementation
Seed policies become more complex compared to several decades ago when a linear development of seed system was accepted with a strong public sector role in plant breeding, seed production and supply.

Since then many developments contributed to this complexity:

- The uneven development of the commercial seed sector where some product-market combinations proved viable e.g. vegetable seed or hybrid seed of cereals compared to food legumes and small grain crops
- The recognition of local seed system as major supplier of seed to large group of farmers that
- International agreements with direct or indirect effects on the seed sector taking into account national seed policies related to trade and intellectual property rights (WTO) and biodiversity (CBD and IT/GRFA)

When it comes to translating policies into practice (e.g. through legislation) the widening of the policy arena makes the process much more complex and subject to changing power relations (see Seed Info No. 24). Such developments require countries to determine the government strategy in diversifying the national seed sector. Basically, three options can be distinguished: Control, Competition and Cooperation. The choice among these three has major implications for the future direction of the seed sector development

Policies towards privatization
Translating broad policy objectives into action depends to a very large extent on differing basic philosophies on the role of government in society.

options can be illustrated very well in terms of regulating the seed sector.

Control
Farmers (or seed buyers) are less likely to determine all quality aspects by looking at the seed. Therefore, governments have developed systems of consumer protection through seed quality control and certification. The level of government involvement is a very important distinguishing factor between countries.

In the past 50 years, most European countries (both west and east) had a policy best described with

the government with a strong influence in variety release and seed quality control. The system has been introduced to many developing countries under the influence of their historical relationships. Policies in Europe, however, tend to move towards

Apart from consumer protection this system is meant to create a level playing ground for seed enterprises to compete without undue competition

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Control options very often appear in the privatization of the seed industry in developing countries. When foreign companies show an interest in entering a

seed market in a country, governments tend to interfere to protect the farming communities through seed controls. This in turn may prevent the entry of private investors, thus missing the opportunity to create a more competitive market.

Competition
The competition model fully relies on market forces. The philosophy is competition will be the only sustainable way for ensuring optimal seed quality in the market and thus guarantee consumer protection. This approach is not implemented in any western country even though the argument is widely used in discussing seed regulatory reforms especially by seed specialists from USA. The concept is straightforward where in a competitive seed industry suppliers will be fully responsible for all internal seed quality control operations and supplying poor quality seed will automatically result in complete loss of market shares.

This approach of no or voluntary regulations, assumes fair competition in fully transparent markets. In practice this is hardly ever the case in seed markets of developing countries. Seed markets in such countries are often too small for enough number of seed companies to operate and the access to information is skewed with suppliers and large-scale farmers having the advantage.

Even though economic policies in the United States (and lately those in the WTO) do have confidence in market forces, the first laws that were to control seed quality was enacted in the US in 1905 followed by a comprehensive Federal Seed Act in 1936.

Cooperation
The third option for a government is to design ways to cooperate with seed industry and to share tasks and responsibilities. The US approach fits within this general approach: the seed supplier is fully responsible for the quality of its products, both in terms of variety and seed quality. The government, however, has a strong control on the type of information that the seed dealer should provide on the label and on checking the truth-in-labeling (market enforcement). It considers farmers are sufficiently educated to determine which seed they want to buy and which suppliers are honest in their promotion. Moreover, different states have strong legislation on some aspects of seed quality with particular emphasis on contamination with noxious weed seeds.

A wide range of seed certification and seed quality control agencies exist in the US that originate from perform the same function as their counterparts in Europe, but the legal basis of their operation is weaker compared to their colleagues across the Atlantic.

The control-oriented seed legislation can also be developed into cooperation to increase the effectiveness and efficiency of the control systems. Seed quality control and certification agencies in Europe may be run by the Government (Germany) or by an independent foundation (The Netherlands)

In the latter option, some levels of bureaucracy can be avoided. Within their operation, certification agencies may perform a full control or they may concentrate on certifying the internal quality control operations of the seed companies, rather than certifying each and every seed lot throughout the seed production-marketing-user chain. This option can be found in Europe especially in the horticultural seed sector, where the market is much more volatile than the more stable agricultural crops sector. In variety testing for VCU and/or DUS (Plant Variety Protection), there is a growing trend to use the facilities and the data of the applicant in assessing the value of varieties. The policies in the European Union tend to move towards this cooperation model. *N.P. Louwaars, Wageningen UR, P.O. Box 16, 6700 AA Wageningen, The Nethelands; E-mail: niels. louwaars@wur.nl*

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In 1993, the Seed and Plant Genetic Resources

alternative seed quality control mechanism in countries where human and physical resources for quality control are limited. The 'Quality Declared Seed' system makes use of resources already available in seed producing organizations and was designed to provide quality control with less demand on government resources than comprehensive seed certification schemes.

The purpose of the expert consultation was to review and update this publication in the light of current changes taking place in the seed industry of developing countries. A panel of experts from different parts of the world reviewed the document and made comments, suggestions and proposals for updating. These written contributions were further discussed during the meeting at FAO headquarters from 5-7 May 2003.

published in the near future and the most important changes to be included/changed/addressed are:

- Since the publication of the first edition of the QDS guidelines, there is increasing recognition of the value of genetic diversity and the role of the informal seed system. The first edition mainly addressed seed production of varieties developed through conventional plant breeding approaches. Local varieties were mentioned, but these varieties had difficulty to be eligible for production of QDS seed, because of the very strict requirements for testing (for VCU and DUS) and varietal purity. It is recognized

  varieties may offer benefits to farmers.
- In the new edition of QDS not only land races,

  participatory plant breeding approaches can be eligible for the production of QDS seed. The requirements for formal varieties remain similar, but testing and varietal purity requirements have now been relaxed for local

  PPB which is the most important change that has been made to the system.
- A large number of new crops have been added to be eligible for the production of QDS. For ICARDA, the addition of barley was relevant.
- GMOs have been discussed, but it was decided that at this stage there was no need to address this issue, since its relevance to seed production is rather limited and mainly concerns safety measures, isolation, zoning, etc.
- The maximum field size for field inspection has been reduced for a large number of crops (often from 50 ha to 10 ha).

It was recommended that FAO promote the adoption of the QDS system. Moreover, it was suggested that an expert consultation be convened to address similar issues in asexually propagated crops. *A.J.G. van Gastel, Seed Unit, ICARDA, Aleppo, Syria; E-mail: a.vangastel@ cgiar.org*

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What is ISTA Accreditation?

The International Seed Testing Association (ISTA) was founded in 1924 with the aim to develop and publish standard procedures in seed testing. For more than 75 years, ISTA stood for uniformity in seed testing. With the idea of uniformity came the establishment of the ISTA Accreditation Program. ISTA has always stood for competence and quality, and therefore reliability and comparability are guaranteed by using the validated ISTA tests methods and procedures.

Reliability in testing results is crucial, especially in international seed trade. ISTA pursues sector specific approach to accreditation, by accrediting seed testing laboratories throughout the world.

The accreditation process not only verify the competence of the laboratory according to the ISTA International Rules for Seed Testing, but the audit report will list any deficiency giving the laboratory an opportunity to rectify these deficiencies and ensure the uniformity and quality of the seed testing results.

To maintain ISTA accredited status, seed testing laboratories must participate in the Proficiency Testing Program organized by the association. An overall performance evaluation is made over several proficiency rounds, to ensure that the performance of the laboratory is at an acceptable level. Participation in proficiency testing by non-accredited member laboratories is voluntary. However, the Proficiency Testing Program is an invaluable, non-partial tool to both accredited and non-accredited member laboratories alike. With three Proficiency test rounds per year, specified to the laboratories specialty in seed testing, it provides the laboratories an opportunity to either maintain their level of competency, if accredited, or for those laboratories aspiring to become ISTA accredited, the opportunity to bench mark themselves.

ISTA accredited laboratories may also, depending on their respective governments approval, issue ISTA International Seed Lot Certificates, which can be seen as a passport for international seed trade. *Sarah Meier, ISTA, Box 308, 8303 Bassersdorf, Switzerland; E-mail: ista.office@ista.ch; http//: www.seedtest.org*

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A Seed Pathology Center for Asia?

The Danish Government Institute of Seed Pathology for Developing Countries (DGISP) was established with the main objective of improving the health of seed through training, with ultimate goal of increasing and improving food production. The institute located on the campus of the Royal Veterinary and Agricultural University in Denmark has trained agricultural scientists and technologists from all over the world. The trainees come from universities, research institutes, seed production companies or seed certification agencies.

Dr S. B. Mathur is responsible for establishing a seed pathology research and training center at the University of Mysore. The university is receiving both professional and technical support from DGISP for over 25 years. At present DANIDA is upgrading research and training facilities at the university. It is anticipated that the center will eventually become a Seed Pathology Center for training scientists and technicians from different countries in Asia.

The contribution of Dr S. B. Mathur has been recognized through the award of Gold Medal on 2 December 2002 instituted by the university in memory of Professor K.M. Safeeulla who had significant contributions in research on plant pathology particularly downy mildew of millets. Dr Mathur was awarded for his expertise in seed-borne fungal diseases of tropical and subtropical crops and his knowledge of technological developments in seed health. At present Dr Mathur is the head of DGISP in Denmark. *H.S. Prakesh, University of Mysore, Mysore 570 006, India; E-mail: appbot @sancharnet.in.*

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Policy Framework for Biosafety Regulations

A new regulatory framework that can help developing countries safely deploy genetically modified plants and animals is now available for use by national agricultural and regulatory agencies. The framework was developed by the International Service for National Agricultural Research (ISNAR) in collaboration with NARS and the FAO.

The Cartagena Protocol on Biosafety, an international convention that seeks to protect the environment from risks posed by GMOs calls on governments to have a biosafety program in place before agreeing to import living genetically modified organisms, either for agriculture or as food aid. Under its provisions, 103 signatory nations are required to establish a functional biosafety system within Ministry of Environment.

The original ISNAR biosafety framework builds knowledge based on the experiences of developing country such as Argentina and Egypt both of which have used the framework to establish their biosafety programs. The intention is to facilitate decision-making by helping policymakers examine choices among different policy options, and evaluate both the scientific and social dimensions of those options. For more information about biosafety issues and the ISNAR-FAO decision toolbox and framework, visit: http://www.isnar.cgiar.org/ibs/biosafety/index.htm. *Source: Future Harvest News*

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Egypt Established a Biotechnology Information Center

The Ministry of Agriculture and Land Reclamation, and the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) has jointly established an Egyptian Biotechnology Information Center (EBIC). EBIC is located at the Agricultural Genetic Engineering Research Institute of the Agricultural Research Center. The mission of EBIC is to inform and promote the public awareness about biotechnology and genetic engineering applications. Moreover, EBIC will play a major role in clarifying the benefits and potential risks of biotechnology through reasonable and transparent discussions. For more information contact: M.A. Moniem, Director, EBIC, 9 Gamaa St, AGERI, ARC, Giza 12619, Egypt; Telefax: ++20-2-5721582; E-mail: ebic_mz@ageri. sci.eg; Website: http://www.egyptbic.com

CONTRIBUTIONS from SEED PROGRAMS and PROJECTS

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

Update on Future Harvest Consortium to Rebuild Agriculture in Afghanistan (FHCRAA)

Agricultural production capacity and food security in Afghanistan were greatly damaged by more than a decade of civil strife and several years of continuous drought. Rebuilding agriculture is, therefore, crucial if conditions in Afghanistan are to return to pre-war status and then progress beyond that level. 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. The objectives of the FHCRAA program are:

- In the immediate future, multiply and deliver quality seed of adapted varieties to reach farmers in time, and to build, with Afghan partners, an effective regulatory system that enforces standards and promotes the use of high quality seed and varieties
- In the longer term, provide technical assistance in the development of sustainable agricultural production systems in Afghanistan

Project Implementation
A Steering Committee has been established to oversee, monitor and evaluate the progress made in implementing and achieving the objectives of the project. The Committee has an advisory capacity on future strategy and areas of emphasis to contribute to rebuilding the agriculture sector in Afghanistan. The first meeting of the Committee was held in August 2002 at ICARDA, Aleppo.

A Consortium headquarter was established in Kabul with other regional offices in Jalalabad, Kunduz, Pul-i-Khomri and Taloqan to implement the project. Eight short-term high impact project proposals have been approved and are being implemented. The projects bring in new partners in the Consortium (US Universities, International organizations, NGOs).

A FHCRAA website (http://www.icarda.cgiar.org/Afghanistan/index.html) and an electronic discussion group (http://webforum.cgnet.com/afghanistanconsortium) have been established and is regularly updated with new materials. Moreover, a communication plan has been developed and activities initiated to: (a) build international public awareness of FHCRAA/USAID projects in Afghanistan, (b) Provide essential information on agriculture to Afghan farmers, and (c) Develop agricultural news and broadcasting in Afghanistan

Needs Assessments (NA)
Four Needs Assessments have been conducted: (1) Seed Systems and Crop Improvement, (2) Soil and Water Management, (3) Livestock, Feed and Rangelands, and (4) Horticulture. These assessments have derived information from secondary sources, meetings and discussions with staff of relevant organizations and farmers, as well as nationwide sample surveys.

The wrap-up meeting of needs assessments in seeds and crop improvement and soil and water was convened by ICARDA at its Headquarters in Aleppo, Syria, to discuss findings and results of these assessments and develop ideas for the future. Key outputs of the meeting included outlines of research and development priorities and project ideas in the form of concept notes, which may form the basis for full project proposals for those cases in which donors express interest. Based on the Needs Assessments, several project proposals have been developed and submitted to donors such as the Japanese Government, Islamic Development Bank, OPEC, etc.

Seed Systems
Seed Provision for Planting in 2002
For the 2002 spring planting season, approximately 3500 MT of high quality wheat seed was procured from Pakistan and distributed to Afghan farmers through a network of NGOs where about 40,000 beneficiaries have been reached. 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 expected.

For the fall planting season of 2002, a total of 4,583 MT of wheat seed produced in the country was made available to farmers. About 4185 MT of seed was distributed for irrigated areas whereas the rest is for rainfed areas. In addition to wheat, small quantities of seed of rice, barley, chickpea, lentil, berseem clover, alfalfa, flax, sesame and mung bean have been purchased and distributed.

About 53 MT foundation seed of bread wheat, durum wheat, barley, lentil, chickpea and vetch has been shipped from ICARDA to Afghanistan for on-station testing, large-scale evaluation and pre-release multiplication in the fall season. Moreover, for the establishment of horticulture nurseries, planting material of almond, pistachio, apricot, walnut and peach have been procured and nurseries have been planted at some locations.

Restoration of Research Capacity and Seed System
The Consortium has rehabilitated five agricultural research stations (Kabul, Baghlan, Kunduz, Taghar, and Jalalabad) which have potential for seed production. Farm equipment has been provided for on-station research and seed production, and for meteorological stations. A total of 100 ha of land have been planted in these stations.

A variety maintenance program has been initiated in Darul Aman, Baglan, Kunduz, and Taloqan to maintain varietal purity and to initiate the seed multiplication cycle of existing varieties. Similarly, horticultural nurseries have been planted in Darul Aman, Kunduz, Taloqan and Jalalabad.

To re-establish the variety evaluation system, international nurseries of durum wheat, barley, chickpea, lentil, faba bean and forage legumes have been sent to Afghanistan for testing (trials) for yield, drought and cold tolerance, and disease resistance. The international nursery program will identify

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ecological zones. As part of the genetic resources repatriating process seed samples of 41 barley land races and 250 kg seed of several cereal and legume landraces have been sent back to Afghanistan.

To initiate a farmer-based seed multiplication system, 260 MT of seed has been distributed to 821 farmers in 7 provinces. This is the first step in the establishment of private village seed enterprises aimed at bringing seed self-sufficiency. Farmers will be assisted and trained in seed production practices, including marketing and financial lication
fields will provide approximately 5000 MT seed of adapted crop varieties. Six mobile seed cleaning machines, specifically designed for use at the farmer level, have been established in Kabul, Nangarhar, Kunduz, Baghlan and Takhar to support the community based seed activities. Five more cleaning machines are currently being manufactured.

To provide Afghan farmers with quality potato seed, CIP has provided a total of 22 tonnes quality potato seed of adapted varieties from Pakistan and India, which have been introduced to Afghan farmers for further multiplication.

Production of Seed and Planting Material and Seed
-23 May 2002
in Kabul. Guiding principles for seed production and distribution were formulated. Moreover, a draft National Seed Policy and Seed Law has been submitted to the Government and the Consortium is in the process of translating the documents into the national language. Both the National Seed Policy and the Seed Law take into account specific conditions in Afghanistan, but also consider the need for its integration with developments that are taking place in the seed industry around the world. To assist the government in carrying out its regulatory function, the Consortium has purchased appropriate seed testing and seed health testing equipment, rehabilitated the required buildings and installed the equipment.

Human Resources Development
The first in-country training course on seed production was held in July 2002 for 70 participants focusing on varietal identification, seed multiplication and seed health to improve the seed quality aspects. Several training activities have taken place in potato seed multiplication and Afghan staff has participated in Sun pest training in Iran. Training activities planned for seed production and marketing, seed quality assurance, research station management and operating meteorological equipment/stations are being implemented. It should be noted that on-the-job training is a permanent feature in places where research stations are supported.

A senior Afghan staff attended a Regional Review of Seed System and Regulations in Iran to acquaint himself with trends in seed industry development. *A.J.G. van Gastel, Seed Unit, ICARDA, P.O. Box 5466, Aleppo, Syria; E-mail: a.vangastel@cgiar.org*

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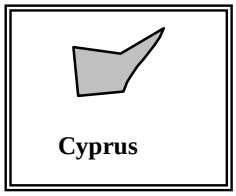
Cyprus Enacted New Seed Law



In view of the accession of Cyprus to the European Union in April 2004, the House of Representatives have adopted a new Seed Law in July 2002. The new Seed Law harmonizes all the activities in varieties and seeds with the European Union *Acquis Communitaire*. It sets out provisions for the admission of varieties of agricultural and horticultural crops to the National Catalogue of Varieties and then to the EU Common Catalogue. The European Union has granted Cyprus a transition period of five years during which existing varieties, which are not listed in the Common Catalogue, can be freely marketed in the local market.

The Law sets out provisions for seed certification of both agricultural and horticultural crops. It also allowed the sale of commercial seed of barley due to certain difficulties in meeting EU standards. The commercial barley seed, which at present is provided to farmers in case of certified seed shortage would be stopped, as marketing of such seed is not allowed in the EU.

The Seed Production Center of the Department of Agriculture will operate as an independent organization on equal terms with other private seed enterprises. *Petros Xystouris, Seed Production Center, Department of Agriculture, Nicosia, Cyprus; E-mail: doagrg@cytanet.com.cy*

Ethiopia Established a National Agricultural Input Authority

The National Agricultural Input Authority (NAIA) was established under the Proclamation Number 288/2002 in July 2002

following the merger of two independent organizations, the National Seed Industry Agency and the National Fertilizer Industry Agency. The Authority is entrusted with responsibility to implement and control the enforcement laws for production and trade of agricultural inputs such as seeds, fertilizers and agricultural pesticides.

Goal and Objectives
The goal is to enhance the local production of agricultural inputs, ensure their timely availability with competitive prices so as to increase production and productivity and thereby enable agriculture to be the springboard for industrialization.

The objective of the Authority is to ensure that the production, supply, distribution and marketing of agricultural inputs are undertaken in efficient and effective manner, and capacity is built in the sector to benefit producers and the user community.

Powers and Duties
The Authority is responsible to:

- Formulate agricultural input policy and strategy based on national rural development policies and strategies and follow up the implementation thereof
- Implement agricultural input laws by establishing links with appropriate institutions
- Issue guidelines and procedures for agricultural input evaluation and release and monitor their implementation
- Issue guidelines and procedures for the proper formulation and preparation of agricultural inputs programs and projects in line with the development needs of the country
- Issue import and export permit for agricultural inputs
- Ensure the distribution of high quality agricultural input to users
- Provide assistance in market and demand forecast studies to enhance the development of the agricultural input industry
- Undertake studies and submit recommendations to the government to take the necessary actions to stabilize the price of agricultural inputs
- Provide necessary support in capacity building in production, marketing and distribution of agricultural inputs
- Promote public awareness to enhance the growth and development of the agricultural input industry
- Encourage active participation of the private sector in production and distribution of agricultural inputs
- Facilitate and ensure, in cooperation with the relevant organizations, the supply and availability of agricultural inputs
- Establish a central agricultural inputs database and information system

Organization
The NAIA comprises has three departments and five support services. The major departments and their activities are as follows:

Quality Inspection and Certification Department

- Effect the implementation of agricultural input laws
- Issue permits for import and export of agricultural inputs; certificates for agricultural input manufacture and trade
- Issue guidelines and procedures for agricultural input evaluation and release and monitor their implementation
- Assure the distribution of high quality agricultural inputs to users

Planning and Programming Department

- Preparation, distribution and monitoring the budget and activities of the Authority
- Close follow up of the National Agricultural Input Project
- Soliciting funds for purchase of agricultural inputs especially fertilizers
- Issue guidelines and procedures for formulation and preparation of agricultural input programs and projects
- Formulate agricultural input policy and strategy based on the national program

Marketing Department

- input forecast
- Soliciting fund for purchase of agricultural inputs especially fertilizers
- Updating information on national and international agricultural input prices in particular and the agricultural input trade in general.

Inputs Covered
Agricultural inputs with respect to the current scope of the Authority are composed of:

a. *Seed and planting material*: mature ovule or the seed, bulbs, tubers, cuttings, or any other plant material used for the propagation of plants.
b. *Fertilizer*: any natural or industrial product of organic or inorganic origin containing one or more plant nutrients which could help to maintain/improve soil fertility.
c. *Pesticide*: any substance, chemical, compound or mixture thereof or a living organism intended for use as an agricultural input to

prevent or control pests; excluding migratory pests.

Collaboration
NAIA closely works with various public, private and international organizations some of which include: (i) EARO; (ii) MoA; (iii) Regional Agricultural Bureaus; (iv) Cooperative Promotion Commission; (v) Educational institutes (for Agriculture); (vi) Quality and Standard Authority; (vii) Environmental Protection Authority; (viii) Ethiopian Seed Enterprise; (ix) International organizations (FAO, IDA, UNDP, ISTA, FAI, etc); (x) Seed producers, importers of agricultural inputs, investment offices; and (xi) Professional agricultural societies.

NAIA is located in Addis Ababa with eight branch offices for seed testing in four different administrative regions which may increase in number as the need may arise. *Belay Semane, NAIA, P.O. Box 9197, Addis Ababa, Ethiopia. E-mail: nsia@telecom.net.et or nfia-ethiopia @telecom.net.et*

Ethiopia Released Three *Tef* Varieties

In another development the Debre Zeit Agricultural Research Center of the Ethiopian Agricultural Research Organization has announced the release of three improved *tef* varieties selected from germplasm materials collected from Ethiopia. The improved varieties are Gerado, Koyu and Key Tena. The varieties are drought tolerant and can mature within 80 days and give a yield of up to 2 tonnes/ha. Ethiopia is known for the wealth of *tef* germplasm and the only country where the cereal crop is used as principal food crop. *Tef* ranks first among cereals in terms of area and production in the country. However, low productivity remains the major constraint where yields are as low as less than 1tonne per ha is common.

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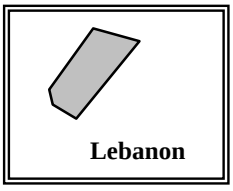
The Vegetable Seed Sector in Lebanon



In Lebanon, the public sector is responsible for providing seed of agricultural crops such as wheat, sugar beet and tobacco. It is also responsible for production and distribution of transplants of olives and tree crops. The private sector plays a major role in providing almost all seed or transplants of horticultural crops (vegetables, ornamentals or fruit trees) through imports or local production.

Major Seed Companies and Suppliers
There are several private companies and dealers involved in vegetable seed sector. Table 1 lists major seed companies providing over 80% of local vegetable seed market with licenses from internationally recognized seed companies. Some of these companies are also operate at the regional level in countries such as Iraq, Jordan, Syria, etc.

Table 1. Major companies and suppliers of vegetable seed in Lebanon

Company	Suppliers
Agricultural Material Company	Anseme, Asgrow, Bruinsma, California, Clause, Daehnfeldt, Hollar, Hungnong, Tokita,
Unifert	Huizer, Hurst, Ohlsens Enke, Petoseed, Petotec, Royal Sluis, Technisem
Debbane	De Ruita, Ferry Morse Nikerson, Takii, Zwaan
Robinson	Sloot &Groot, Rick Zwaan
Lamico	Sakata, Corona, Nonew Seeds
Amalia	Enza Zaden
CAL	Hollar

Seed Imports and Procedures
Each year Lebanon imports approximately US$ 4 million worth of vegetable seed, entirely by the private companies or dealers. However, there is very limited domestic seed production of some local varieties or landraces.

The import includes seed for greenhouses (135-150 kg/year) or for open fields (300 tonnes/year) as shown in Table 2. The main vegetable seed imported include beans, beets, cabbage, carrot, cauliflower, cucumber, egg plant, lettuce, okra, onion, melons, peas, parsley, pepper, radish, spinach, squash, sweet corn and tomato.

The general trade laws apply for import procedures, but due to the absence of seed laws and regulations anyone can import and sell seed on the market. The Ministry of Agriculture plays no role, although the customs request some documents required by an old seed law. These documents are: (a) certificate of origin; (b) certificate of specialization; (c) phytosanitary certificate; and (d) packing list. Some suppliers also provide a certificate of germination and insurance policy.

Variety Testing and Release
Each company introduces vegetable varieties from foreign suppliers and tests in its experimental stations. Most companies have at least two experimental stations. The first station is located on the coastal areas where humidity is high and the nights are frost-free and the second station in the

hot summers, very cold winters and subject to low humidity and frequent frost damage in winters.

The seed companies follow similar procedures of variety testing. In the first year a large number of new varieties are introduced and tested in replicated trials on the experimental stations. The criteria for evaluation might differ among the companies where some use specific characters such as firmness and acidity in tomatoes, sugar contents in melons while others emphasize general criteria such as yield.

Table 2. Estimated quantity of vegetable seed imported per year

Crop	Hybrids (kg)	OPPs (kg)	Total (kg)
Greenhouses			
	11	-	11
Tomato	70	-	70
Eggplant	20	-	20
Melons	30	-	30
Pepper	15	-	15
Open Fields			
Green beans	-	100,000	100,000
Green peas	-	100,000	100,000
Sweet corn	12,000	-	12,000
Melons	400	500	900
Watermelons	750	1000	1750
Cucumber	600	2000	2600
Tomato	150	-	150
Eggplant	30	200	230
Okra	-	2000	2000
Sweet pepper	30	70	100
Hot pepper	7	-	7
Squash	6000	-	6000
Red beets	-	3000	3000
Carrots	-	4000	4000
Radish	-	25,000	25,000
Onions	2000	10,000	12,000
White cabbage	250	-	250
Red cabbage	10	0	10
Cauliflower	200	50	250
Parsley	-	10,000	10,000
Lettuce	-	5000	5000
Spinach	-	10,000	10,000
Total (kg)	22,562	272,820	295,382

Open pollinated varieties; million seeds

In the second year, selected promising varieties are tested for a year or two in larger unreplicated plots or demonstration plots either on the stations or on-

organized where farmers are involved and/or exposed to new varieties. Small companies provide seed to farmers for free for testing on their fields to minimize trial costs.

During the third or fourth year, varieties are released for commercial use and registered with the Ministry of Economics and Trade. Although the registration of varieties outside the country is possible, this is dropped because it is expensive and not obligatory.

Seed Marketing and Distribution

Each company has its own seed distribution network across the country. The number of distribution points ranges from 4 to 12 locations and is spread in most cities and six provinces of the country.

Apart from selling seed from their own distribution shops, the companies also market seed through dealers. Sometimes company sales representatives make contacts with farmers directly. Moreover, the nurseries (approximately 10 to 15 nurseries across Lebanon) are another important source for planting materials where the seedlings are directly sold to the farmers.

Problems and Constraints

The absence of seed laws and seed quality control have made the seed trade in Lebanon much easier. However, some reputable seed companies consider that enforcement of such laws will be to their advantage to regulate the seed business and prevent fraudulent practices such as smuggling seed. Major constraints facing the vegetable sector in the country are the absence of clear agricultural policy, lack of seed laws and quality control, seed smuggling from neighboring countries, overproduction of vegetables and lack of organized market and absence of agricultural extension services. *Hassan Machlab, Agricultural Research Institute, P.O. Box 287, Tal Amara, Rayak. Fax: ++961-8-900077; E.mail:hmachlab@larileb.com*

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Seed Production of Indigenous Rangeland Forage Species in Oman

The indigenous forage species play an important role in the long-term sustainability of rangelands because of their adaptation to the arid environments. They could be alternative feed sources compared to exotic or imported forage species with high demand for scarce water resources. However, the availability of seed of indigenous forage species is a major limiting factor. Bulk seed multiplication of two rangeland forage species viz. *Cenchrus ciliaris L* (UAE Accession No. MAF-120) and *Coelachyrum piercei* Benth (UAE Accession No. MAF-116) was entrusted to the Seed and Plant Genetic Resources Laboratory in November 1999 under Phase II of

APRP (Arabian Peninsula Research Program) of ICARDA. Accordingly 6g of *Cenchrus ciliaris* and 8g of *Coelachyrum piercei* were supplied where seed multiplication was carried out at the Agriculture Research Station in Sohar under drip irrigation from March 2000 to February 2002. A total of 13.6 kg and 12.6 kg of *Cenchrus ciliaris* and *Coelachyrum piercei,* respectively were collected in six harvests spreading over 600 days. Both grass species produced comparatively more seed yield in summer than in winter seasons. These studies clearly demonstrated that seed of grass species such as *Cenchrus* and *Coelachyrum* could be produced in the Gulf climate of Oman throughout the year. Non-synchronous formation of panicles and early shattering were the main problems faced during seed multiplication and harvesting the two grass species. New experiments have been initiated to tackle these problems. *S.K Nadaf, S.M. Al-Farsi and S.A. Al-Hinai, Seed and Plant Genetic Resources Laboratory, Agriculture Production Research Center, Ministry of Agriculture and Fisheries, PO Box 50, PC 121, Oman (NB: Details of the experiment will be presented in coming issues of Seed Info).*

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Excerpts from Pakistan National Seed Program

The following news is excerpts compiled from The Seed News (a biannual news bulletin of Pakistan seed industry) courtesy of its editor Seyed Irfan Ahmed former Director General of the Federal Seed Certification and Registration Department.

The Government of Pakistan attaches high priority to agricultural research, variety development and seed production, distribution, quality control and extension. The National Seed Council (NSC) and the Provincial Seed Councils (PSC) were established at federal and provincial levels, respectively. The NSC has an overall policy and decision making authority within the Ministry of Food, Agricultural and Livestock. The NSC in its November 2002 meeting made several key decisions on seed certification labels and standards and approved the release of new crop varieties.

New Labels for Approved Seed
The Federal Seed Certification and Registration Department is a national authority responsible for implementing the national seed certification scheme based on Seed Act (No. XXIX of 1976) and -in- the Seed Act of 1976, Breeder, Pre-basic, Basic, Certified and Approved Seed are recognized. The Seeds Rules of 1991 allows marketing of truthfully labeled seed. Accordingly, the NSC has approved the specifications for labeling the latter of these seed categories: (1) pink label for Approved Seed category and yellow label for Truthfully-labeled Seed category. The labels shall carry information on: (i) lot number; (ii) crop/species; (iii) variety; (iv) pure seed %; (v) germination %; (vi) other crop seed %; (vii) weed seeds %; (viii) inert matter %; (ix) production year; and (x) date of expiry.

Change of Standards for Approved Seed
Up on the request of seed producers the NSC has approved the minimum field and seed standards for Approved Seed category of cereals, legumes, oilseeds and forages. Similarly, the Council also allowed changes for berseem seed certification standards as follows: (i) categorized *Cichorium intybus* as common weed instead of objectionable weed; (ii) allowed the presence of *Cichorium intybus* and other weeds of up to 1.5% in Truthfully-labeled, 0.8% in Approved and 0.5% in Certified Seed categories; and (iii) set similar standards for objectionable weeds i.e. 0.05% for Truthfully-labeled, Approved and Certified Seed categories.

Release and Registration of New Crop Varieties
The National Seed Council approved the registration of 28 different crop varieties including wheat (7 varieties), cotton (8), chickpea (1), mung (1), mash (1), rice (3), sorghum (1), sugarcane (2), hybrid maize (2), sunflower (1) and rape seed (1).

Certification Standards for Fruit Tree Nursery
The NSC also approved minimum certification standards for fruit plants such as apple, pear, quince, loquat, cherry, plum, peaches and apricot. The certification standards prescribe minimum requirements for land, isolation, number of inspections, purity standards, scion and stock condition, rouging, pest tolerance, labeling etc. Certification rules for fruit plants already stands approved by the NSC. *Source: The Seed News, Vol3 No2 July-December 2002.*

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Syria Released Chickpea and Lentil Varieties

In November 2002, the Syrian National Variety Release Committee released two winter chickpea varieties and two lentil varieties, developed jointly by ICARDA and the Syrian National program. The varieties were developed at

ICARDA and jointly evaluated by ICARDA and Syrian national program at representative sites throughout the country.

The two chickpea varieties, Ghab 4 (FLIP 93-93C) and Ghab 5 (FLIP 88-85C), are both high yielding, ascochyta blight tolerant, suitable for mechanical harvesting and are recommended for Zones 1 and 2 (except Malkieh). An integrated pest management package was also recommended for these varieties.

The two lentil varieties, Idlib 3 (ILL6994) and Idlib 4 (ILL7201), are high yielding, wilt resistant, and suitable for mechanical harvesting. Idlib 3 is recommended for planting in low-rainfall areas and has desirable genes from two parents of Jordanian and Moroccan origin. Idlib 4 is recommended for planting in Zone 2 (including Aleppo, Idleb, and Al-Hasakeh) and possesses desirable genes from four parents from Syria, Lebanon, Mexico, and Ethiopia. The multiplication of these varieties is being carried out both at ICARDA and GOSM for future seed distribution to farmers. *Abdul Mohsen Said Omar, GOSM, P.O. Box 5857, Aleppo, Syria; E-mail: gosm@mail.sy*

Winter Wheat Variety Released in Uzbekistan

Since 1995n, wheat breeders in Uzbekistan have been testing breeding material from the Turkey/CIMMYT/ ICARDA International Program of Winter Wheat Improvement. Many promising lines have been identified; among them BDME-9 (YMH/TOB/MCD/3/LIRA) was released by the State Variety Testing Commission under the name

provinces. The variety is drought and salt tolerant, has good resistance to pests and diseases, especially to yellow rust, and out yielded the local checks by 10-14% in multi-location trials.

HOW TO

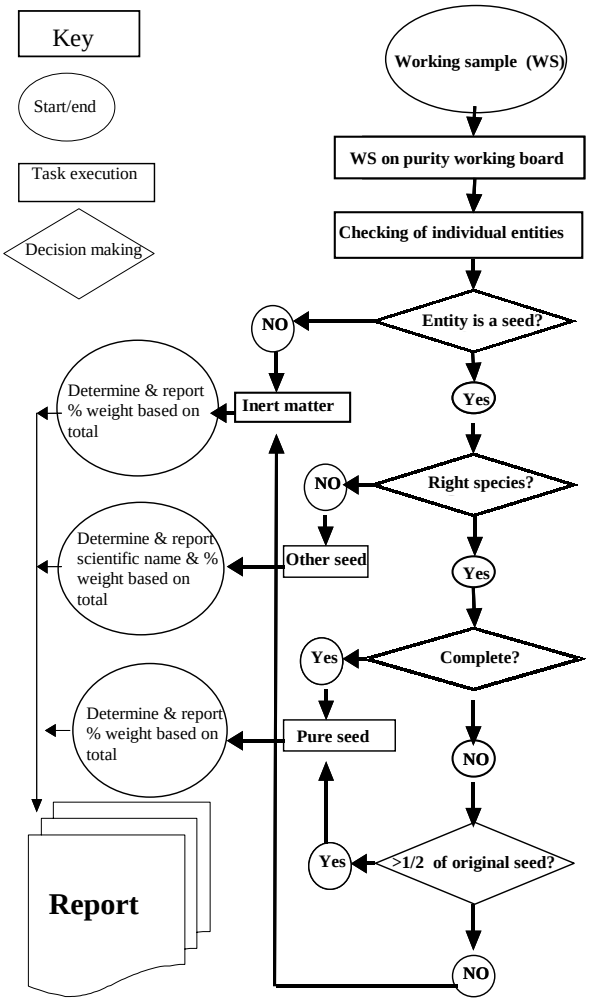
In this section we provide technical/practical information that seed sector staff may find useful. It is simple to follow instructions for technical staff in seed production and quality control.

How to No 27: Flow Chart for Standard Operating Procedures in Purity Analysis

Under the ISTA laboratory accreditation system, preparation of detailed Standard Operating Procedures (SOPs) for each of the tests performed in a seed testing laboratory is one of the major criteria for accreditation. SOPs are short and simple working instructions that are prepared in the same sequence that the job is executed in a descriptive writing or flow chart format. In Seed Info No 22 of January 2002 we have explained an example of a descriptive writing format. In this issue, the flow chart format is presented.

SOPs should be kept short, simple, user friendly and preferably prepared by those who do the job themselves using their own working language. They are not the same as the ISTA rules. They are laboratory and seed analyst -specific. They explain the exact way a seed analyst applies the ISTA rules in his specific laboratory circumstances using the available equipments.

Fig 1. Standard operating procedures for purity testing



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

Participatory Transfer of Integrated Technology: A Promising Approach to Increase Food Legume Production in Turkey

by

Research Company, Ergazi Mahallesi, No.4, Ankara, Turkey; E-mail: i.kusmenoglu@itas.com.tr

Abstract

Food legumes are the main components of dry land cropping systems and one of the leading export commodities in Turkey. In recent years the Turkish legume export is declining on the world market because of poor and inconsistent grain quality and high local grain prices. Several disease resistant and high yielding cultivars of food legumes have been developed and released by the national agricultural research organizations. However, the majority of farmers continue growing traditional local landraces due to lack of appropriate technology transfer mechanism coupled with lack of adoption of new varieties resulting from inadequate legume seed supply. The percentage of certified seed used by farmers is negligible compared to the amount of seed they obtain from other sources. The Exporters Union of Turkey established an Exporters Union Seed and Research Company (ITAS) to improve the production and quality of food legumes. ITAS, established in 1998, launched an innovative and integrated technology transfer project where significant progress has been made in a very short period of time. The approach could serve as a model for promoting the adoption and diffusion of new crop varieties neglected by the formal sector.

Introduction

Food legumes are the main components of dry land cropping systems in Turkey. Chickpea, lentil, and dry bean are three important commercial food legume crops in the country. The total area of chickpea and lentil increased rapidly during the 1980s as a result of the Fallow Replacement Project implemented by the Ministry of Agriculture and Rural Affairs. The government policy favored food legumes and incentives such as credit and subsidy for certified seed were provided to promote commercial production. In 1980, chickpea and lentil were planted on 430,500 ha producing 470,000 tonnes of grain legumes. In 1988 the production reached a peak of 1,817,500 tonnes with a combined area of 1752,698 ha for both crops. In 2000, chickpea and lentil production dropped to 920,000 tonnes with an area of 955,000 ha.

Similarly, the export of food legumes increased tremendously from 190,782 tonnes in 1980 to a peak of 1,133,850 tonnes in 1988. Ever since the legume export market continues to decline, although it is trending up in recent years. Since the early 1990s, the withdrawal of subsidies has led to a continuous fall in food legume production and grain quality. The decline in legume production posed a serious problem particularly for the export trade which requires high quality grain legumes.

Several disease resistant and high yielding cultivars of food legumes have been developed and released by the national agricultural research organizations. However, the majority of farmers continue growing traditional local landraces due to lack of appropriate technology transfer mechanism coupled with lack of adoption of new varieties resulting from inadequate legume seed supply. There is no effective legume seed production program in either the public or private sector that could support the diffusion of new improved varieties and associated crop production technologies.

Problems of Legume Seed Sector in Turkey

Despite a tremendous effort by the national agricultural research, the average yield of legume crops has remained stagnant or declined over the years (Figure 1). The absence of better legume production technology partly accounts for such low performance. Moreover, there are also biotic and abiotic stresses and technical constraints that limited legume production (Sakar *et al*., 1988; Durutan *et al*., 1988; Acikgoz *et al*., 1993; and and Meyveci, 1997). Several improved varieties have been released but few of them are in commercial production. Lack of certified seed production and distribution are the major constraints slowing down the diffusion of improved varieties from research centers to

A most of the seed used for planting comes from the informal sector proportion distributed sector Figure their channels such as own saved neighbors/other farmers or from local markets/gra Figure

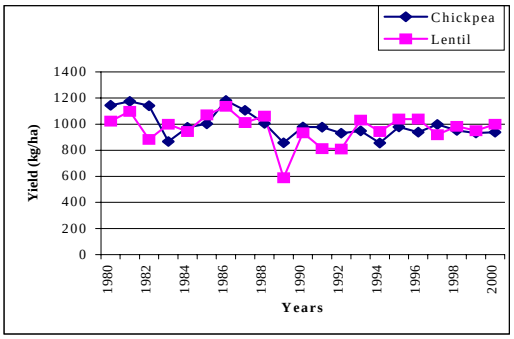


Figure 1. Productivity of chickpea and lentil in Turkey

There are s for production legume crop by sector m from Weak for available also grow considered groups to purchase well and s growers and processors the farmers ding the new legume the importance of .

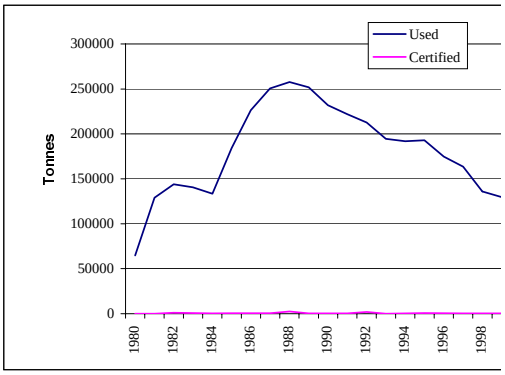


Figure 2. Proportion of certified seed used for legume production in Turkey

Establishment of Exporters Union Seed and Research Company (ITAS)

In the 1990s, countries such as Australia, Canada and the United States become major producers and exporters of grain legumes. The support provided to promote food legume research in developed countries (Gareau *et al*., 1997) forced the legumes exporters of Turkey to take similar action to cope with stiff market competition from these countries. As a result the Cereal, Legume and Oil Crops Exporters Union had established a Research and Development Fund by imposing a levy on export in 1997. The fund is used in promoting food legume production, productivity and grain quality. In 1998, the Exporters Union Seed and Research Company (ITAS) was established and took over the administration of the fund.

The goal of ITAS is to promote productivity and sustainability of food legume production. The short-term objective is aimed at facilitating the transfer of available technology to farmers whereas the long-term objective is aimed at establishing a competitive research capacity at the national level. ITAS formulates and implements its own projects and collaborates with national and international institutions to fulfill its objectives.

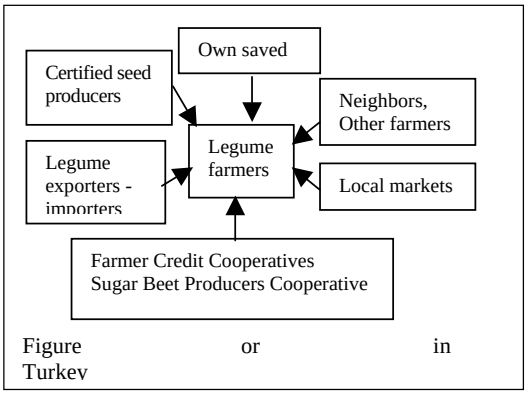


Figure or in Turkey

ITAS is implementing a Technology Transfer Project in collaboration with agricultural research centers and extension services throughout Turkey. The project includes certified seed production and distribution and the transfer of improved legume production technology. Foundation seed of dry bean, chickpea and lentil cultivars are purchased from research institutes and planted on contract with farmers to produce certified seed. Farmers are selected and contracted from major legume production regions or provinces. Contract growers are supervised in all stages of seed production including field preparation, crop management and harvesting. The seed price is guaranteed in the contract and procured from farmers at production sites and transported to a processing facility located in Ankara. Certified seed is sold either in bulk or directly to farmers with no profit.

In each province, a regional field day and several local field days are organized every year. Contract seed production fields will provide farmers with an opportunity to evaluate new cultivars and improved

crop management technologies. This will provide an opportunity to promote new varieties and other associated production technologies.

Achievements of ITAS

Since 1998, ITAS has successfully multiplied several tonnes of certified seed of *Gokce* variety and distributed to farmers in major chickpea production areas located in 45 provinces. *Gokce* was released in 1997, but through the technology transfer project implemented by ITAS, the variety has been popularized and largely accepted by farmers. At present the variety occupies considerable area planted with food legume crops in Turkey. On the other hand, the State Farms which are officially authorized by the government as public sector suppliers of legume seed has not yet able to produce and provide certified seed of *Gokce* to farmers. Almost all chickpea and lentil varieties previously released by research did not reach farmers because of the failure of public sector seed production and supply system.

Apart from chickpea, a new project entitled

has been launched recently with two lentil cultivars that were released in 2001. The present seed multiplication procedure requires up to a maximum of six years from the release of a new variety to the distribution of certified seed of self-pollinated crops to farmers. ITAS initiated a pre-release seed multiplication of promising lentil varieties while they are still in variety release and registration trials. As a result 40 tonnes of seed of Kafkas variety was produced and made available for distribution to farmers upon its official release by the Variety Release and Registration Board. The pre-release multiplication ensured the availability of seed of new lentil varieties upon release and accelerated their flow from research stations to farmers in the shortest possible period of time.

Since its establishment in 1998, ITAS has been recognized as information clearing house and being consulted by all stakeholders of the legume sector in Turkey.

ITAS will soon establish a research section to conduct market oriented breeding program on food legumes in the country.

Lessons Learnt

The practice of contract production has already been employed by other organizations to multiply sugar beet and sunflower seed. Selection of growers is vital for effective contract seed production programs. At the beginning it is important to limit the number of crops and varieties for seed multiplication and to select cooperative, dedicated and hard working farmers in the community.

Despite spring sowing chickpea is generally affected by Ascochyta blight. Since most farmers still use local landraces the introduction of disease tolerant varieties could be very beneficial and attractive in the pilot areas. This will encourage the adoption of new chickpea varieties by farmers.

A good dry bean crop tends to generate higher gross margin than chickpea, but it appears to be a more risky crop for farmers. Apart from disease problems, it is only produced under full irrigation and could also easily affected by soil conditions.

Farmers are aware of the risks associated with crop production due to drought and crop pests. A seed organization should provide assistance to contract growers to minimize and cope with risks. For example, the payment of a guarantee price based on cultivated area could be an option, although the success of this approach will depend on the loyalty and honesty of the farmers.

Despite poor performance in some areas farmers are generally keen and interested to continue multiplying seed for the project because they perceive the introduction of improved legume varieties as vital to their farming systems. Contract seed growers need to be reassured and encouraged particularly during bad harvest years. They expect trustworthy partnership in coping with the problems they encounter in seed production. The organization of contract growers into an association with common goals and objectives will help to advance and protect the interests of their members.

Conclusion

Since the primary objective of the project focuses on grain export, the real impact of the scheme implemented by ITAS will be realized when farmers adopt new varieties and use certified seed to produce grain legumes that meet export standards. It is unlikely that ITAS could produce all certified seed requirement and solve all problems of food legume production in Turkey. The project could serve as a model how legume seed production constraints could be solved by taking the right approaches through participation of farmers and the industry. The real effort will bear fruit when all stakeholders i.e. producers, exporters and researchers unite under the umbrella

together for a common goal. In conclusion it should be noted that the initiative could serve as a model for promoting the adoption and diffusion of new crop varieties elsewhere in situations where the formal sector failed to address the variety and seed issues.

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Sakar, D., N. Durutan, and K. Meyveci. 1988. Factors Limiting Productivity of Cool-Season Food Legumes in Turkey. *In* Summerfield, R.J. (ed.). World Crops: Cool-Season Food Legumes, 137-146pp. Kluwer Academic Publishers, Dordrecht, The Netherlands.

MEETINGS and COURSES

Announcements 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

ISTA Forest Tree and Shrub Seed Committee Workshop, 20-25 October 2003, Prague, Czech Republic. The ISTA FTS and Forestry and Game Management Research Institute of the Czech Republic have the pleasure to invite you to their workshop on Seed Testing of Forest Tree and Shrub Seeds to be held in Prague, Czech Republic, from 20-25 October 2003. The workshop is intended to deal with practical problems related to tree seed testing of both conifer and broadleaf species. The general aim of the workshop is to create discussion and exchange of information. Based on input from participants the workshop will cover: (i) Purity (e.g. revision of PSD); (ii) Germination (definition of normal seedlings, double tests); (iii) Tetrazolium (germination versus viability); (iv) Health testing (seed-borne fungi in germination and tetrazolium tests); and (v) Referee tests (introduction of new systems). For more information contact the organizer: Mrs Zdenka nd Game Management Research Institute, Research Station Uherske Hradiste #686 04 Kunovice, Czech Republic; Tel: ++420-632-549115; Fax: ++420-632-549119; Email: prochazkova@vulhmuh.cz

Asian Seed 2003, 17-21 November 2003, Bangkok, Thailand. For more information please contact: APSA Secretariat, 726 & 731 (7th floor) Institute of Food Research and Product Development Building, Kasetsart University, Bangkok 10903, Thailand; Tel: ++66-2-9405464; Fax: ++66-2-9405467; Email:apsa@apsaseed.com

Third AFSTA Congress, 24-26 March 2004 Tunis, Tunisia. The AFSTA congress will take place in Tunis, from 24-26 March 2004 where arrangements are now underway. Adequate support has been secured to make this occasion a well-attended event. For more information please 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

Training

Sustainable Agriculture in an Environmental Perspective, 1September to 17 October 2003, Svalv, Sweden. The contents of the program include: ecological basis of agricultural production; plant breeding and biotechnology; planning and monitoring; agriculture in a sustainable society; and policy instruments. The training will take place at the headquarters of Svalf Weibull in Svalv, Sweden. The closing date for application is May 5, 2003. Address for communication: Svalf Weibull AB, Consultancy Department, SE-268 81 Svalv, Sweden; Tel: ++46-418-667000; Fax: ++46-418-667109; E-mail: marie.hardfors@swseed.se

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. International Rules for Seed Testing. The International Rules for Seed Testing lays down detailed standard techniques and procedures, primarily to promote uniformity in seed testing procedures. The publication includes 17 Chapters and Appendices describing the principles and definitions illustrated by tables and methods to be used. The International Rules for Seed Testing are approved and amended at ISTA Ordinary and Extraordinary Meetings based on the recommendations of ISTA Technical Committees. The 2003 edition includes the latest changes at the ISTA Extraordinary Meeting held in Bolivia 3-6 July 2002. The complete set of the International Rules for Seed Testing will include two separate publications: International Rules for Seed Testing, Edition 2003 and Annexe to Chapter 7, Seed Health Testing Methods. The Rules become effective from 1 January 2003. ISBN: 3-906549-38-0 (En); Price $214.

Amarjit S. Basra (ed.). 2000. Hybrid Seed Production in Vegetables: Rationale and Methods in Selected Crops. The monograph published simultaneously as the Journal of New Seeds, 3/4) Price $24.95 (for developing countries). For more information contact: GTZ, Dag-Hammarskjold-Weg 1-5, Postfach 5180, 65726 Eschborn, Germany; Website: http://www.gtz.de.

S. David and B. Oliver. 2002. Handbook Two Business Skills for Small-Scale Seed Producers and Handbook Three: Business Skills for Small- The former designed for direct use by farmers and farmer groups while the latter is for use by service providers interested in strengthening the business capacity of farmers in this area. These aims to enhance the performance of decentralised seed systems are not commercially attractive to the formal seed sector, for example due to the nature of the crop or of the demand for seed or planting material, or the accessibility of many small farming areas. For details contact: Dr Roger Kirkby, CIAT Africa Coordinator, Kawanda Agricultural Research Institute, P. O. Box 6247, Kampala, Uganda. Fax: ++256-41-567635; E-mail: ciat-africa @cgiar.org.

Nicolas, G., K.J. Bradford, D. Come and H. Pritchard (eds.). 2003. The Biology of Seeds: Recent Research Advances. This book presents edited and revised papers from the Seventh International workshop on Seeds, held in Salamanca, Spain in May 2002. Key topics addressed include seed development, seed germination and dormancy, desiccation, seed ecology, seed biotechnology. ISBN 0 85199 653 1; Price $175; 500 pp; Website: http://www.cabi-publishing.org.

Evenson, R.E. and D. Gollin (eds.). 2003. Crop Variety Improvement and Its Effects on Productivity: The Impact of International Agricultural Research. This volume reports the findings of a study of the productivity impacts of varietal improvement research conducted at a number of international centers affiliated with the CGAIR. The study was initiated and supported by the Impact Assessment and Evaluation Group of the CGIAR. Econometric models are used to evaluate investment in these cases of agricultural research and to analyze impact in selected countries (Brazil, China, India) and crops (wheat, rice, barley, maize, sorghum, millet, beans, lentils, potato, cassava). ISBN 0 85199 549 7; Price $140; 544 pp.

P.G. Pardey (ed.). 2002. The Future of Food: Biotechnology Markets and Policies in an International Setting. The book offers contributions from a wide range of authors and fields. They include assessment of the global economic gains that are likely to result from growing GM grain and oilseed crops, and the costs to countries who choose to ban GM imports; the future potential of bio-science, and the perspective this gives on current developments such as Bt cotton; the role that public research agencies may have, and their ability to take advantage of privately developed technologies; and an analysis of the trade-offs between higher costs and faster results in marker-assisted maize breeding. Of primary interest to policy-makers, it offers a useful appraisal of the economic dimension to the biotechnology debate. Published by the IFPRI and distributed by Johns Hopkins University Press 2715 N, Charles Street, Baltimore, Maryland, 21218-4319, USA. Website: www.jhupbooks.com,

D.R. Murray. 2003. Seeds of Concern: The Genetic Manipulation of Plants. This book makes a significant contribution to the debate about the applications and implications of gene technology, from the perspective of a plant biologist. ISBN 0 85199 725 2; Price $35; 158 pp.

S. Adams and V. Henson-Apollonio 2002. Defensive Publishing: A Strategy for Maintaining Intellectual Property as Public Goods: ISNAR Briefing Paper 53. Scientific research generates intellectual property which can

be patented provided it meets the requirement for novelty. Where public research institutions need to ensure that the products of their work remain accessible to those whom they wish to benefit, it may be appropriate to block others from obtaining proprietary rights over the same matter by deliberately publishing information. No one else could then patent and subsequently control the use of a research finding or product because they would be unable to satisfy the requirement for novelty. This is the subject of ISNAR Briefing Paper 53 intended primarily for research managers in public institutions who may need to consider whether defensive publishing would be appropriate and what form it should take. Can be read online at http://www.isnar.cgiar.org/publications/briefing/bp53.htm or downloaded in Pdf format from ftp://ftp.cgiar.org/isnar/publicat/bp-53.pdf.

FAO. 2003. World Agriculture: Towards 2015/2030-An FAO Perspective. This report is FAO's latest assessment of the long-term outlook for the world's food supplies, nutrition and agriculture. It presents the projections and the main messages. The projections cover supply and demand for the major agricultural commodities and sectors, including fisheries and forestry. This analysis forms the basis for a more detailed examination of other factors, such as nutrition and under nourishment, and the implications for international trade. The report also investigates the implications of future supply and demand for the natural resource base and discusses how technology can contribute to more sustainable development.

One of the report's main findings is that, if no corrective action is taken, the target set by the World Food Summit in 1996 (that of halving the number of undernourished people by 2015) is not going to be met. Nothing short of a massive effort at improving the overall development performance will free the developing world of its most pressing food insecurity problems. The progress made towards this target depends on many factors, not least of which are political will and the mobilization of additional resources. Past experience underlines the crucial role of agriculture in the development process, particularly where the majority of the population still depends on this sector for employment and income. A hardcopy of this report and the Summary report can be ordered at http://www.fao.org/icatalog/inter-e.htm

New Journal Launched on Food, Agriculture and Environment

Scope and Aims

Research on Food and Agriculture is progressively moving towards an interdisciplinary study of sustainable food production to meet the demand of growing human populations. However, as more countries industrialize, there is an increase in air and water pollution, soil contamination, as well as elevated levels of global warming and depletion of the ozone layer. This complex scenario challenges researchers to develop and test more appropriate technologies for sustainable agriculture. Research, for example, is being carried out to overcome problems of environmental stress, minimize the use of pesticides, slow post-harvest storage losses, and explore nutrition, animal science and human health, by using conventional and new technologies such as biotechnology, mutation-assisted breeding and molecular biology.

The Journal of Food, Agriculture, and Environment (JAFE) is dedicated to meeting the need for a new journal that can encompass this wide range of topics and interdisciplinary approaches. JAFE will publish (in print and on-line versions) peer-reviewed original research, protocols, critical reviews and short communications in food science and technology, and agriculture, with particular emphasis on interdisciplinary studies on food, human nutrition, agricultural, animal science and environment. For more details please contact: World Food RD Ltd/JFAE Editorial Office, Meri-Rastilantie 3C, FIN-00980 Helsinki, Finland; Tel: ++358-50-5051135; Email: editoria@world-food.net or Info@world-food.net

Useful Internet Sites/Electronic Publications

Funding Opportunities

The Global Development Network is producing an electronic newsletter that contains funding opportunities for researchers in developing countries. These include research grants, scholarships, calls for project proposals, and subsidized conference and workshop attendance. Details are available at http://www.gdnet.org/resources/funding.htm

Research Grants

The International Foundation for Science (IFS) provides research grants of up to US$12,000 to support young scientists from developing countries. The research should focus on the management, use and conservation of biological resources and their environment and the period in which the research is carried out should be not less than a year and not more than three years. For specific details, contact: IFS Secretariat, Grev Turengatan 19, SE-114 38

Stockholm, Sweden. Fax: ++46-8-545-81801; E-mail: info@ifs.se; Website: http://www.ifs.se/research_grants.htm

Seed identification

Seed identification can now be facilitated by visiting a website where over 700 full color photographs are displayed. The database is meant for seed analyst, seed industry (seed conditioners, seed labelers, seed marketing/sales, seed buyers/customers) educators (college and university, agricultural extension, high school) and general public who are interested in seed identification. This database will help everyone associated with the seed industry to identify noxious weeds. Access is based on registration and payment of fees. For more information contact: E-mail: seedings@colostate.edu; Webiste: http://www.seedimages.com

Search Engine

The Info Finder is a new search engine for information on agriculture, hunger, poverty and the environment from web pages and online publications that are produced by FAO the UN Food and Agriculture Organization and CGIAR Consultative Group on International Agricultural Research. Info

World Agricultural Information Center and the

For details, go to the website at http://infofinder.cgiar.org.

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