DIRECTORY OF GERMPLASM COLLECTIONS

IBPGR

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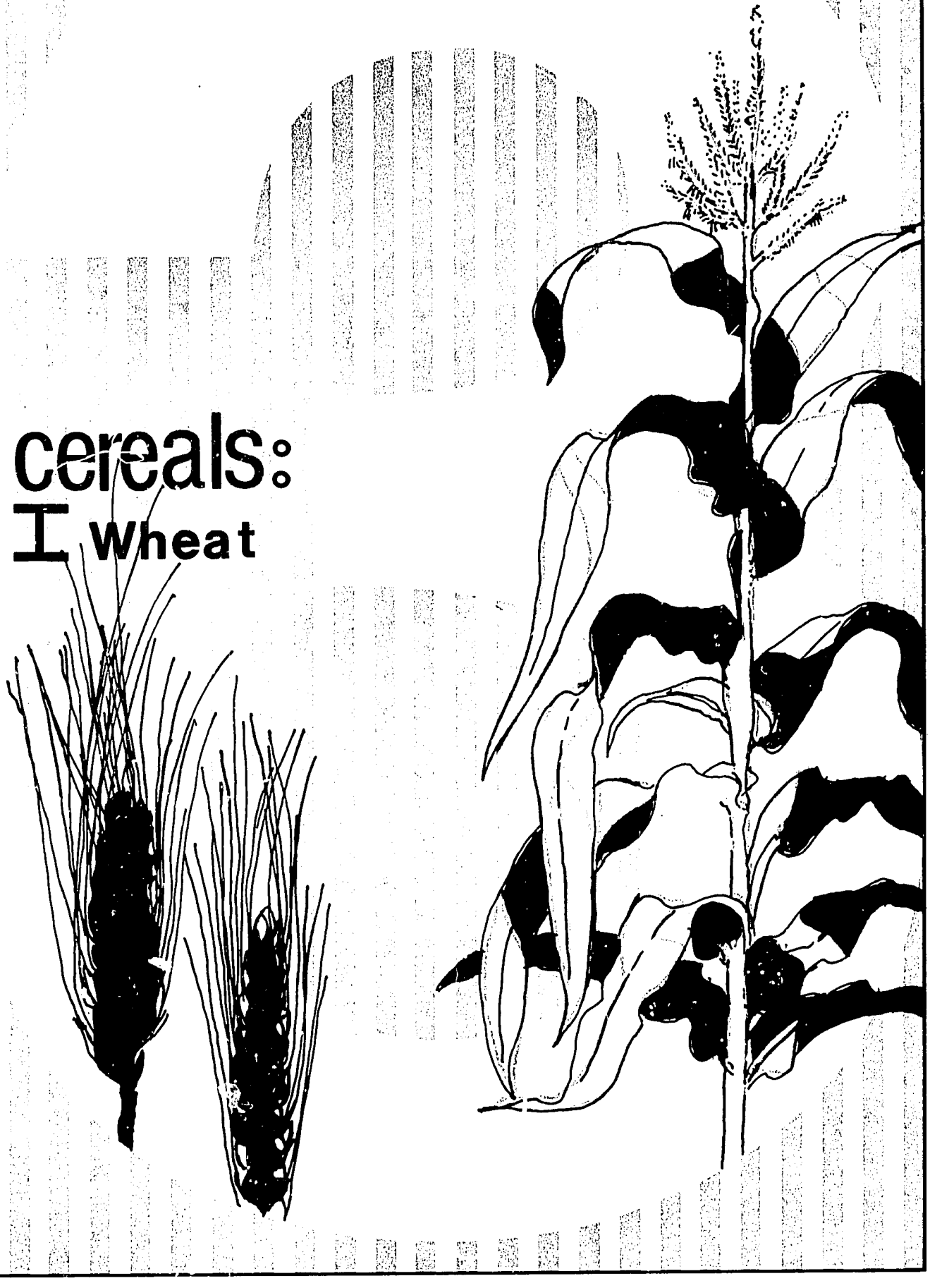
# cereals:
# I Wheat



AGP:IBPGR/80/89
October 1980

INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES

# DIRECTORY OF GERMPLASM COLLECTIONS

## III. CEREALS

### 1. WHEAT

by

G. Ayad, Jane Toll and J.T. Williams
Consultants and Executive Secretary

IBPGR Secretariat
Rome, 1980

*The International Board for Plant Genetic Resources (IBPGR) is an autonomous, international, scientific organization under the aegis of the Consultative Group on International Agricultural Research (CGIAR). The IBPGR, is composed of 15 members from 13 countries; its Executive Secretariat is provided by the Food and Agricultural Organization of the United Nations. The basic function of the IBPGR, as defined by the Consultative Group, is to promote an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. The Consultative Group mobilizes financial support from its members to meet the budgetary requirements of the Board.*

IBPGR Secretariat
Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Via delle Terme di Caracalla, Rome 00100, Italy

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## PREFACE

With the development of a global network of genetic resources activities it has become increasingly apparent that there is an information gap relating to what material is held where. This gap will persist until all major collections are adequately documented and information as well as samples readily exchanged.

The IBPGR has therefore agreed to issue directories of collections which should not only be useful to scientists involved with genetic resources but also should stimulate curators to provide more detailed information.

The data included in these directories are, of necessity, incomplete: we have relied upon answers to questionnaires, data held in the Secretariat and in published reports, indices seminum and verbal communications. It is our intention to keep the directories under continuing review and to issue revisions as and when necessary. All data are being computerized so that ultimately we can answer queries more readily. We apologize to these centres which should perhaps be included; but we have attempted to incorporate information on all major holdings. Additions and corrections will be welcomed.

The nomenclature of *Triticum* and *Aegilops* species varies according to the user. Hence we have listed taxa as used by the curators. An appendix provides a summary of the synonomy for those who wish to cross reference the diverse species' listings.

J.T. Williams
Executive Secretary

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## AFGHANISTAN

Plant Genetic Resources Unit
Ministry of Agriculture and Land Reform
Darul Aman Research Station
Kabul

| | |
|---|---|
| Curator/person in charge: | M.A. Rashid |
| Details of samples: | *Triticum* spp. 1726 landraces and wild species, and some introductions |
| Geographical representation: | Afghanistan |
| Evaluation and documentation: | Partial and manual. About 300 samples have been evaluated for disease and insect resistances and winter and spring types have been identified |
| Storage: | Medium-term. Seeds stored in cans at 0°C and 35% R.H. Duplicates of part of the collection are held in base storage at Gatersleben, GDR; NSSL, USA; and Bari, Italy |

## ALGERIA

Institut de Dévéloppement des Grandes Cultures
B.P. 16
El Harrach, Algiers

| | |
|---|---|
| Curator/person in charge: | N. Kadra |
| Details of samples: | *Triticum* spp. and *Aegilops* spp. 200 landraces, cultivars and wild species |
| Geographical representation: | Landraces from Algeria and some introductions |
| Evaluation and documentation: | Partial and manual |
| Storage: | Active. Duplicates at Bari, Italy in base storage collection |

ARGENTINA

Estación Experimental Regional Agropecuaria
Instituto Nacional de Tecnologia Agropecuaria (INTA)
Casilla de Correo 31
2700 Pergamino

| | |
|---|---|
| Curator/person in charge: | E.F. Godoy |
| Details of samples: | *Triticum* spp. 4852 including breeding lines |
| Geographical representation: | Mainly South America |
| Evaluation and documentation: | Partial and manual |
| Storage: | Seeds with 7% m.c. stored in laminated foil bags at -15°C for long-term storage and at ca. 0°C for medium-term storage. Some duplicates in other centres in South America |

AUSTRALIA

Australian Wheat Collection
New South Wales Department of Agriculture
Private Mail Bag 944
Tamworth
N.S.W. 2340

| | |
|---|---|
| Curator/person in charge: | K.J. Symes |
| Details of samples: | 20200 *Triticum* spp. landraces, cultivars and wild spp. 250 *Aegilops* spp. |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Data are available for 41 descriptors and these are computerized |
| Storage: | Long-term. Seeds with 6% m.c. in sealed laminated packets at -10°C and 45% R.H. Samples are duplicated as active collections at research institutes throughout Australia |

BELGIUM

Faculté des Sciences Agronomiques de l'Etat
B 5800 Gembloux

| | |
|---|---|
| Curator/person in charge: | R. Lecomte |
| Details of samples: | *T. spelta* ca. 500 old varieties and types collected 1948 - 1950 |
| Geographical representation: | Mostly Belgium |
| Evaluation and documentation: | |
| Storage: | Material held in several cold rooms ranging from 0°C to -20°C |

**BRAZIL**

Centro Nacional de Pesquisa de Trigo (CNPT)
EMBRAPA
Passo Fundo
Rio Grande do Sul

| | |
|---|---|
| Curator/person in charge: | A.C.A. Zanatta |
| Details of samples: | *A. bicornis, A. caudata, A. crassa, A. cylindrica, A. Kotschyi, A. Longissima, A. Ovata, A. speltoides, A. squarrosa, A. triaristata, A. Triuncialis, A. umbellulata, A. ventricosa, T. aestivum* subsp. *compactum, T. aestivum* subsp. *spelta, T. aestivum* subsp. *sphaerococcum, T. aestivum* subsp. *vavilovi, T. aestivum* subsp. *vulgare, T. monococcum* subsp. *boeoticum, T. monococcum* subsp. *monococcum, T. timonovum, T. timopheevi* subsp. *timopheevi, T. turgidum* subsp. *carthlicum, T. turgidum* subsp. *dicoccoides, T. turgidum* subsp. *dicoccum, T. turgidum* subsp. *paleocolchicum, T. turgidum* subsp. *turgidum* conv. *durum, T. turgidum* subsp. *turgidum* conv. *polonicum, T. turgidum* subsp. *turgidum* conv. *turanicum, T. turgidum* subsp. *turgidum* conv. *turgidum, T. ventricosa, T. Zhukovskyi*<br>ca. 7000 landraces, cultivars, wild and weedy species |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Complete for 50 descriptors |
| Storage: | Short-term (10°C and 30% R.H.) The collection will be duplicated at the Centro Nacional de Recursos Genéticos (CENARGEN) Brasilia where both long-term (-18°C) and medium-term (-1°C) stores will be operational in 1981. CENARGEN coordinates the national germplasm activities (Director - D. Giacometti) |

BULGARIA

Institute of Plant Introduction and
Genetic Research
4122 Sadovo
Plovdiv

| | |
|---|---|
| Curator/person in charge: | K. Kostov |
| Details of samples: | 8000 *T. aestivum*, 3000 *T. durum* and 2600 other *Triticum* spp. Mostly introductions but collection includes a small number of local landraces |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Partial and manual |
| Storage: | Active. Material is largely duplicated at VIR, Leningrad, USSR; and Gatersleben, GDR. |

CANADA

Plant Gene Resources of Canada (PGR)
Central Office
Ottawa Research Station
Ottawa, Ontario K1A 0C6

| | |
|---|---|
| Curator/person in charge: | R. Loiselle |
| Details of samples: | *T. aestivum*, *T. dicoccum*, *T. durum*, other *Triticum* spp. and *Aegilops* spp. 9100 *Triticum* spp. Landraces, cultivars and wild spp. |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Evaluation is carried out by Canadian breeders (Many research stations throughout Canada hold active collection of wheat and *Aegilops*). Compilation and computerization of data is in progress at PGR. |
| Storage: | Long-term. Seeds with 7-8% m.c. stored in sealed laminated foil pouches at -20°C. The collection includes samples from institutions in Austria, China, France, GDR, Hungary, Italy, Poland, Romania, UK, USA, USSR. |

CHINA

Crop Germplasm Institute (CGI)
Chinese Academy of Agricultural
Sciences (CAAS)
Beijing

| | |
|---|---|
| Curator/person in charge: | Xu Yun-Tian |
| Details of samples: | *Triticum* spp. 20000 population samples. Collected in the 1950s |
| Geographical representation: | China, all provinces |
| Evaluation and documentation: | |
| Storage: | Active at institutes of the CAAS and at provincial Agricultural Academies where storage conditions vary from room temperature to -10°C. The CGI aims to coordinate the national germplasm activites. A medium-term store is under construction at Beijing and a long-term store is planned. This national genebank will hold samples of all collections in China. |

COLOMBIA

Instituto Colombiano Agropecuario (ICA)
Tibaitatá
A.A. 151123 El Dorado
Bogotá

| | |
|---|---|
| Curator/person in charge: | L.E. Lopez |
| Details of samples: | 150 *Triticum* spp. |
| Geographical representation: | Unspecified |
| Evaluation and documentation: | Complete for 33 descriptors and computerized |
| Storage: | Seeds stored at 12°C. Long-term store proposed |

CYPRUS

Agricultural Research Institute (ARI)
Nicosia

| | |
|---|---|
| Curator/person in charge: | V. Krentos |
| Details of samples: | 79 *T. durum* landraces |
| Geographical representation: | Cyprus |
| Evaluation and documentation: | Partial and manual |
| Storage: | Active. Material deposited in base storage at Bari, Italy |

CZECHOSLOVAKIA

Department of Genetic Resources
Institute of Genetics & Plant Breeding
16106 Prague 6 - Ruzyne 507

| | |
|---|---|
| Curator/person in charge: | I. Bares |
| Details of samples: | *Triticum aestivum*, (5000) *T. aethiopicum*, *T. araraticum*, *T. boeoticum*, *T. carthlicum*, *T. dicoccoides*, *T. dicoccon*, *T. durum*, (300) *T. georgicum*, *T. isphahanicum*, *T. macha*, *T. monococcum*, *T. polonicum*, *T. spelta*, *T. sphaerococcum*, *T. timococcum*, *T. timonorum*, *T. timopheevii*, *T. turanicum*, *T. turgidum*, *T. vavilovii*, and *T. zhukovskyi*, *Aegilops caudata*, *A. ovata* and *A. speltoides*. Apart from *T. aestivum*, and *T. durum*, there are ca. 200 samples of other species of *Triticum*. There are 40 samples of *Aegilops* spp. |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Partial and in process of computerization |
| Storage: | Seeds stored at 3-4°C for medium-term storage and at -20°C for long-term storage. Material is duplicated in medium-term storage (3-4°C) at the Cereal Research Institute, Kromeriz, Czechoslovakia |

## DENMARK

Royal Veterinary & Agricultural University
Crop Husbandry & Plant Breeding Department
Thorvaldsenvej 40
1871 Copenhagen

| | |
|---|---|
| Curator/person in charge: | S. Andersen |
| Details of samples: | 500 *Triticum* spp. landraces and cultivars |
| Geographical representation: | Many countries, unspecified |
| Evaluation and documentation: | Partial and computerized |
| Storage: | Medium-term. Seeds with 6% m.c. stored in glass jars at 0-4°C and 30-60% R.H. Samples are duplicated at the Nordic Gene Bank, Lund, Sweden for long-term storage |

## ETHIOPIA

Plant Genetic Resource Center
P.O. Box 30726
Addis Ababa

| | |
|---|---|
| Curator/person in charge: | Melaku Worede |
| Details of samples: | 6000 *Triticum* spp. mainly landraces |
| Geographical representation: | Mostly Ethiopia but some introductions |
| Evaluation and documentation: | Partial for disease and pest resistance and lodging. Edge-punched cards currently in use for documentation |
| Storage: | Seeds with 5-6% m.c. stored in cans at 4°C and 30% R.H. for medium-term storage and in foil packets at -20°C for long-term storage. Permanently sealed cans to be introduced for containers in the base storage. Many samples are duplicated at Braunschweig, FRG and Bari, Italy |

FRANCE

Institut National de la Recherche Agronomique (INRA)
Station d'Amélioration des Plantes
Route de St. Cyr
78000 Versailles

Curator/person in charge: R. Cassini

Details of samples: *Triticum* spp. ca.2500 mostly *T. aestivum* cultivars and breeding lines but some landraces and primitive species

Geographical representation: World-wide

Evaluation and documentation: Partial and manual

Storage: Active at 5 centres with duplications (Versailles, Clermont-Ferrand, Montpellier, Dijon, Rennes). Some duplicates at Station de Selection de Plantes de Grande Culture, Tourneur, Coulommiers

GERMANY - DEMOCRATIC REPUBLIC

Zentralinstitut für Genetik und Kulturpflanzenforschung
Correnssstrasse 3
4325 Gatersleben

Curator/person in charge: C. Lehmann

Details of samples: 10035 *Triticum* spp. (landraces, wild and weedy species and hybrids) 396 *Aegilops* spp. *Aegilops aucheri, A. bicornis, A. caudata, A. columnaris, A. comosa, A. crassa, A. cylindrica, A. heldreichii, A. juvendlis, A. rotschyi, A. longissima, A. lorentii, A. mutica, A. ovata, A. recta, A. speltoides, A. sharonensis, A. tauschii, A. triaristata, A. triancialis, A. umbelulata, A.uniaristata, A. variabilis, A. vavilovii, A. ventricosa, Triticum aestivum, T. boeoticum, T.carthilicum, T. dicoccoides, T. dicoccum, T. durum, T. fungicidium, T. macha, T. monococcum, T. polonicum, T. spelta, T. sphaerococcum, T. timopheevi, T. turanicum, T. turgidum, T. urartu, T. vavilovii* and *T. zhukovskyi*

Geographical representation: World-wide

Evaluation and documentation: In progress and computerized

Storage: Seeds with 8-9% m.c. stored in sealed glass jars with silica gel at -15°C for long-term storage and -5-0°C and 30% R.H. for medium-term storage. Duplicates at VIR, Leningrad, USSR.

GERMANY - FEDERAL REPUBLIC

Institut für Pflanzenbau und Pflanzenzüchtung
Bundesforschungsanstalt für Landwirtschaft
Braunschweig - Völkenrode (FAL)
Bundesallee 50
D-3300 Braunschweig

| | |
|---|---|
| Curator/person in charge: | M. Dambroth |
| Details of samples: | 8520 *Triticum* spp. (landraces, cultivars; wild and weedy species), 29 *Aegilops* spp. *Triticum abysinicum, T. Aegilopoides, T. aestivo-compactum, T. aestivum, T. aethiopicum, T. araraticum, T. aucheri, T. biucialis, T. boeoticum, T. carthilicum, T. dicoccoides, T. dicoccon, T. durum, T. fungicidum, T. georgicum, T. isphahanicum, T. ligustica, T. macha, T. monococcum, T. ovata, T. persicum, T. polonicum, T. spelta, T. speliforme, T. speltoides, T. sphaerococcum, T. subcompactum, T. tauschii, T. timopheevi, T. triaristata, T. triuncialis, T. turanicum, T. turgidum, T. umbellulata, T. variabilis, T. ventricosa,* and *T. zhukowskyi. Aegilops caudatus, A. compactoides, A. compactum, A. crassa, A. cylindrica,* and *A. dicoccoides.* |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Computerized and complete for 35 descriptors |
| Storage: | Seeds with 6% m.c. stored in sealed cans at -10°C for long-term storage and in paper bags at 4°C and 30% R.H. for medium-term storage |

GREECE

Cereal Institute
Thessalonika

| | |
|---|---|
| Curator/person in charge: | J. Karayiannis |
| Details of samples: | 515 *T. aestivum* 302 *T. durum* introduced cultivars; *Triticum* spp. 200 landraces; 8 *Aegilops* spp. |
| Geographical representation: | Landraces from Greece and world-wide introduction |
| Evaluation and documentation: | Partial and manual. Computerization is planned |
| Storage: | Active. Long-term store proposed. Landraces duplicated at Bari, Italy for long-term storage |

HUNGARY

Section for Plant Introduction and
Gene Bank
National Institute of Agrobotany
Tapioszele 2766

| | |
|---|---|
| Curator/person in charge: | L. Holly |
| Details of samples: | 5000 *Triticum* spp. and *Aegilops* spp. |
| Geographical representation: | World-wide |
| Evaluation and documentation: | In progress and computerized |
| Storage: | Seeds with 5-8% m.c. stored in air-tight containers at 4°C and 15-50% R.H. for medium-term storage. Long-term store (-20°C) under construction. Samples are duplicated at VIR, Leningrad, USSR and Gatersleben, GDR. |

INDIA

All Indian Coordinated Wheat Programme
Indian Agricultural Research Institute (IARI)
New Delhi 110012

| | |
|---|---|
| Curator/person in charge: | M.V. Rao |
| Details of samples: | *Triticum* spp. 7000 + cultivars |
| Geographical representation: | India |
| Evaluation and documentation: | Partial and manual |
| Storage: | Active. NBPGR IARI Campus New Delhi coordinates the national germplasm activities. Director, K.L. Mehra |

INDIA

National Bureau of Plant Genetic Resources (NBPGR)
Indian Agricultural Research Institue (IARI) Campus
110012 New Delhi

| | |
|---|---|
| Curator/person in charge: | K.L. Mehra |
| Details of samples: | *T. aestivum, T. durum, T. dicoccon* 1115 landraces |
| Geographical representation: | India |
| Evaluation and documentation: | Partial, computer being set up. |
| Storage: | Medium-term (-5°C). Long-term store planned for 1981. The NBPGR coordinates the Indian genetic resources activities. The following institutions hold active collections of indigenous varieties and introductions: Punjab Agricultural University, Ludhiana - 4000. Agricultural Research Station, Niphad, Mahurashtra - 1000 + |

IRAN

Seed and Plant Improvement Institute (SPII)
Plant Genetic Resources Division
Karaj

| | |
|---|---|
| Curator/person in charge: | P. Parveneh |
| Details of samples: | *Triticum* spp. and *Aegilops* spp. number of samples unspecified, but a large number of single spike samples and a smaller number of population samples |
| Geographical representation: | Iran |
| Evaluation and documentation: | Partial and manual |
| Storage: | Medium-term seed store (0-5°C). |

IRAQ

Agricultural Research Centre (ARC)
Plant Genetic Resources Unit
Abu Ghraib
Baghdad

| | |
|---|---|
| Curator/person in charge: | A.T. Sharif |
| Details of samples: | 389 *Triticum* spp. landraces, cultivars and wild species, 30 *Aegilops* spp. *Triticum araraticum*, *T. dicoccoides*, *T. becticum*, *T. urartu*, *Aegilops triuncialis*, *A. crassa*, *A. umbellulata*, *A. biuncialis*, and *A. speltoides* |
| Geographical representation: | Iraq |
| Evaluation and documentation: | Partial and manual |
| Storage: | Medium-term. Seeds stored in cans at 5-10°C. |

ISRAEL

Agricultural Research Organization (ARO)
The Volcani Centre
P.O. Box 6
Bet Dagan

| | |
|---|---|
| Curator/person in charge: | M. Zur |
| Details of samples: | 25000 *Triticum aestivum*, 6000 *T. durum*, 600 *T. dicoccoides*, 100 *T. spelta* and 100 *T. compactum* landraces and cultivars |
| Geographical representation: | Near East and introductions |
| Evaluation and documentation: | Complete for 18 descriptors for 2656 samples of *Triticum* spp. Data are being computerized |
| Storage: | Active. A National Genebank with long-term storage facilities is being developed |

ITALY

Instituto del Germoplasma del CNR
Via G. Amendola 165/A
70126 Bari

| | |
|---|---|
| Curator/person in charge: | E. Porceddu |
| Details of samples: | *Triticum aestivum, T. Turgidum, T. aegilopoides, T. aethiopicum, T. araraticum, T. boeoticum, T. carthlicum, T. compactum, T. dicoccoides, T. dicoccum, T. eridnianum, T. fungicidum, T. isphanicum, T. macha, T. monococcum, T. militine, T. orientale, T. paleocolchicum, T. persicum, T. polonicum, T. spelta, T. sphaerococcum, T. timonovum, T. timopheevi, T. turanicum, T. turgidum, T. urartu, T. vavilovii, T. zhukovskii.* 26000 landraces, cultivars and wild species |
| Geographical representation: | World-wide |
| Evaluation and documentation: | 1600 samples evaluated for 75 descriptors and 39 samples for 49 descriptors. Data computerized |
| Storage: | Seeds with 5-6% m.c. stored in sealed or vacuum sealed foil packets at -18°C for long-term storage and at 0°C and 40% R.H. for medium-term storage. Many samples duplicated at VIR, Leningrad, USSR and NSSL, USA |

JAPAN

National Institute of Agricultural
Sciences (NIAS)
Division of Genetics
Seed Storage Laboratory
Kannondai 3.1.1.
Yakabe-machi
Tsukuba-gun
Ibaraki-ken 300-21

| | |
|---|---|
| Curator/person in charge: | K. Kumagai |
| Details of samples: | *Triticum aestivum, T. compactum, T. dicoccum, T. durum, T. monococcum, T. polonicum, T. spelta, T. turgidum.* 4000 + landraces and cultivars |
| Geographical representation: | Japan and introductions |
| Evaluation and documentation: | Partial and computerized |
| Storage: | Seeds with 6-7% m.c. stored in vacuum sealed cans at -10°C for long-term storage and in screw lid cans at -1°C and 35% R.H. for medium-term storage. Some duplicates at Kitami Agricultural Experimental Station, Japan |

JAPAN

Plant Germplasm Institute
Faculty of Agriculture
Kyoto University
Mukoshi
Kyoto 617

Curator/person in charge: M. Tanaka

Details of samples: 4611 *Triticum* spp. landraces, weedy and wild species, 2346 *Aegilops* spp. *Triticum boeoticum, T. urartu, T. monococcum, T. araraticum, T. timopheevi, T.dicoccoides, T. dicoccum, T. georgicum, T. durum, T. turgidum, T. orientale, T. pyramidale, T. polonicum, T. isphahanicum, T. persicum, T. abyssinicum, T. spelta, T. macha, T. vavilovii, T. aestivum, T. compactum, T. sphaerococcum,* and *T. zukovskyi. Aegilops speltoides, A. longissima, A. bicornis, A. caudata, A. umbellulata, A. mutica, A. comosa, A. uniaristata, A. squarrosa, A. cylindrica, A. ovata, A. triaristata, A. columnaris, A.biuncialis, A. variabilis, A. triuncialis, A. crassa, A. ventricosa, A. vavilovii* and *A.juvenalis*

Geographical representation: Greece, Italy, Romania; Afghanistan, Iran, Iraq, Israel, Jordan, Lebanon, Syria, Turkey; India, Pakistan; Japan, China, Mongolia; USSR; Egypt, Ethiopia

Evaluation and documentation: The wheat collection is evaluated for: Awn length, empty glume hairiness and colour, seed colour, earliness of flowering date, inflated glume type, ear variation, ear maturity date and pollen and seed fertility of early and late maturing ears.
The *Aegilops* collection is evaluated for: variation of ears, width/length, ratio of sterile glume, variation in plant height and tillering habits, waxiness, colour and shape of ears, shooting date, seed fertility, growing habit resistance to yellow, brown and black rusts and seed fertility relationships among inter-regional hybrids.
Data computerized and available in English

Storage: Medium-term seeds stored in vacuum sealed cans at 5°C and 50% - 70% R.H. Some duplicates at ARARI, Izmir, Turkey and *Aegilops* spp. at VIR, Leningrad, USSR

MEXICO

Instituto Nacional de Investigaciones Agrícolas (INIA)
Unidad de Recursos Genéticos
Arcos de Belem, 79
Mexico, D.F.1

| | |
|---|---|
| Curator/person in charge: | F. Cárdenas Ramos |
| Details of samples: | *Triticum* spp. Number of samples unspecified |
| Geographical representation: | Unspecified |
| Evaluation and documentation: | Partial and manual |
| Storage: | Seeds stored in sealed paper bags at 5°C and 10% R.H. for medium-term storage |

NETHERLANDS

Foundation for Agricultural Plant Breeding (SVP)
Laboratory de Haaff
P.O. Box 117
6700 AC Wageningen

| | |
|---|---|
| Curator/person in charge: | H. Lamberts |
| Details of samples: | *Triticum aestivum, T. durum, T. compactum, T. sphaerococcum, T. turgidum, Triticum* spp. and *Aegilops* spp. 4000 + landraces, cultivars and wild species |
| Geographical representation: | World collection with Europe, Pakistan, Ethiopia and India well represented |
| Evaluation and documentation: | Partial |
| Storage: | Medium-term. Seeds with 6-12% m.c. stored in cans or envelopes at 2°C and 15-20% R.H. Collection held jointly by SVP and the Institute of Plant Breeding (IVP) University of Wageningen. A National Gene Bank is proposed |

NORDIC COUNTRIES (DENMARK, FINLAND, ICELAND, NORWAY, SWEDEN)

Nordic Gene Bank
Box 1543
S-221 01 Lund
Sweden

| | |
|---|---|
| Director: | E. Kjellqvist |
| Details of samples: | *Triticum* spp. Landraces, cultivars and genetic stocks including mutants. Gene-bank established in 1979. Deposition of collections from the participating countries in progress |
| Geographical representation: | Varieties from Denmark, Finland, Iceland, Norway, Sweden and introductions relevant to the climatic zones of the Nordic countries |
| Evaluation and documentation: | Evaluation organized by the Gene Bank utilizing suitable locations within the participating countries. Data will be centralized and computerized at the Gene Bank. |
| Storage: | Long-term storage being built (-20°C, capacity 50000 samples of ca. 15-20000 seeds). Duplication in permafrost is planned |

PAKISTAN

Agricultural Research Council (ARC)
Islamabad

| | |
|---|---|
| Curator/person in charge: | Anwar Khan |
| Details of samples: | *Triticum* spp. 371 landraces and 6000 introduced cultivars |
| Geographical representation: | Pakistan and introductions |
| Evaluations and documentation: | Partial and manual |
| Storage: | Medium-term. Seeds stored in cans at 0°C. Some duplicates at SVP, Wageningen, Netherlands. The following institutions in Pakistan maintain active collections:<br>Department of Plant Breeding and Genetics<br>West Pakistan Agricultural University<br>Lyallapur (7000 + cultivars)<br>Agricultural Research Institute<br>Tandojam (3000 + cultivars) |

POLAND

Plant Breeding and Acclimatization
Institute (IHAR)
Department of Central Plant Collection
Radzikow

| | |
|---|---|
| Curator/person in charge: | J. Szymer |
| Details of samples: | 8000 landraces, cultivars and wild species. *Triticum aestivum, T.aethiopicum, T. dicoccoides, T. dicoccon, T. durum, T. macha, T. monococcum, T. orientale, T. paleo-colchicum, T. persicum, T.polonicum, T. pyramidale, T. spelta, T. sphaerococcum, T. timopheevi, T. turanicum, T. turgidum, T. zhukovskyi; Aegilops longissima, A. squarrosa,* and *A. bicornis* |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Partial for ecological tolerance disease resistance and yield components. Data computerized |
| Storage: | Active. Long-term store proposed. Duplicates at Gatersleben, GDR and VIR, Leningrad, USSR. |

PORTUGAL

Genetics Department
Estaçao Agronomica Nacional
Instituto Nacional de Investigaciones
Agropecuaria (INIA)
Oeiras

| | |
|---|---|
| Curator/person in charge: | M. Mota |
| Details of samples: | *T. aestivum.* 111 landraces |
| Geographical representation: | Portugal |
| Evaluation and documentation: | Partial and manual |
| Storage: | Medium-term. Deep freeze cabinets. Duplicates at Bari, Italy in long-term storage. The Plant Breeding Station at El Vas maintains an active collection of 6000 cultivars |

ROMANIA

Research Institute for Cereals and Technical Plants
8264 Fundulea
Jud. Ilfov

| | |
|---|---|
| Curator/person in charge: | P. Varga |
| Details of samples: | *Triticum* spp. 6000 landraces, wild and weed species |
| Geographical representation: | Romania and other European countries |
| Evaluation and documentation: | Partial for problems linked to plant breeding |
| Storage: | Active. Duplicates at Gatersleben, GDR and VIR, Leningrad, USSR |

SPAIN

Instituto Nacional de Investigaciones Agrarias (INIA)
Finca "El Encin"
Ap. 127 Alcala de Henares
Madrid

| | |
|---|---|
| Curator/person in charge: | M.A. Bueno and A. Monteaguado |
| Details of samples: | 500 landraces, cultivars and wild species. *Triticum monococcum, T. turgidum, T. durum, T. aestivum, Aegilops ovata, A. triuncialis* and *A. ventricosa* |
| Geographical representation: | Spain and other Mediterranean countries |
| Evaluation and documentation: | Partial and in process of computerization |
| Storage: | Medium-term (-2°C) and long-term stores at -18°C and 25-30% R.H. and at -20°C. Duplicates at Bari, Italy and VIR, Leningrad, USSR. The following institutions maintain active collections of *Triticum* cultivars:<br>- Centro Regional de Investigación y Desarrollo Agrario (CRIDA)<br>- Consejo Superior de Investigaciones Científicas (CSIC). |

TUNISIA

National Agricultural Institute
Tunis

Curator/person in charge:

Details of samples: *Triticum* spp. and *Aegilops* spp. 200 landraces and wild species

Geographical representation: Tunisia

Evaluation and documentation: Partial and manual

Storage: Active. Duplicates at Bari, Italy on long-term storage

TURKEY

Aegean Regional Agricultural Research Institute (ARARI)
P.O. Box 9
Menemen
Izmir

Director: K. Temiz

Details of samples: *Triticum* spp. and *Aegilops* spp. 4186 populations of landraces, cultivars and wild species representing ca. 6500 samples. There are 3216 populations of cultivated species and 970 populations of wild taxa

Geographical representation: Austria, Canary Isles, Ethiopia, Iran, Iraq, Nepal, Tunisia, Turkey

Evaluation and documentation: Partial for 44 descriptors. Computerized

Storage: Medium-term. Seeds with 6% m.c. stored in sealed metal containers at 0°C. Long-term store (-15°) constructed but not operational. Duplicates fo some of the Turkish material at Bari, Italy; PGR, Ottowa, Canada and the Germplasm Institute, Kyoto, Japan

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UNION OF SOVIET SOCIALIST REPUBLICS

N.I. Vavilov All-Union Institute of
Plant Industry (VIR)
44 Herzen Street
Lengingrad

Director: V.F. Dorofeev

Details of samples: 70000 landraces, cultivars, wild and weed species. *Aegilops biuncialis, A. columnaris, A. cylindrica, A. juvenalis, A. kotschyi, A. tauschii, A. triaristata, A. triuncialis, A. umbellulata, A. vavilovii, Triticum aestivum, T. aethiopicum, T. araraticum, T. boeoticum, T. carthlicum, T. compactum, T. dicoccoides, T. dicoccum, T. durum, T. fungicidum, T. isphahanicum, T. jakubzineri, T. karamyschevii, T. macha, T. militinae, T. monococcum, T. petropavlovskyi, T. polonicum, T. sinskajae, T. spelta, T. sphaerococcum, T. timonovum, T. timopheevii, T. turanicum, T. turgidum, T. urartu, T. vavilovii, T. zhukovskyi* and *Triticum* spp.

Geographical representation: World-wide

Evaluation and documentation: Passport data complete for 25000 accessions and computerized

Storage: Seeds with 2-8% m.c. are stored in sealed cans at -10°C for long-term storage and at 4-5°C and 30% R.H. for medium-term storage. Some duplicates at Gatersleben, GDR; Bari, Italy; NSSL, USA and of *Aegilops* spp. at Kyoto, Japan

UNITED KINGDOM

Plant Breeding Institute (PBI)
Maris Lane
Trumpington
Cambridge CB2 LQ

| | |
|---|---|
| Curator/person in charge: | G.E. Porter |
| Details of samples: | 2560 *Triticum aestivum*, 594 *T. turgidum*, 67 *T. monoccum* and 6 *T. timopheevi*. Landraces, cultivars, breeders lines and wild species |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Partial for 79 descriptors representing a wide range of agronomic, morphological, disease resistance and bread-making characters. Data computerized. Material is evaluated in conjunction with WPBS (Welsh Plant Breeding Station) and SPBS (Scottish Plant Breeding Station) |
| Storage: | Seeds with 7-8% m.c. stored in foil pouches in deep freeze cabinets at -20°C for long-term storage and in envelopes or bags at 1-2°C and 20-25% R.H. for medium-term storage |

UNITED STATES OF AMERICA

US Small Grain Collection
Beltsville Agricultural Research Center
Germplasm Resources Laboratory
Beltsville, Maryland 20705

| | |
|---|---|
| Curator/person in charge: | D.H. Smith |
| Details of samples: | 36710 *Triticum* spp. and 381 *Aegilops* spp. Landraces, cultivars and wild species |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Partial and computerized |
| Storage: | Medium-term. Duplicates at NSSL, USA for long-term storage. Beltsville is the national focal point for introduction, documentation, initial distribution and exchange of germplasm. Plant Introduction Officer - G.A. White |

UNITED STATES OF AMERICA

National Seed Storage Laboratory (NSSL)
U.S. Department of Agriculture
Colorado State University
Fort Collins, Colorodo 80523

| | |
|---|---|
| Curator/person in charge: | L.N. Bass |
| Details of samples: | 46186 *Triticum* spp. and 381 *Aegilops* spp. Landraces, cultivars, wild and weed species. Includes duplicates of US Small Grain Collection of *Triticum* spp. and *Aegilops* spp. |
| Geographical representation: | World-wide |
| Evaluation and documentation: | Passport data computerized |
| Storage: | Long-term. Seeds with 4-7% m.c. stored in permanently sealed cans at -10°C. Parts of collection duplicated at Bari, Italy and VIR, Leningrad, USSR |

UNITED STATES OF AMERICA

Wheat Germ Plasm Collection
University of California
Riverside, California 92502

| | |
|---|---|
| Curator/person in charge: | B.L. Johnson |
| Details of samples: | 3000 landraces, wild and weedy species. *Triticum boeoticum, T. urartu, T.monococcum, T. araraticum, T. timopheevi, T.dicoccoides, T. aethiopicum, T. paleocolchicum, T. carthlicum, T. dicoccum, T. durum, T. polonicum, T. turanicum, T. turgidum, T. aestivum, T. zhukovskyi, Aegilops mutica, A. caudata, A. comosa, A. uniaristata, A. squarrosa, A. bicornis, A. liguistica, A. longissima, A. sharonensis, A.speltoides, A. umbellulata, A. cylindrica, A. crassa, A. juvenalis, A. ventricosa, A. variabilis, A. kotschyi, A. triuncialis, A. columnaris, A. biuncialis, A. triaristata,* and *A. ovata* |
| Geographical representation: | Bulgaria, Greece, Italy; Afghanistan, Iran, Iraq, Israel, Lebanon, Syria, Turkey; USSR. |
| Evaluation and documentation: | Complete for seed protein content, high lysine and threonine levels and resistance to drought, aphids, nematode (*Pratylenchus thornei*), 'take-all', and *Ophiobolus* and *Fusarium* root rots |
| Storage: | Active.Duplicates at NSSL, USA; PGR, Ottawa, Canada and Regional Research Station, Gurdaspur, Punjab, India |

ANNEX

## SYNONOMY OF *TRITICUM* AND *AEGILOPS* SERIES

### TRITICUM: Tribe TRITICEAE Dumort. Subtribe TRITICINAE

| SYNONYMS | | CLASSIFIED HERE AS: |
|---|---|---|
| T. abyssinicum (Vav.) Flaksb. | = | T. turgidum (L.) Thell. subsp. turgidum convar aethiopicum Jakubz. |
| T. aegilopoides (Link) Bal. | = | T. monococcum L. subsp. boeoticum (Boiss.) MK. |
| T. aegilops P. Beauv. ex. R. et S. | = | Ae. squarrosa L. |
| T. aestivum L. em. Thell | | |
| T. aethiopicum Jakubz. | = | T. turgidum (L.) Thell. subsp. turgidum convar aethiopicum Jakubz. |
| T. araraticum Jakubz. | = | T. timopheevi Zhuk. subsp. araraticum (Jakubz.) MK. |
| T. armeniacum (Jakubz.) Mukush. | = | T. timopheevi Zhuk. |
| T. bicorne Forsk. | = | Ae. bicornis (Forsk.) Jaub. et Spach. |
| T. boeoticum Boiss. | = | T. monococcum L. subsp. boeoticum (Boiss.) MK. |
| T. carthlicum Nevski | = | T. turgidum (L.) Thell. subsp. carthlicum (Nevski) MK. |
| T. caudatum (L.) Godr. et Gren. | = | Ae. caudata L. |
| T. columnare (Zhuk.) Morris et Sears | = | Ae. columnaris Zhuk. |
| T. comosum (Sibth.et Sm.) Richt. | = | Ae. comosa Sibth. et Sm. |
| T. compactum Host. | = | T. aestivum L. em. Thell. subsp. compactum (Host.) MK. |
| T. crassum (Boiss.) Aitch. et Hansl. | = | Ae. crassa. Boiss. |
| T. cylindricum Ces. | = | Ae. cylindrica Host. |
| T. dichasians (Zhuk.) Bowden | = | Ae. caudata L. |
| T. dicoccoides (Körn ex Aschers. et Graebn.) Schweinf. | = | T. turgidum (L.) Thell. subsp. dicoccoides (Körn.) Thell. |
| T. dicoccon Schrank | = | T. turgidum (L.) Thell. subsp. dicoccon (Schrank) Thell. |
| T. dicoccum Shubl. | = | T. dicoccon Schrank |
| T. durum Desf. | = | T. turgidum (L.) Thell. subsp. turgidum convar durum (Desf.) MK. |
| T. georgicum Dek. | = | T. turgidum (L.) Thell. subsp. paleocolchicum (Men.) MK. |

ANNEX (CONT.)

T. ispahanicum Heslot = T. turgidum (L.) Thell. subsp. turgidum convar polonicum (L.) MK.

T. juvenale Thell. = Ae. juvenalis (Thell.) Eig

T. kotschyi (Boiss.) Bowden = Ae. variabilis Eig

T. longissimum(Schweinf. et Muschl. in M.) Bowden = Ae. longissima S. et M. in M.

T. lorentii (Hochst.) Zeven = Ae. lorentii Hochst.

T. macha Dek. et Men. = T. aestivum L. em. Thell. subsp. macha (Dek. et Men.) MK.

T. macrochaetum Richt. = Ae. lorentii Hochst.

T. monococcum L.

T. orientale Perc. = T. turgidum (L.) Thell. subsp. turgidum convar turanicum (Jakubz.) MK.

T. ovatum (L.) Raspail = Ae. ovata L.

T. paleocolchicum Men. = T. turgidum (L.) Thell. subsp. paleocolchicum Men.

T. peregrinum Hack. et Fraser = Ae. variabilis Eig

T. persicum Vav. = T. turgidum (L.) Thell. subsp. carthlicum Nevski

T. polonicum L. = T. turgidum (L.) Thell. subsp. turgidum convar polonicum (L.) MK.

T. pyramidale Perc. = T. turgidum (L.) Thell. subsp. turgidum convar durum Desf.

T. rodeti Trabut. = T. turgidum (L.) Thell. subsp. turgidum convar durum x Ae. ventricosa Tausch

T. sativum Aschers. = T. monococcum L. subsp. boeoticum (Boiss.) MK.

T. spelta L. = T. aestivum L. em.Thell. subsp. spelta (L.) Thell.

T. speltoides (Tausch) Gren. ex Richt.= Ae. speltoides Tausch

T. sphaerococcum Perc. = T. aestivum, L. em. Thell. subsp. sphaerococcum (Perc.) MK.

T. spontaneum Flaksb. = T. monococcum L. subsp. boeoticum (Boiss.) MK.

T. syriacum Bowden = Ae. crassa Boiss. subsp. vavilovi Zhuk.

T. tauschii (Coss.) Schmal. = Ae. squarrosa L.

T. thaoudar Reut. in Bourg. ex. Hausskn = T. monococcum L. subsp. boeoticum (Boiss.)MK

T. timopheevi Zhuk.

T. triaristatum Godr. et Gren. = Ae. triaristata Willd.

T. tripsacoides (Jaub. et Sprach) Bowden = Ae. mutica Boiss.

T. triunciale (L.) Raspail = Ae. triuncialis L.

T. turanicum Jakubz. = T. turgidum (L.) Thell. subsp. turgidum convar turanicum (Jakubz.) MK.

T. turcomanicum (Rosh.) Bowden = Ae. juvenalis (Thell.) Eig

T. turgidum (L.) Thell.

T. umbellulatum (Zhuk.) Bowden = Ae. umbellulata Zhuk.

T. uniaristatum Richt. = Ae. uniaristata Vis.

T. urartu Tuman. = T. monococcum L. subsp. boeoticum (Boiss.) MK.

T. vavilovii (Tuman.) Jakubz. = T. aestivum L. em. Thell. subsp. vavilovi (Tuman.) Sears

T. ventricosum Ces. = Ae. ventricosa Tausch

T. vulgare Host. = T. aestivum L. em.Thell. subsp. vulage (Vill.) Host.

T. zhukovskyi Men. et Er.

AEGILOPS

Ae. aucheri Boiss. = Ae. speltoides Tausch.

Ae. bicornis (Forsk.) Jaub. et Sp.

Ae. biuncialis Vis. = Ae. lorentii Hochst.

Ae. bushirica Rosh. = Ae. triuncialis L.

Ae. caudata L.

Ae. columnaris Zhuk.

Ae. comosa Sibth. et Sm.

Ae. crassa Boiss.

Ae. cylindrica Host.

Ae. heldreichii Holzm. = Ae. comosa Sibth. et Sm.

Ae. juvenalis (Thell.) Eig

Ae. kotschyi Boiss. = Ae. variabilis Eig

Ae. ligustica (Savign.) Coss. = Ae. speltoides Tausch

Ae. longissima Schweinf.et Muschl.

Ae. lorentii Hochst.

Ae. macrochaeta Shuttl. et Huet = Ae. lorentii Hochst.

Ae. mutica Boiss.

Ae. ovata L.

ANNEX (CONT.)

*Ae. peregrina* (Hack.) Maire et Weill. = *Ae. variabilis* Eig

*Ae. recta* (Zhuk.) Chenn. = 6x form of *Ae. triaristata* Willd.

*Ae. sharonensis* Eig = *Ae. longissima* Schweinf. et Muschl.

*Ae. speltoides* Tausch

*Ae. squarrosa* L.

*Ae. tauschii* (Coss.) Schmal. = *Ae. squarrosa* L.

*Ae. triaristata* Willd.

*Ae. triuncialis* L.

*Ae. turcomanica* Roshev. = *Ae. juvenalis* (Thell.) Eig

*Ae. umbellulata* Zhuk.

*Ae. uniaristata* Vis.

*Ae. variabilis* Eig

*Ae. vavilovi* (Zhuk.) Chenn.

*Ae. ventricosa* Tausch