



AEGIS:

Roles and responsibilities of Model Crop Network Working Groups

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**ECPGR Cereals Network Meeting
21-24 April 2008, Foça, Izmir, Turkey**

Content of presentation



- A. Brief overview what *Avena* WG reported on AEGIS
- B. What is expected from each Model Crop WG?
 1. Process of identifying MAAs
 2. Developing quality management system
 3. Assessing operational costs for collection maintenance
 4. Writing report for Steering Committee meeting

Findings of *Avena* Group

-based on Avena subgroup report



Preferred **model** by *Avena* Working Group:

- Decentralized system
- Share responsibilities at accession basis
- Regional and sub-regional considerations are the starting point for deciding on primary conservation responsibility
- Consider in case of duplicate accessions: country of origin of cultivar, accession or of collector of wild species or landrace (of non-European material)

Findings of *Avena Group*

-based on Avena subgroup report



Main considerations for **decentralized approach**:

1. CBD and IT recognize **national** responsibilities/patrimony
2. Conservation of **local knowledge** of crop and its uses
3. **Visibility** in national conservation context; securing local expertise for crop; maintaining awareness and recognition
4. **Access** to local/nearby conserved germplasm is easier
5. **Quality of management** depends on combination of local (growing) conditions, interest and capacity
6. Specific **peculiarities** of individual accessions, especially for regeneration and maintenance, better addressed by local curation
7. Can build on **existing elements** of conservation system
8. Buffers better against continuous political, scientific and environmental **changes**

Findings of Avena Group

Organizational structures and institutional relationships (1)



- Build on **nat. genebanks** that hold collection of crop
- Additional coordination elements are considered, i.e.:
 - **European Coordinating Lead Institution** for *Avena* GR
 - ✓ coordinate implementation annual work plans:
 - ❖ manage central crop database
 - ❖ coordinate collecting activities
 - ❖ coordinate characterization/ evaluation
 - ✓ when deciding on Lead Institution, consider:
 - ❖ experience in GR + research management
 - ❖ legal and financial status
 - ❖ location of *Avena* WG chair and CCDB manager
 - ❖ minimum expertise and facilities available

Findings of Avena Group

Organizational structures and institutional relationships (2)



- The **European Avena Collection** “system”:
 1. **Long-term conservation** of public domain AEGIS Accessions – in **base collection** (decentralized; apart from active collection; not for distribution)
 2. Germplasm **distribution**, i.e. active collection (each genebank; includes all or part base collection)
 3. **Safety duplication** (central European store, e.g. Svalbard Seed Vault?)
 4. **Working collections** (temporary; breeding, research; outside official system)
- *However, these ideas have to be integrated into the European Accessions and virtual AEGIS genebank system!*

Findings of Avena Group

Concept of MAA



- A **MAA accession** should be:
 - True to name
 - Maintained in country of origin, or
 - Introduced material of importance to breeding and research and used in Europe
 - Virus-free or of highest health status
 - Possess complete passport data (PPD)
 - Morphologically and/or molecularly characterized
- *However, the above points should match the agreed primary criteria and specific points need to be formulated as secondary criteria*

Findings of Avena Group

Concept of MAA



- Some suggestions *by Avena* WG on MAA concept:
 - Start with accessions that have clear/complete PPD, i.e. accessions originally collected by holding institute and accessions considered as national cultivars
 - Include accessions with a clear legal status, and
 - Agreed primary conservation responsibility by nat. Genebank
- *These and other suggestions have been used to establish a “generic” list of secondary criteria for adoption by the WG*

Avena

	EADB	EURISCO	Difference
ARM	0	11	-11
AUT (2)	416	306	110
AZE	0	3	-3
BEL	627	0	627
BGR	382	2308	-1926
CHE	0	1	-1
CZE	2000	1996	4
DEU	4948	4756	192
ESP	2558	1307	1251
EST	135	130	5
FRA	820	0	820
GBR (2)	2984	2709	275
GEO	0	1	-1
GRC	21	23	-2
HUN	1150	1228	-78
IRL	0	23	-23
ITA	0	630	-630
LTU	615	33	582
LVA	324	5	319
NLD	556	536	20
POL	1287	2320	-1033
PRT	41	20	21
ROM	0	201	-201
RUS	13116	11857	1259
SVK	93	994	-901
SWE (2)	722	726	-4
TUR	643	0	643
UKR (2)	377	548	-171
YUG	168	0	168
Total	33983	32672	1311



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Action: Most Appropriate Accessions (MAA)



In **summary**, Avena WG is expected to:

1. Finalize **selection criteria** for identification of MAAs (using prim. and sec. draft criteria)
2. To establish the **process** of applying criteria
3. Establish **draft list** of MAAs
4. Contact the individual National Coordinators (NCs) with proposed MAAs for given country
5. Agree on **final MAA list** and inform NCs

Action: Genebank quality management system



In addition to previous presentation the following specific tasks are identified for the WG are:

1. Make inputs into development of **generic management standards** (**Secretariat; WG; individuals**)
2. Develop crop specific **technical standards** (**WG**)
 - a) Suggested process is that each genebank writes down its **current procedures** (i.e. genebank manual) (**curators**)
 - b) This is a good basis for WG to develop **standards** and a good **feedback mechanism** aimed at improving quality!
 - c) Consider use of a "**common framework**" (i.e. collection form – **Bioversity**) **→** standardization across crops!

Action: Operational Costs for Collection Maintenance (1)



Objective: Assessment of **operational costs** for collection management before and after AEGIS in order to be able to measure rationalization impact of AEGIS

An expert will assist Secretariat to:

1. Develop **methodological** framework (draft to be discussed at **meeting in Poland**)
2. Develop a **technical guide** for data collection and work with model crop curators to refine methodology
3. Secretariat to oversee **data collection** by curators
4. Provide a **framework for collation of datasets** by crop and genebank
5. Conduct data analysis and provide **summary report**

Action: Operational Costs for Collection Maintenance (2)



Expected action:

1. **3 curators** and **database manager** to participate in model crops meeting in Radzikow, 1st week July (details: next slide)
2. Contribute to development of methodology (**WG/selected curators**)
3. Participate in data collection (**curators**)
4. Comment of analysis and final report (**WG**)

Action: Meeting of model crops curators and CCDB managers

Timing: 1st week of July in Radzikow, Poland

Action: Plan to participate

Objectives:

1. Info sharing
2. Discussion on progress and constraints with implementation (i.e. criteria to select and list of MAAs; services to be provided;
3. Discussion on QMS and technical standards
4. Discussion on cost assessment approach

Summary action list



1. Participate in meeting in Poland, 1st week July
2. Preparation of report (mid July 2008!), including:
 - a. Final list of selection (secondary) criteria for MAAs
 - b. (Draft) list of proposed/agreed MAAs
 - c. Suggestions for generic and technical standards for QMS
 - d. Assessment of capacity and availability of expertise, infrastructure, etc. for conservation of Collection
 - e. Recommendations on how to involve all relevant stakeholders in management of European Avena Collection
 - f. Proposed plan on how to structure the management of this Avena Collection, incl. possible Lead Institute
 - g. Prepare/coordinate implementation of Crop Conservation Workplans

A faint, stylized background illustration of a globe with a spiral and various icons. The globe is light gray and features a central spiral. Overlaid on the globe are several icons: a laptop, a smartphone, a tablet, and a person holding a device. The text "Thank you" is centered over the globe.

■ Thank you

Concept of Most Appropriate Accession (MAA) - 1



Primary criteria:

- A. fully **discriminative**, i.e. accepted accessions will need to comply with all requirements below;
 - B. these criteria are **not crop-specific**
-
1. Accessions in **public domain** (i.e. Annex I material that is in the MLS and non-Annex I material designated to AEGIS by governments or any other holder)
 2. **Genetically unique** (i.e. genetically distinct accessions; assessment based on available data and/or on the recorded history of the accession)

Concept of Most Appropriate Accession (MAA) - 2



3. **Agronomic** (incl. research material) **and/or historically/culturally** important
4. **Plant Genetic Resources**, incl. medicinal and ornamental spp., and CWR (i.e. **excluding forest genetic resources, non-plant agrobiodiversity** species, etc.)
5. **European origin or introduced germplasm** that is of **actual or potential** (breeding/research) **importance** to Europe

Concept of Most Appropriate Accession (MAA) - 2



Secondary criteria:

- A. **not** fully discriminative
- B. might be **crop-specific**;
- C. used when deciding **which accession to accept** among two or more “quasi duplicate” or similar accessions;
- D. WGs to decide if any of these considerations has **prevalence** over the others, or that the selection should be the result of a **combination of two or more** secondary criteria

Concept of Most Appropriate Accession (MAA) - 3



1. Maintained in “country of origin”
2. A known origin (collected and/or bred; pedigree data!?)
3. Comprehensiveness of passport information
4. Number of regeneration/multiplication cycles (Do we know?)
5. Health status (i.e. is the germplasm disease free?)
6. Existence of morphological/molecular characterization data

Concept of Most Appropriate Accession (MAA) - 4



7. Existence of (agronomical) **evaluation data**
8. **Validated accession name** (particularly relevant for perennial clonal crops where the same name can be attributed to different accessions; history of individual accessions is important; special attention to be paid to synonyms and homonyms)
9. **Others?**

APPLICATION OF CRITERIA WILL LARGELY DEPEND ON AVAILABILITY OF GOOD INFORMATION.