

# General progress on the European Forage Collection (EFC) and results from the questionnaire

Petter Marum

Graminor AS



# Beitostølen-Norway 1997 (WG)



# No. Of Accession in EURISCO in Selected Genera

Genera	No. accessions 1/11 2015	No accessions 10/3 2017	Change
Phleum	7289	7349	60
Lolium	14225	14627	402
Festuca	15104	15571	467
Dactylis	13814	13964	150
Poa	7717	7749	32
Bromus	1239	1254	15
Agrostis	1678	1912	234

# No. Of Accession in EURISCO in Selected Genera

Genera	No. accessions 1/11 2015	No accessions 10/3 2017	Change
Phalaris	553	609	56
Arrhenatherum	564	567	3
Alopecurus	869	870	1
Trifolium	27180	27635	455
Medicago	14232	16139	1907
Lotus	2587	2594	7
SUM	107051	110840	3789

# No. Of Accession in EURISCO I

		No acc. 1/11 2015	No acc 7/3 2017	Diff
Albania		81	81	
Armenia		266	266	
Austria	X	305	305	
Azerbaijan		462	467	5
Belgium	X	244	244	
Bosnia & Herzogovina		92	92	
Bulgaria	X	2828	2830	2
Croatia		137	169	32
Cypros		60	60	
Czech Rep.	X	3754	3925	171
Estonia	X	180	161	-19
France	X	513	2674	2161

# No. of Accession in EURISCO II

Country		No acc. 1/11 2015	No acc 7/3 2017	Diff
Germany	X	13796	13844	48
Greece		785	785	
Hungary		3941	3973	32
Ireland	X	712	717	5
Israel		548	605	57
Italy		5783	5783	
Latvia	X	559	582	23
Lithuania	X	840	841	1
Macedonia		129	129	
Montenegro		0	22	22
Netherlands		1032	1032	
Nordic countries	X	4415	4428	13



# No. of Accession in EURISCO III

Country		No acc. 1/11 2015	No acc 7/3 2017	Diff
Poland	X	18317	18701	384
Portugal		703	703	
Romania		1994	2142	148
Russian Federation		17438	17455	17
Slovakia		856	859	3
Slovenia		245	245	
Spain	X	6762	6764	2
Switzerland	X	313	313	
Ukraine		2526	2528	2
UK	X	16435	17115	680

# AEGIS accessions 1/11 2015 and 7/3 2017

Country	Total in EURISCO (Impotent genera)	AEGIS accessions 1/11 2015	AEGIS accessions 7/3 2017	Change
Germany	13844	2203	2207	4
Nordic countries	4428	1303	1303	0
Czech Rep.	3925	236	291	55
Estonia	161	0	53	53
Netherlands	1032	851	851	0
UK	17115	2431	0*	-2431
<b>SUM</b>		<b>7024</b>	<b>4705</b>	<b>-2319</b>



# Status AEGIS Accessions 7/3 2017

Genera	No of AEGIS accessions 1/11 2015	No.of AEGIS accessions 7/3 2017
Phleum	328	323
Festuca	1882	1526
Dactylis	623	410
Lolium	1726	614
Poa	1154	1132
Bromus	13	12
Phalaris	30	19
Agrostis	51	52
Arrhenatherum	19	19
Alopecurus	7	7
Trifolium	1145	545
Medicago	26	36
Lotus	20	10
<b><u>SUM</u></b>	<b>7024</b>	<b>4705</b>

# Preparation to the Workshop

- Sent request for opinions about why so few accessions are flagged for inclusion in the European forage collection (AEGIS) on 26 January
  - members of the ECPGR forages Working Group
  - National Coordinators.
- A friendly reminder (15 February)
- Sent 6 extra reminders on 6 March

# Response to questionnaire I

- 15 answers representing 19 countries

# Results of questionnaire II

	Factor	Impact No. Of Yes	Importance 1= most important	No. Of 1	
1	Lack of funding for regeneration	11	1,9	9	1
2	Lack of funding for germination testing	7	3,4	4	4
3	Not implemented a system for duplicate storage	4	3,5	3	6,7
4	Uncertainty about funding during the coming years (can not assure long-term conservation)	6	2,1	5	2,3
5	The institute leaders do not want to prioritize the process to select AEGIS accessions (other tasks are considered more important)	6	2,1	4	2,6

# Results of questionnaire II

	Factor	Impact No. Of Yes	Importance 1= most important	No. Of 1	
6	The strict rule for unflagging accessions make me hesitate to flag accessions	6	2,6	2	4,3
7	The instructions about how to select and flag AEGIS accessions are unclear	1	4,2	1	8,7
8	The process for flagging AEGIS accessions is complicated	4	2,9	2	6,3
9	There are too many criteria to define an AEGIS candidate	5	2,7	1	6,3
1 0	My country is not a Member of AEGIS				

# Some comments to 1

- Few dedicated staff and limited budget
- Part of the collection have too low germination levels or have too few seeds and therefore need regeneration
- Forages are cross-pollinating species, so the regeneration process is expensive and requires space or technical isolation
- Lack of funding for support staff is the main problem.
- Many potential candidates have low germination rate. High priority has not been assigned to regeneration so far.

# Comments to 2

- Part of the collection lack germination test or have too old germination tests
- Costs for germination testing are small in comparison to regeneration



# Comments to 3

- Lack of multilateral agreements on reciprocal safety duplication storage

# Comments to 4

- The lack of certainty of funding for the future does not allow for long-term efforts for the protection of plant genetic resources
- There is no funding yet. We do not want to give false guarantees!
- The biggest problem is indeed the long term funding and the prioritization of genetic resources work.

# Comments to 5

- The prioritization process is supported, but often postponed due to other urgent duties.

# Additional Comments I

- **Belgium:** I will send a list of accessions that could be flagged to the NC since I am not able to add the information to the database myself.
- **Switzerland:** We have recently created a core collection in the national gene bank for some species. These accessions of the core collection shall later this year then also be flagged for AEGIS.

# Additional Comments II

- **Nordgen:** The process of selecting and flagging is cumbersome and not something that you want to go through often.
- **Lithuania:** This year we are going to flag all our cultivars of grasses (forages) which are included in the EU common catalogue of varieties of agricultural plants.
- **France:** The work is done, but we are not a member of AEGIS yet.

# Additional Comments III

- **UK:** The Institute is not an Associate Member of AEGIS. As such, although I have identified our AEGIS candidates I cannot strictly flag them.







# Suggested selection criteria for AEGIS candidate forage accessions

- Below we list the selection criteria that the management group of the ECPGR project “Forages 2020” suggests for the selection of candidates for the European forage collection (AEGIS).
- The criteria are in agreement with the criteria described in the “**Revised simplified procedure for the selection and flagging of accessions for the European Collection**” and are adapted from (but not identical to) the criteria used by NordGen for selection of candidates.

# The accessions should be:

- Under the management and control of the Associate Member/country
  - 34 countries
- Plant genetic resource for food and agriculture or medicinal and ornamental species
- Included in EURISCO

- Genetically unique within AEGIS and have a European origin or introduced germplasm
  - MOS

- Viable

- Germination above the minimum standard used by the gene bank

- Duplicated
  - Seed are safety duplicated at another genebank and/or in the Svalbard Global Seed Vault according to the criteria specified in B.

- Accessible
  - Seed are available for distribution according to the AEGIS guidelines
- Article 4.8.4 of the Genebank Standards endorsed by the FAO Commission on Genetic Resources for Food and Agriculture states: *“For most species a sample of a minimum of 30-50 viable seeds should be supplied for accessions with sufficient seeds in stock. For accessions with too little seed at the time of request and in the absence of a suitable alternative accession, samples should be supplied after regeneration/multiplication, based on a renewed request. For some species and some research uses, smaller numbers of seeds should be an acceptable distribution sample size.”* It



- Assured long term conservation
  - Accepted for long term conservation (ACC) by the Associate Member

- Minimum documentation
  - Known species
  - Accession name assigned
  - Known biological status of accession (SAMPSTAT)

## – Known origin

- Origin country
- If wild or semi-wild: minimum collection data includes at least one of the following
  - Latitude and longitude
  - region (higher and/or lower admin level and/or location)
- Cultivar
  - Known breeder and/or known donor
- Landrace, at least one of the following
  - Latitude and longitude
  - region (higher and/or lower admin level and/or location)
- Breeding material
  - Known donor

- We see the process of selecting accessions for the European collection as a continuous process.
- Through the daily work at the gene bank, new accessions will reach the minimum criteria specified above, for example because work has been conducted to increase knowledge on seed status, regeneration has increased seed amount or germination or new accessions have been included in the collection.





- Aegis accessions flagged in EURISCO are expected to only be un-flagged specific cases
  - Will this result in that the collection holders is too cautious to flag an accession?
  - We don't know what the future will bring!
    - Funding

- Monitor the composition of the European Crop Collection (including the existence of possible gaps....)
  - What is a reasonable number of AEGIS accessions for each species and country.



- Flagging of varieties that still have breeder protection and/or are on the National Variety Lists?