

EUROPEAN COOPERATION ON FORAGE GENETIC RESOURCES

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ABSTRACT

European cooperation on forage genetic resources is coordinated within the framework of ECP/GR. Today 20 specific European forage databases are maintained by different institutions. The databases hold passport data and, to some extent, characterisation data for a total of 43993 accessions maintained in collections throughout Europe. A European Core Collection has been established in *Lolium perenne* and is currently under evaluation at 19 sites.

KEYWORDS

Forages, data bases, genetic resources, ECP/GR, core collections

INTRODUCTION

The European Cooperative Programme for Crop Genetic Resources Networks (ECP/GR) is a collaborative programme among most European countries aimed at ensuring the long-term conservation and facilitating the increased utilisation of plant genetic resources in Europe. The Programme, which is entirely financed entirely by participating countries and is coordinated by IPGRI, operates through crop-specific working groups in which curators and breeders work together to analyse the needs and set priorities for the crop concerned. Working group members and other scientists from participating countries carry out an agreed workplan with their own resources as input in kind to the Programme. The Forages Working Group is one such working group.

The Forages Working Group met for the first time in 1981. Today the following countries participate in the Group: Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Lithuania, Nordic Gene Bank (Iceland, Norway, Denmark, Sweden, Finland, two members), Poland, Portugal, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. The last meeting of the working group was held in Hissar, Bulgaria in 1995. The report from the meeting is available from IPGRI, via delle Sette Chiese 142, 00145 Rome, Italy. The next meeting will be held in the spring 1997 in Norway.

ACTIVITY

European Forage Databases. A Central element in the Forages Working Group is the European Forage Databases, managed by one of the participating institutes. The databases hold passport data and some characterisation data. There are today currently 20 different forage databases (Table 1). These databases have the dual role of providing users with information on the germplasm maintained in Europe, and provide the working group with a tool allowing them to take make informed decisions and give provide recommendations regarding the management of national collections. The Forage Databases are currently in the process of being updated and extended by adding new accessions data from collections not previously included. Special emphasis is placed on the completion of passport data. An important task for the Working Group is the rationalisation and safety duplication of the national collections. A certain degree of duplication exists in and between the national collections. A long term goal is to rationalise the collections by searching for duplicates. Our first priority is, however, to identify unduplicated accessions so that each country can take responsibility for safety duplication of this material. Work is under way to develop a protocol and a computer program to facilitate this search. Searching for duplicated material

is a secondary priority. The databases are distributed in different ways, as written documents, diskettes, or on the internet. Further information can be obtained from the institutions managing the databases. While these central databases provide a first entry point into the very comprehensive collections held in Europe, users are then guided towards the individual genebanks holding material of interest to them and the full information associated with the sample. See Table 1.

Core Collections. Another important task is the promotion of utilisation of genetic resources through the establishment and evaluation of European Core Collections. The group has created a European Core Collection in *Lolium perenne*. The formation of this Core Collection was recommended by the group in 1991. Since then, participating countries have identified sub-sets of wild material representing their indigenous diversity. A total of 162 accessions were multiplied. The Core Collection has been under evaluation since 1995 at 19 locations representing 16 countries. This region wide evaluation is expected to provide a valuable assessment of the traits that can be found in the different national collections. The *Lolium perenne* Core Collection is the first one within the ECP/GR to come to reach the evaluation stage. More information about this Core Collection are given on a separate poster at this congress (Sackville-Hamilton *et al.*, 1997).

Other activities. Other activities include the planing of joint research or collecting projects. Members of the group collaborated on a joint proposal to the EU programme on Conservation, Characterisation, Collection and Utilisation of Genetic Resources in Agriculture (EC No. 1467/94). Our first proposal was however rejected. We will try again at later calls for proposals.

In 1991 the group identified a the need to standardise the protocol for isozyme analyses of ryegrass. A subcommittee carried out the work. The group set up standards for gels and buffers, standards for naming bands, and identified 30 reference clones. (Hayward *et al.*, 1995).

Other ongoing or planned collaboration projects are, Comparison of *in situ* and *ex situ* conservation, Description of Nordic timothy varieties and local populations stored in the Nordic Gene Bank, Ecogeography of *Trifolium* species in Turkey, and Regeneration methodology.

Standard Varieties. Most genebanks and users of genetic resources usually use improved varieties in their evaluations for comparison purposes. In order to allow comparison of evaluation data over countries and over years, the working group has established three common lists of standards. One list for southern Europe one for Central Europe and one for northern Europe. These lists are published in the report from of the Working group meeting in 1995. (T. Gass *et al.*, 1995)

REFERENCES

Gass, T., T. R. Sackville-Hamilton, K. Kolshus and E. Frison (eds). 1995. ECP/GR, Report of a Working Group on Forages, 31/3-2/4 1995, Hissar, Bulgaria.

Hayward, M.D., M.D., G.H. Degenars, F. Balfourier and F. Eickmeyer. 1995. Isozyme procedures for the characterisation of germplasm, exemplified by the collection of *Lolium perenne* L. Genetic Resources and Crop Evolution. **42**: 327-337.

Table 1
European forage databases

Genus/species	Institute	No. of Accessions
Agropyron	Institute for Plant Genetic Resources, Sadovo 4122 district near Plovdiv, Bulgaria	1
Agrostis	Nordic Gene Bank, Box 41, S-230 53 Alnarp, Sweden	1
Arrhenatherum elatius/Trisetum flavescens	OSEVA PRO, Grassland Research Station, 756 54 Zubri, Czech Republic	81
Bromus	Institute of Argrobotany, 2766 Tápiószele, Hungary	430
Dactylis	IHAR, Jedzdziecka 5, 85687 Bydgoszcz, Poland	6010
Festuca	IHAR, Jedzdziecka 5, 85687 Bydgoszcz, Poland	4350
Lolium	IGER, Plas Gogerdan, Abersystwyth, Dyfed SY23 3EB, UK	4416
Annual Medicago	SIDT, Apartado 22, 06080 Badajoz, Spain	1246
Perennial Medicago	INRA-GEVES, La Miniere, F-7828 Guyancourt, France	1917 2700 ²
Phalaris	Nordic Gene Bank, Box 41, S-230 53 Alnarp, Sweden	59
Phleum	Nordic Gene Bank, Box 41, S-230 53 Alnarp, Sweden	3602
Poa	PK Malchow, D-23999 Malchow/Poel, Germany	1170
Trifolium alexandrinum/T. resupinatum	Faculty of Agr., The Hebrew University of Jerusalem, PO Box 12, Rehovot 76100, Israel	240
Trifolium pratense	Institute of Argrobotany, 2766 Tápiószele, Hungary	1895
Trifolium repens	IGER, Plas Gogerdan, Abersystwyth, Dyfed SY23 3EB, UK	562
Trifolium subterraneum	SIDT, Apartado 22, 06080 Badajoz, Spain	2447
Lathyrus latifolus, L. tuberosus, L. heterophyllus, L. sylvestris, L. sativus, L. cicera	LEM, IBEAS, Avenue de l'Université, F-64000 Pau, France	3627
Vicia	Germplasm Institute, 70126 Bari, Italy	5525
Other Viciae	University of Southamton, Basset Crescent East, Southampton SO16 7PX, UK	3716
Other perennial forage legumes	Institute of Argrobotany, 2766 Tápiószele, Hungary	1

¹ Under development

² Accessions in the Vavilov Institute not yet in the database