

The European Information Infrastructure as a tool for the implementation of the ITPGRFA

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First Meeting of the Scientific Advisory Committee on the Global Information System of Article 17 of the Treaty
24-25 November 2016, Rome, Italy

International obligations/recommendations

CBD (1992) – Article 17: Facilitate the exchange of information... relevant to the conservation and sustainable use of biological diversity

GPA I (1996) & II (2011) – Articles 17 & 15: Constructing and strengthening comprehensive information systems for PGRFA

Treaty (2001) – Article 17: Contracting Parties shall cooperate to develop and strengthen a global information system to facilitate exchange of information...related to PGRFA

Aims of a European Information Infrastructure on PGRFA (in line with Art. 17 and other obligations)

Facilitate the use (and management) of PGRFA by providing updated online information at the accession level about:

- What is conserved
- Where it is conserved
- How it is conserved
- Accessible under what terms



EU-funded project EPGRIS (2000-2003)



Prepared within the framework of the ECPGR Documentation Network

Objectives:

- ☐ Support the creation of National PGR inventories

- ☐ To establish a European Internet Search Catalogue:
 - with passport information of Plant Genetic Resources (PGR) maintained *ex situ* in Europe
 - which is frequently updated
 - publicly accessible via Internet

Key elements

- Creation of National Inventories / National Focal Points
- Agreement on data exchange standard: EURISCO descriptors based on FAO/IPGRI MCPD
- Creation of central catalogue and mechanism for upload
- Training of National Focal Points by Documentation experts

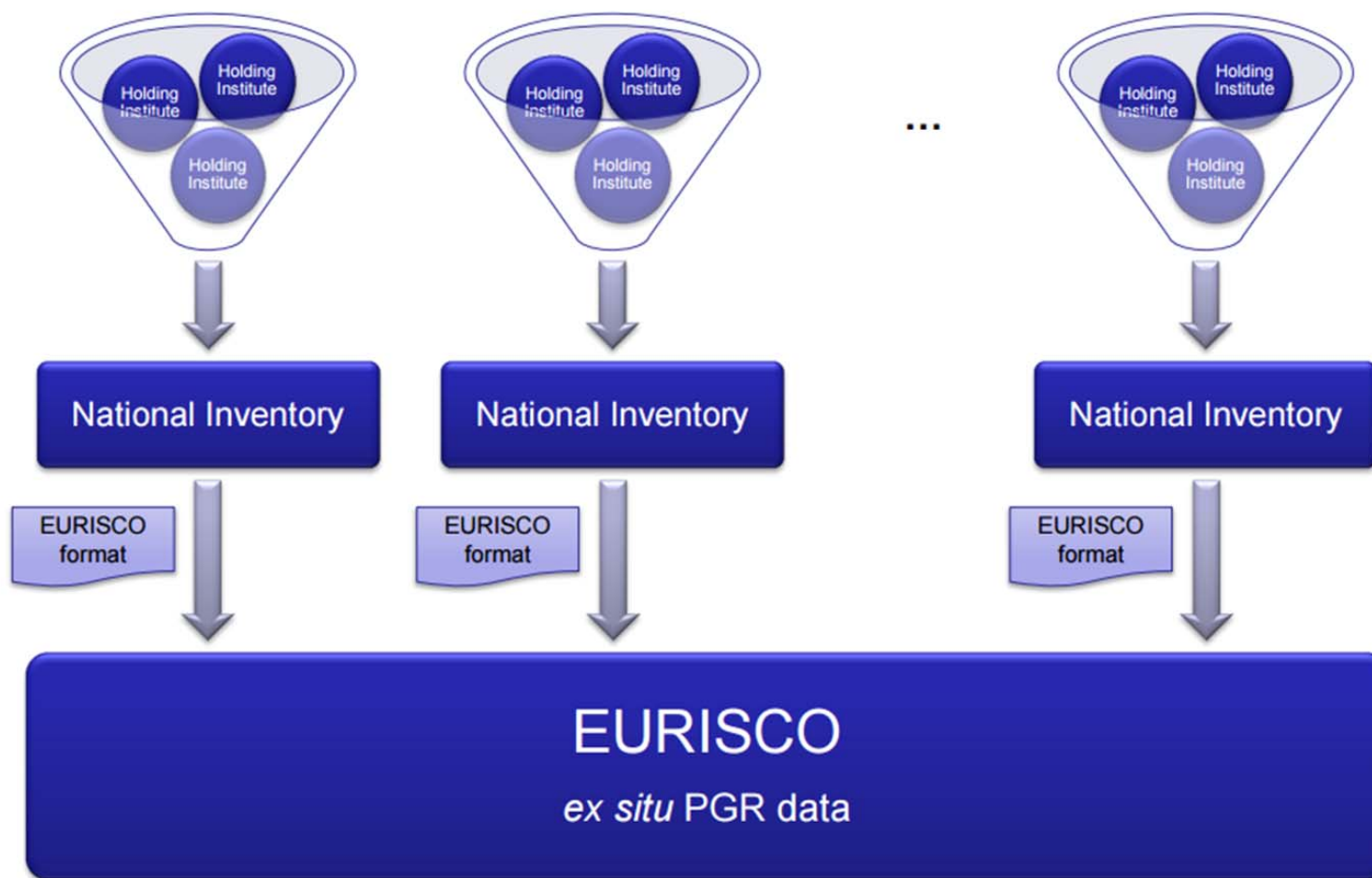


Development of a European Information System for PGRFA

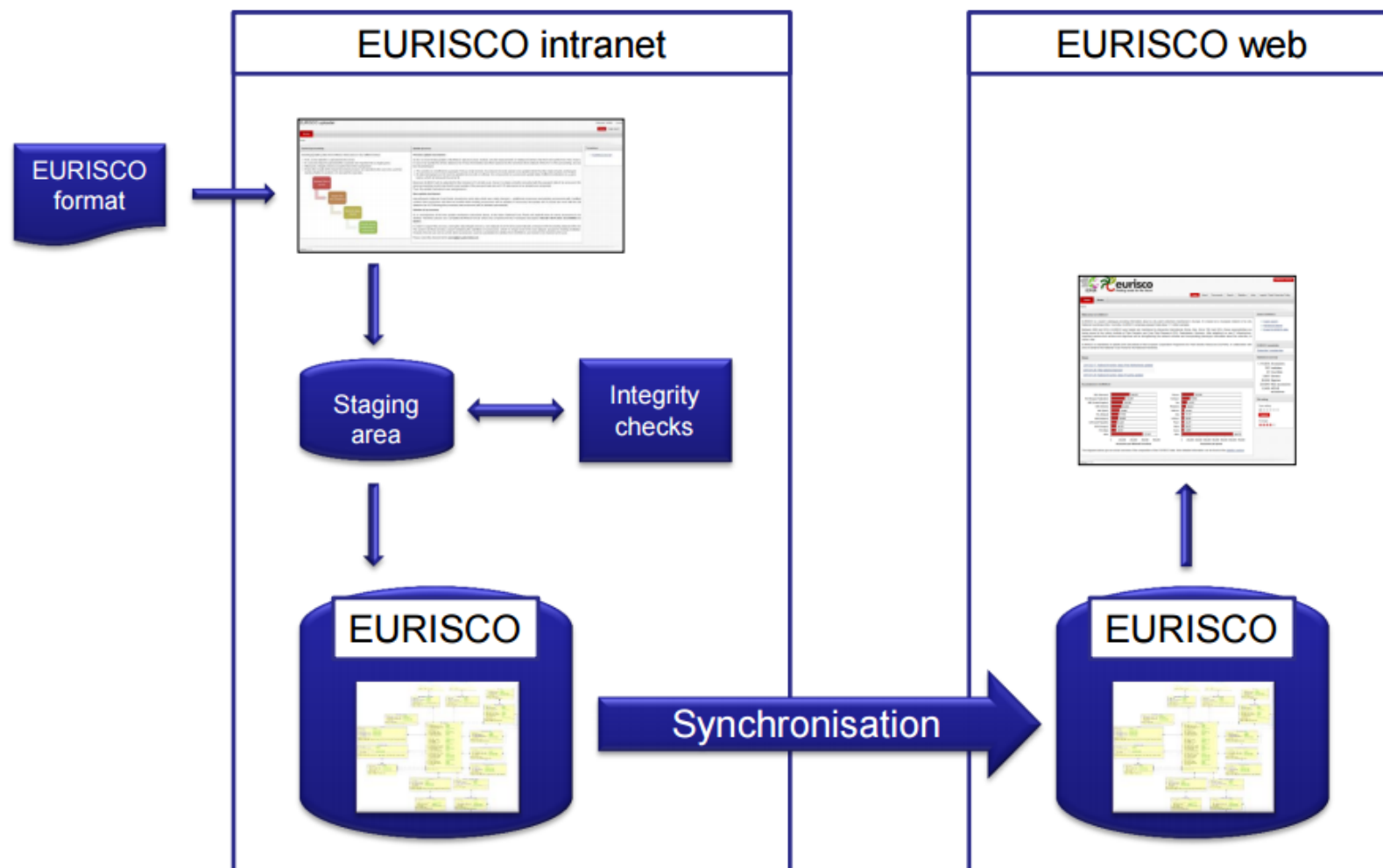
- EURISCO: Search catalogue for *ex situ* collections; available online since 2003 (maintained at Bioversity International on behalf of ECPGR)
- 43 National Collections providing data through National Focal Points (Data Sharing Agreement)
- 2014: Transfer of catalogue maintenance to IPK Gatersleben, still on behalf of ECPGR

<http://eurisco.ecpgr.org>

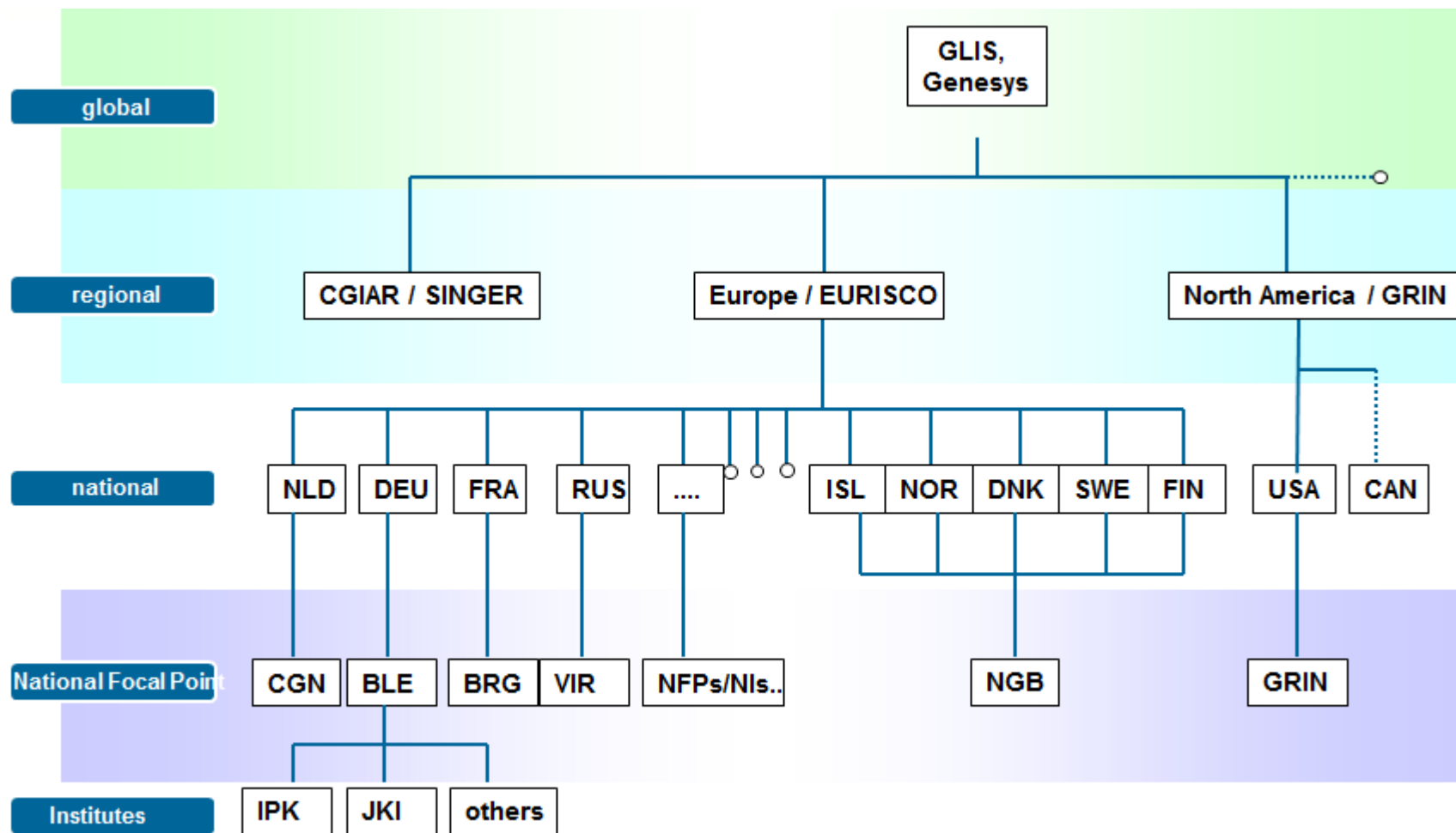
Data flow



EURISCO architecture



Global Information Infrastructure



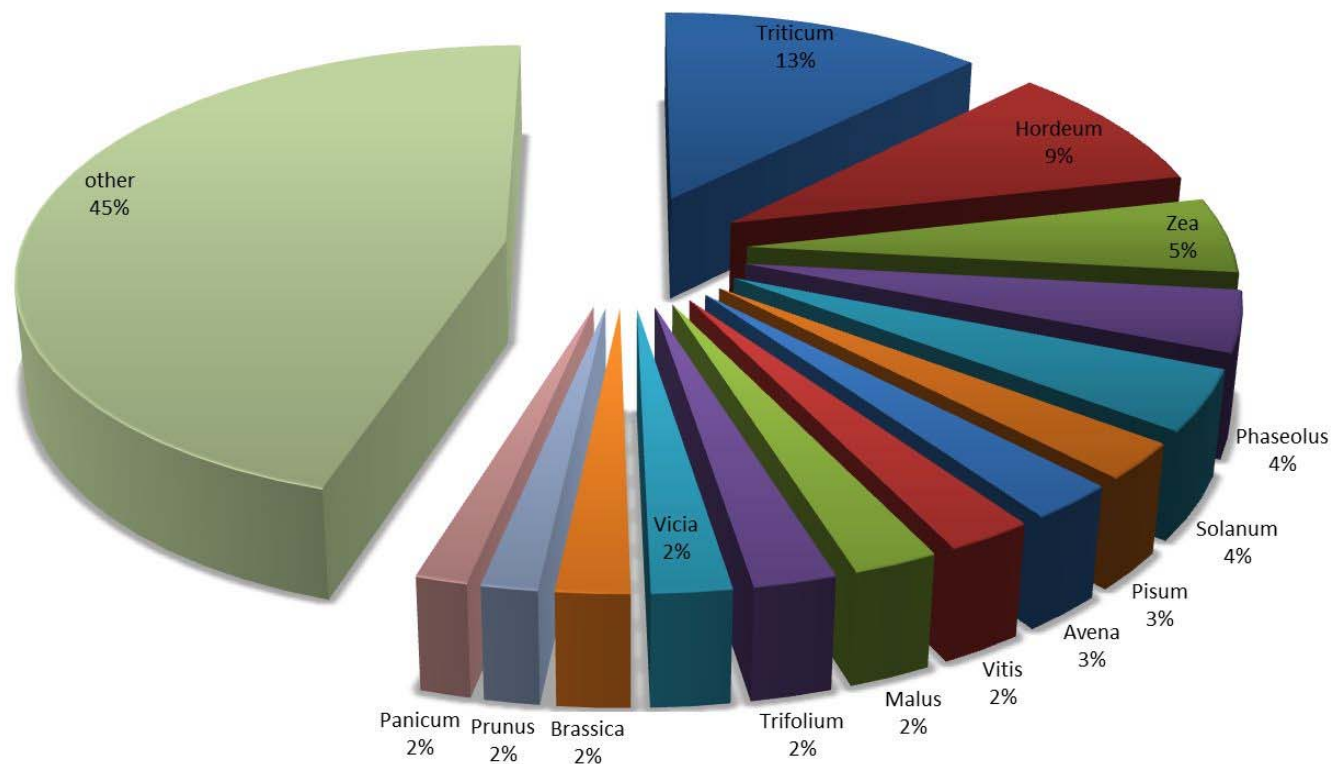
Content of EURISCO

@21.11.2016

- 1 842 438 Accessions
- 378 Institutes
- 43 Countries
- 6 233 Genera
- 41 651 Species names
- 389 152 MLS accessions
- 28 901 AEGIS accessions

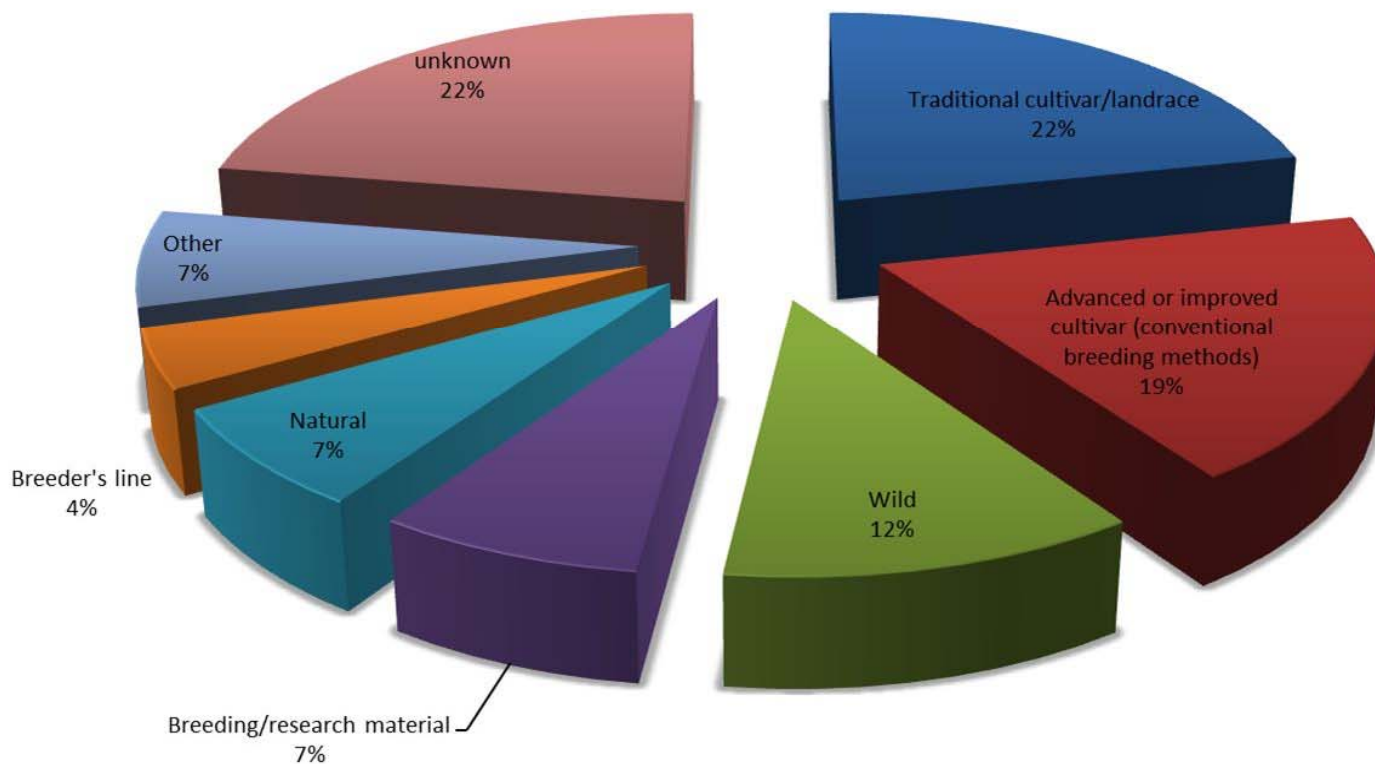
Accessions per genus

Accessions per genus



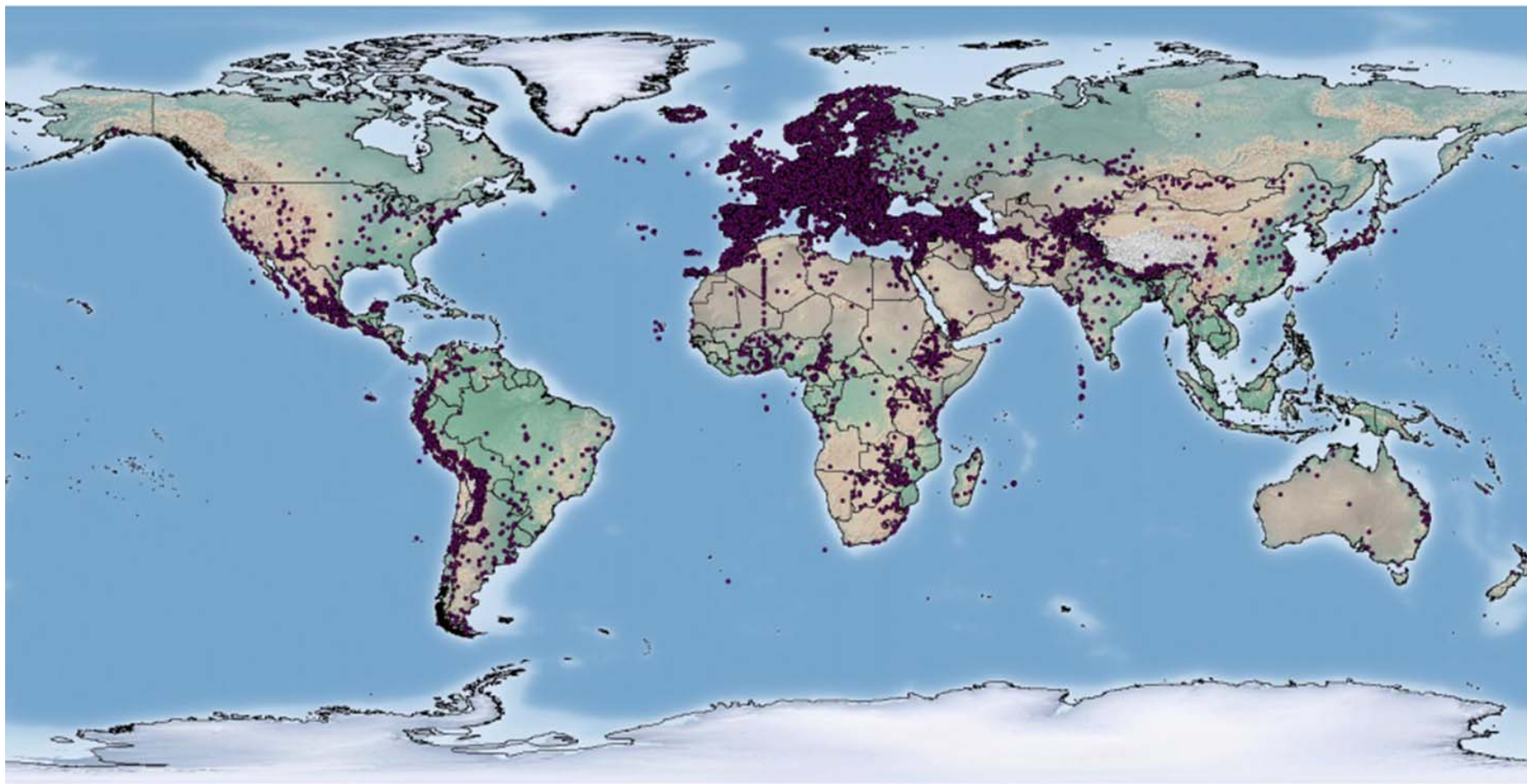
Accessions per 'sample status'

Accessions



Regions of origin

As of 2016-02-10



Search form

Search form interface showing four standard searches: Taxonomy, Accession, Status, and Site.

Taxonomy Search:

- Genus:
- Species:
- Species Authority:
- Buttons: Search, Reset

Accession Search:

- Accession Number:
- Crop Name:
- Origin Country:
- Holding Institute Code:
- Holding Institute Name:
- Accession Name:
- Buttons: Search, Reset

Status Search:

Site Search:

Origin Country Dropdown List:

- %
- Afghanistan
- Albania
- Algeria
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas

Four standard searches

- Taxonomy
- Accession
- Biological status
- Collecting site

Accession details

eurisco
ECP-GR

Home | Search | Accession | Collection | Taxonomy | Acquisition | Inventory | Reporting | Administration | Help

Advanced search | Export data for spreadsheets | Export data for National Inventory

Home > Search > Accession details

Search: DEU146

View: All | National inventory | Holding institute | Accession | Acquisition | Reporting | Collection | Other | Metadata | Other

National inventory

National Inventory Code: DEU
National Inventory: Germany

Holding institute

Institute Code: DEU146
Institute Name: Genebank, Leibniz Institute of Plant Genetics and Crop Plant Research

Accession

Accession Number: TRI 10454
Accession Names: White Kandahar (land race)
Country Of Origin: Afghanistan
MLS Status: part of the MLS
AEGIS Status: not part of the AEGIS

Taxonomy

Genus: Triticum
Species: sp.

Acquisition/storage

Acquisition Date: 1973
Acquisition Source: Other
Germplasm Storage: Long term

Collection

Collecting Number: 81
Collecting Date: 1973
Collecting Latitude: 31.433333
Collecting Longitude: 64.3
Collecting Elevation: 960
Collecting Site: Chah-e Anar

Map

Name: Anar

Map showing the location of the collection site (Chah-e Anar) in Afghanistan, near the border with Pakistan.

Donor

Donor Accession Number: 26272
Description: F&O Southwest, Italy

Other

Accession URL: http://trn.ick.genebank.org/trn_accession/Triticeae/10454
Other Numbers: DEU146 IN 2627

National inventory

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Search for MLS accession

 eurisco
Finding seeds for the future

Home About Search C&E data Statistics and documents Imprint / Data Protection Policy

Search Advanced search Export data by species Export data by National Inventory

Home > Search > Advanced search

Advanced search

The advanced search allows to freely combine all fields related to taxonomy, accession, status and site, respectively. Moreover, the advanced search enables to perform multiple selection of up to five search terms per field.

Taxonomy

Genus

Species

Species Authority

Accession

Origin Country

Holding Institute Code

Holding Institute Name

Crop Name

Accession Name

Status

Biological Status

Acquisition Source

Storage Type

Acquisition Date From Acquisition Date To

Select date Select date

MLS Status AEGIS Status

All statuses All statuses

Site

Latitude From Latitude To

Longitude From Longitude To

Elevation From Elevation To

Collecting Date From Collecting Date To

Select date Select date

Search Reset

release 1.2.3

Accession

Origin Country

✕ ITALY (ITA)

MLS Status

Yes

Search for MLS accession

National Inventory	No Of Accessions
Albania	62
Austria	60
Belgium	33
Croatia	2
Czech Republic	628
Estonia	1
France	8
Germany	5420
Italy	6349
Netherlands	138
Nordic Countries	36
Poland	334
Romania	3
Slovakia	135
Spain	115
Switzerland	263
United Kingdom	1373

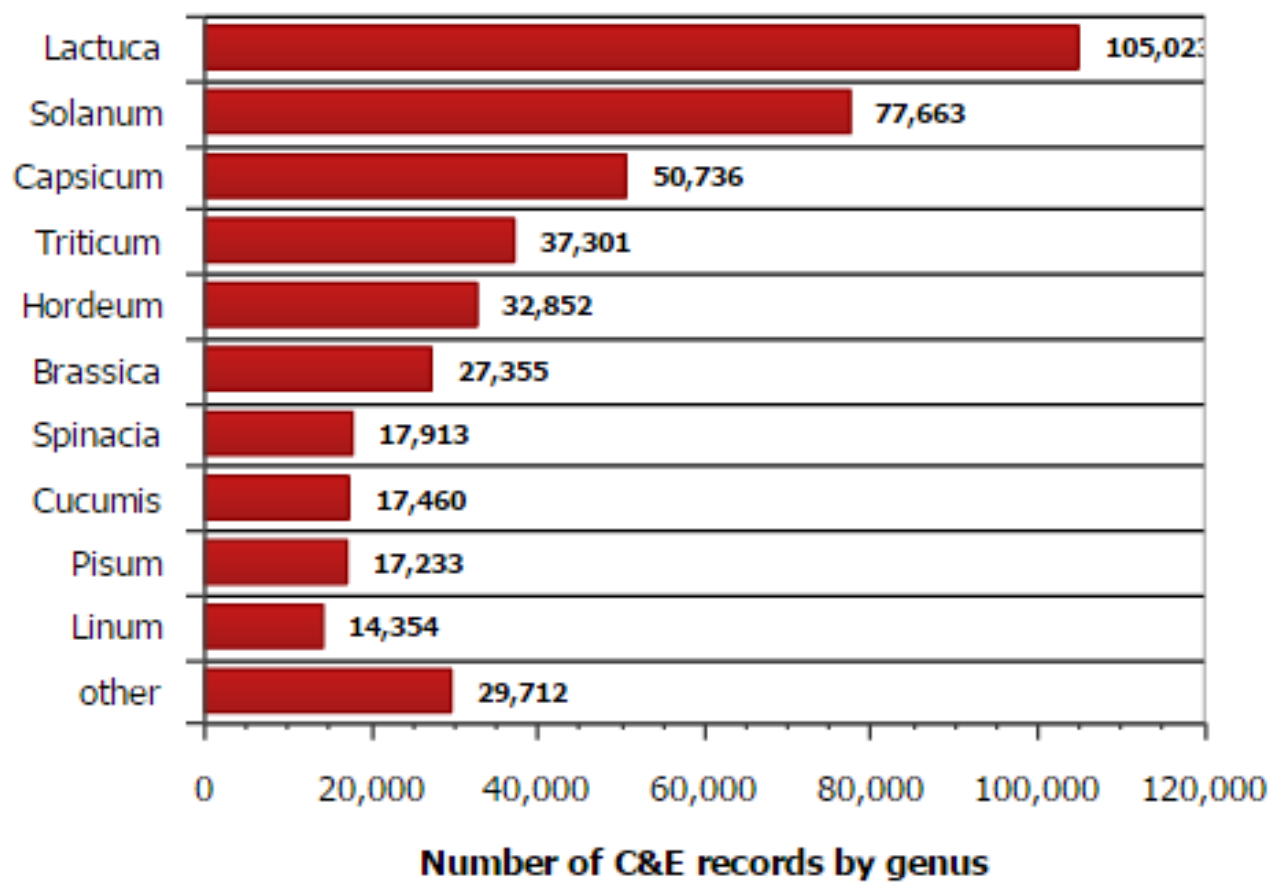
14 960 MLS
accessions
of Italian origin
registered in 20
European National
inventories

New feature: Phenotypic data

Non standardized data:

- Taxon
- Trait
- Experiment
- Score

Number of C&E records by genus



Ex.: Search by species and trait: virus resistance in pepper

Filter C&E data by species and traits

Genus *

Capsicum ▼

Species *

Capsicum baccatum L.
Capsicum baccatum var. praetermissum Heiser & P. G. Sm.
Capsicum cardenasii Heiser & P. G. Sm.
Capsicum chacoense Hunz.
Capsicum chinense Jacq.
Capsicum eximium Hunz.
Capsicum frutescens L.
Capsicum frutescens x chinense
Capsicum galapagoense Hunz.
Capsicum pubescens Ruiz & Pav.

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Capsicum annuum L.

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Traits *

Fruit corrugation (1=Smooth, 2=Semi-wrinkled[...])
Fruit cracking tendency ((1=none, 3=slight, 5=medi[...])
Fruit length (Measure base of calyx to [...])
Fruit outerwall thickness (Measurement, 9=9mm or mor[...])
Fruit pungency (Bruinsma Wonder=3 (0=not [...])
Fruit ribbing ((0=absent, 1=very little,[...])
Fruit section shape ((1=very round, 3=round, 5[...])
Fruit setting ability (Number of fruits, Bruinsm[...])
Fruit shape (1=Elongate, 2=Almost roun[...])
Fruit shape (Bruinsma Wonder=5 (1=very[...])

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Tobacco mosaic virus (Symbol assigned to TMV re[...])
Tobacco mosaic virus (determined at natural inf[...])
Tomato Spotted Wilt Virus (1 = resistant, 2 = partia[...])

↑
↑
↓
↓

Apply

Reset

Ex.: Search by species and trait: virus resistance in pepper

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Experiment Description	Trait Name	Trait Method	NICODE	INSTCODE	Species	ACCENUMB	Score	Score Link	Origin Country	Biological Status	Details
multiplication capsicum, [...]	Tobacco mosaic	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN23570	L3-seg	-	Nicaragua	Traditional cultivar/landrace	Accession details
multiplication		Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN23299	L2-seg	-	-	Wild	Accession details
Resistance		Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22778	L2	-	Costa Rica	-	Accession details
Resistance test for mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22772	L2	-	Guatemala	Wild	Accession details
Resistance genes (alleles[...])	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN20492	L2	-	-	-	Accession details
Resistance test for Mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22774	L2	-	Guatemala	Wild	Accession details
Resistance test for Mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22777	L2	-	Costa Rica	Wild	Accession details
Resistance test for Mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22776	L2	-	Costa Rica	Traditional cultivar/landrace	Accession details
Resistance test for Mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22773	L2	-	Guatemala	Wild	Accession details
Resistance test for Mosaic	Tobacco mosaic virus	Symbol assigned to TMV re[...]	NLD	NLD037	Capsicum annuum L.	CGN22780	L2	-	United States	-	Accession details

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CGN23570	L3-seg	-	Nicaragua	Traditional cultivar/landrace	Accession details
CGN23299	L2-seg	-	-	Wild	Accession details
CGN22778	L2	-	Costa Rica	-	Accession details

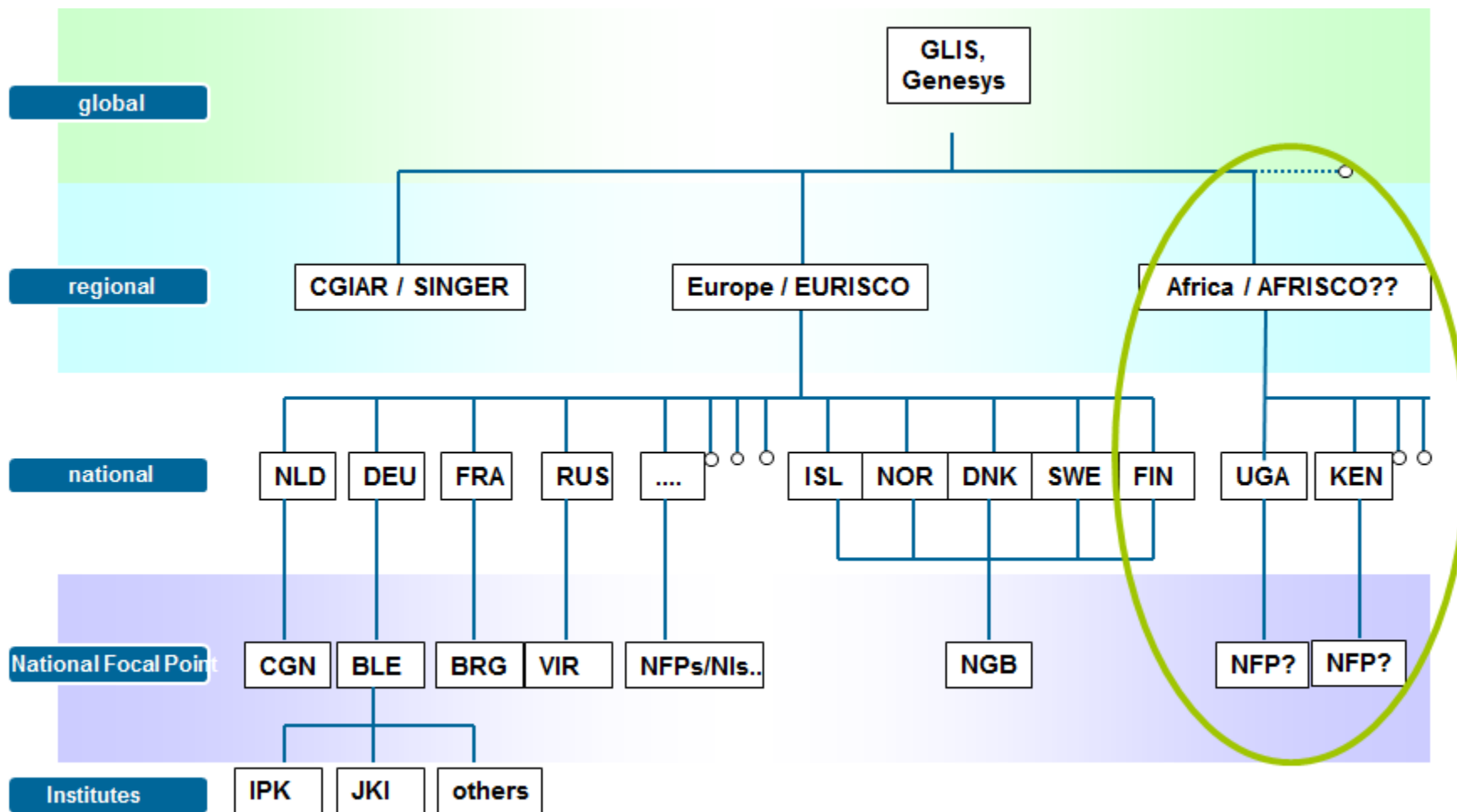
Planned improvements

- Increase coverage of data (e.g.: France, Italy and Russia can include more data; data from private industry are welcome)
- Improvement of data quality (precision of geographic location; taxonomy inconsistencies; coverage of descriptors)
- Adoption of updated MCPD, including PUID
- Open to wide inclusion of phenotypic data
- Inclusion of *in situ* data (genetic reserves)
- No –omics data planned, but link via PUID to external databases

Challenges

- Need for strong commitment by member countries, gathering data for National Inventories
 - Training workshops and networking commitment ensured by ECPGR (one workshop per year)
- Cost of maintenance and coordination of the Network
 - Currently provided by ECPGR (ca. € 90 000 per annum)

Example for other regions?



Conclusions

- EURISCO and European National Inventories: example of successful regional documentation infrastructure, contributing to implementation of Art 17
- Main asset is the networking activity behind the catalogue, which is providing capacity building, advice and harmonization across the European genebank information systems.
- ECPGR and the European documentation centres are traditionally open to share their expertise to promote the development of other regions

Thank you
for your attention!

