

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

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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

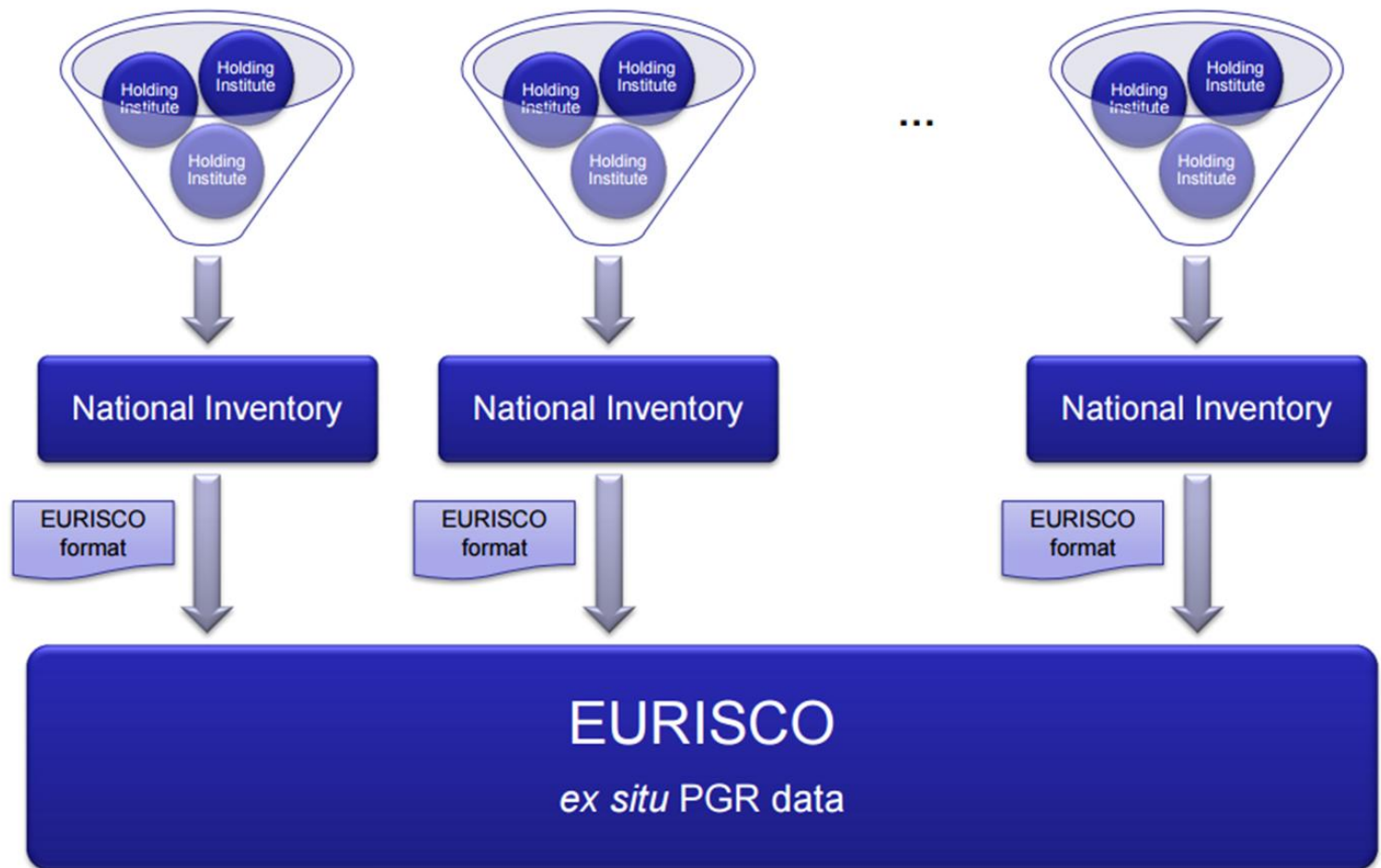
- Creation of National Inventories / National Focal Points
- Agreement on data exchange standard: EURISCO descriptors based on FAO/IPGRI MCPD
- Creation of central catalogue and mechanism for upload
- Training of National Focal Points by Documentation experts

Development of a European Information System for PGRFA

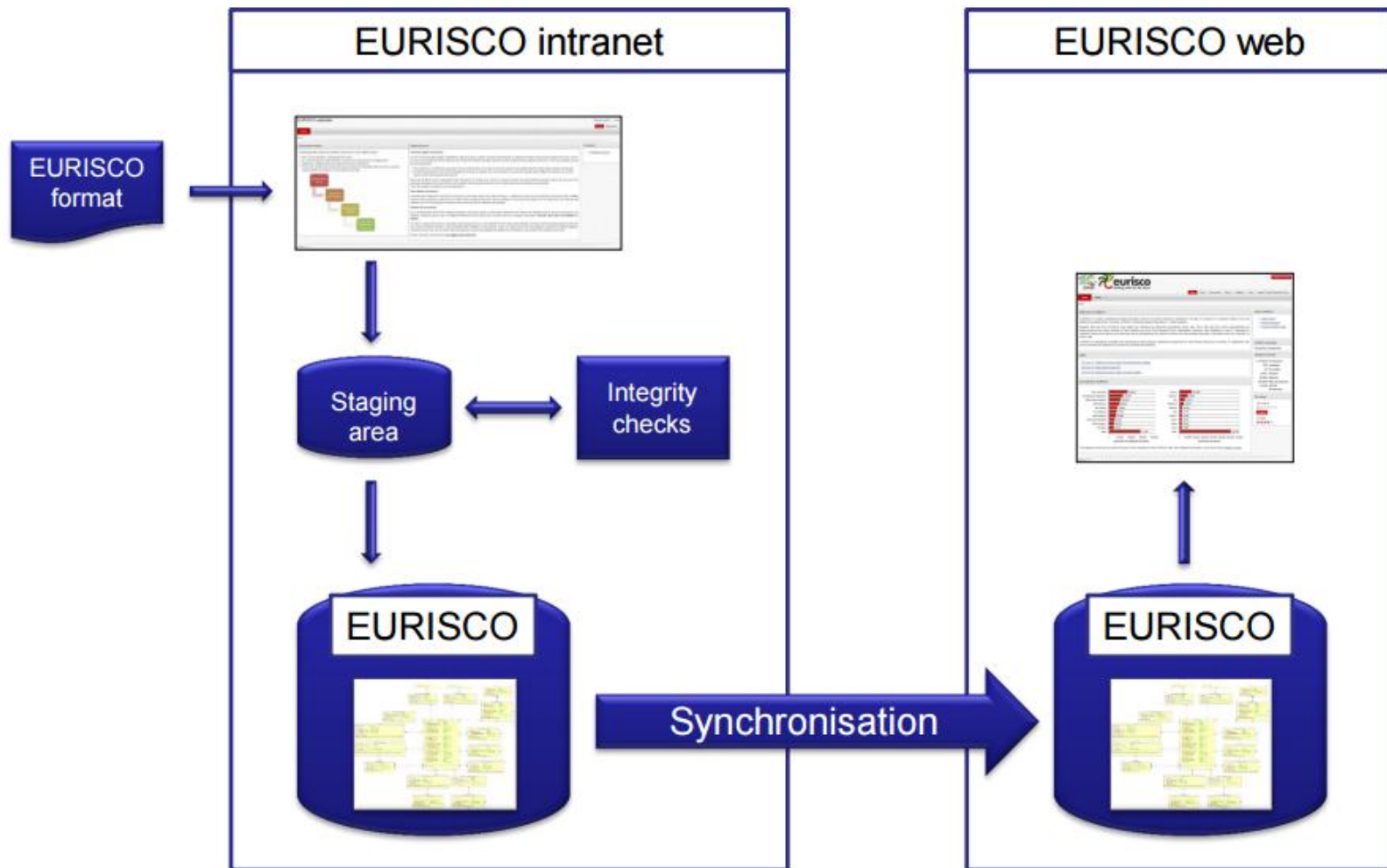
- EURISCO: Search catalogue for *ex situ* collections; available online since 2003 (maintained at Bioversity International on behalf of ECPGR)
- 43 National Collections providing data through National Focal Points (Data Sharing Agreement)
- 2014: Transfer of catalogue maintenance to IPK Gatersleben,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

<http://eurisco.ecpgr.org>

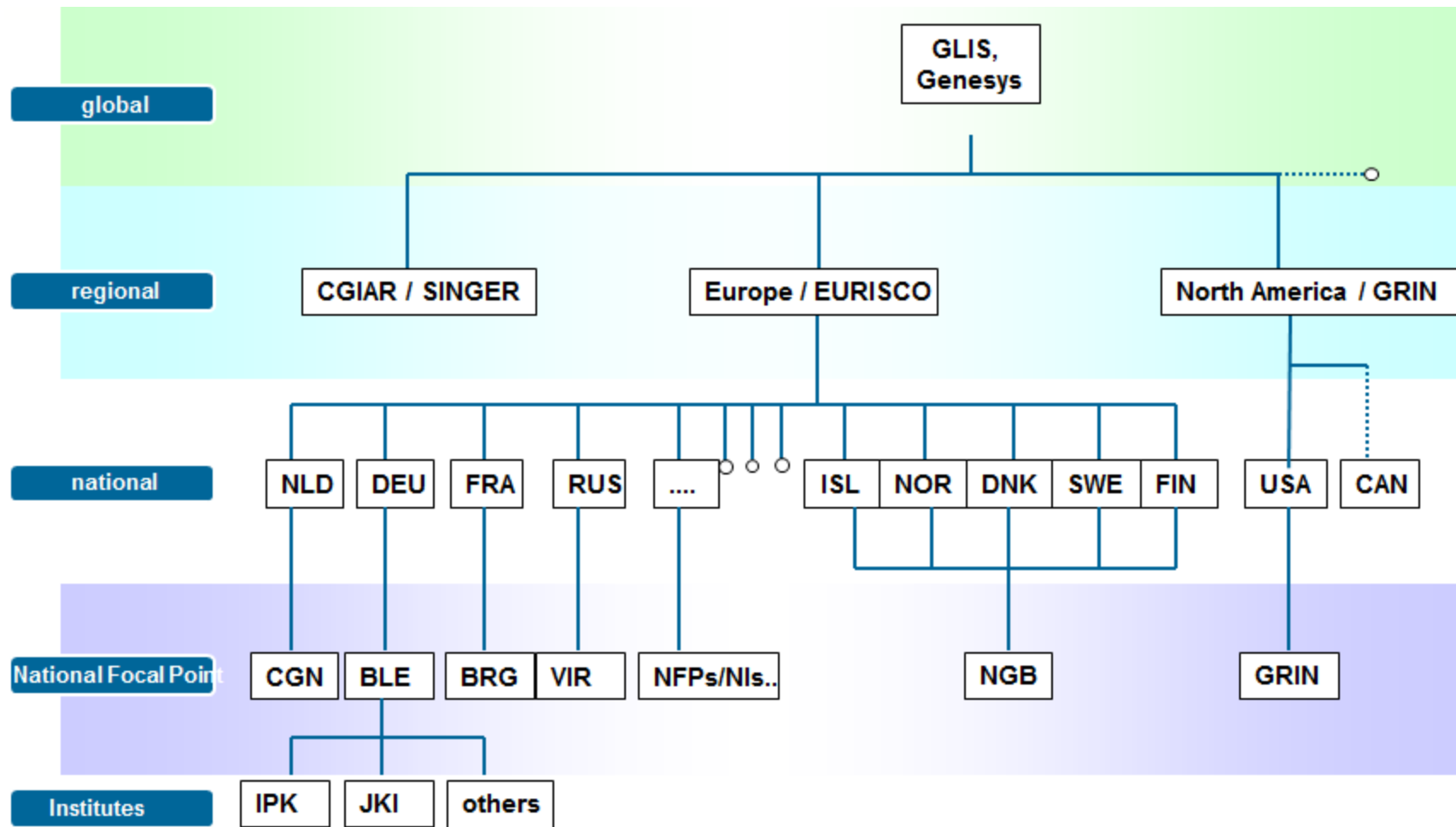
Data flow



EURISCO architecture



Global Information Infrastructure



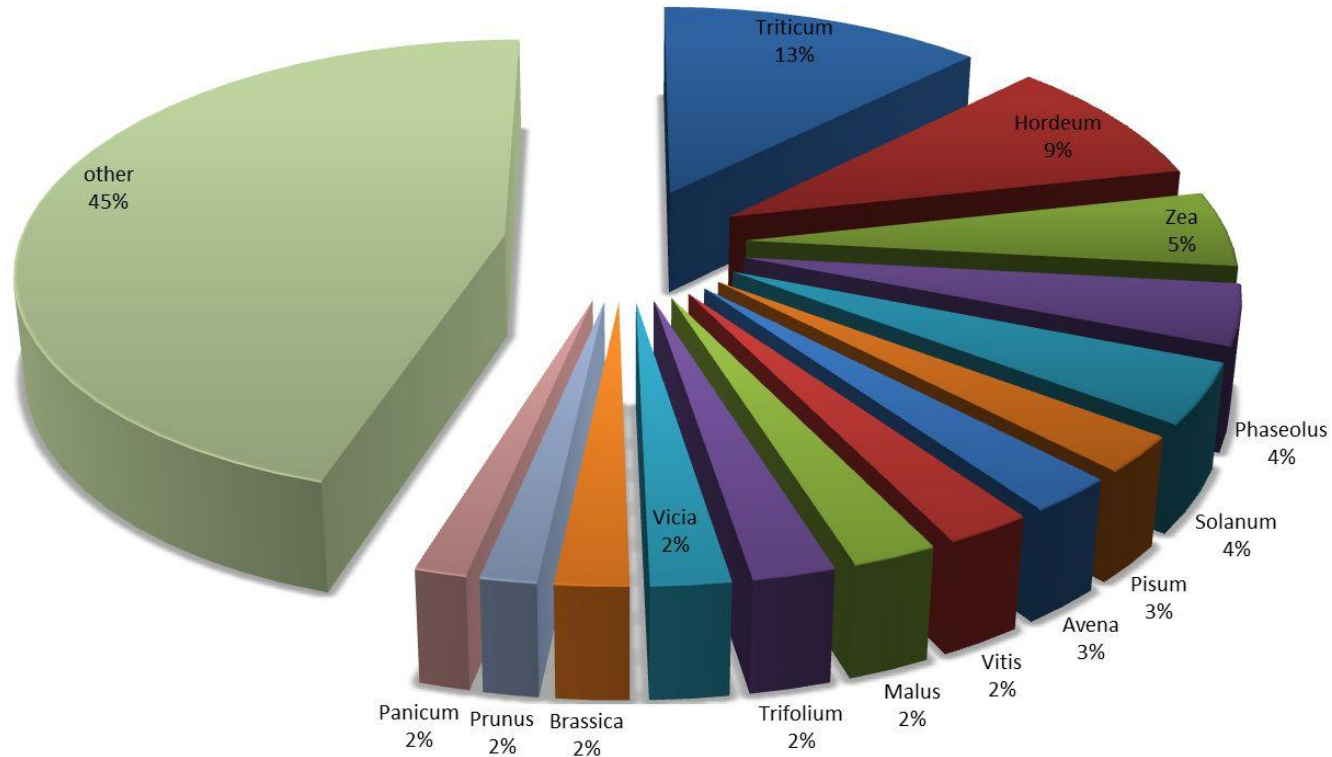
Content of EURISCO

@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

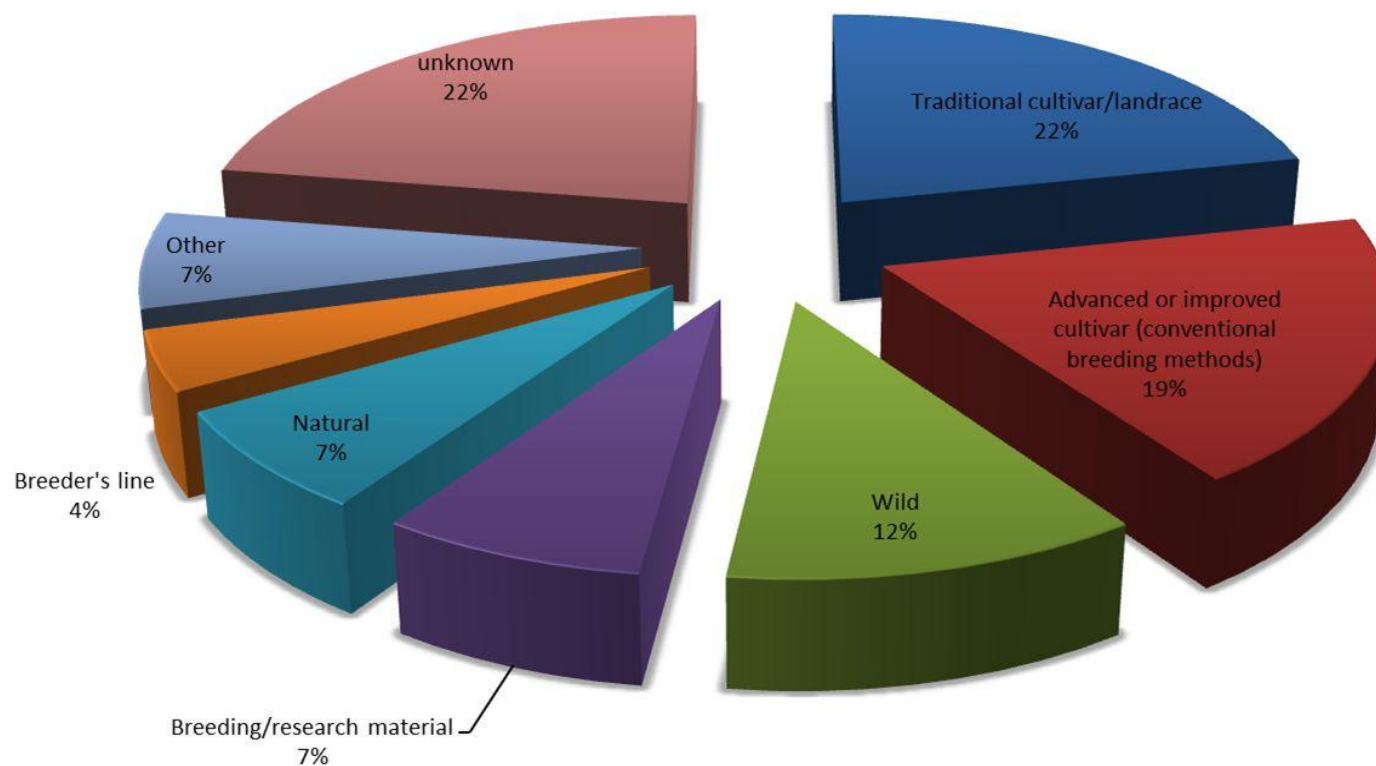
Accessions per genus

Accessions per genus



Accessions per 'sample status'

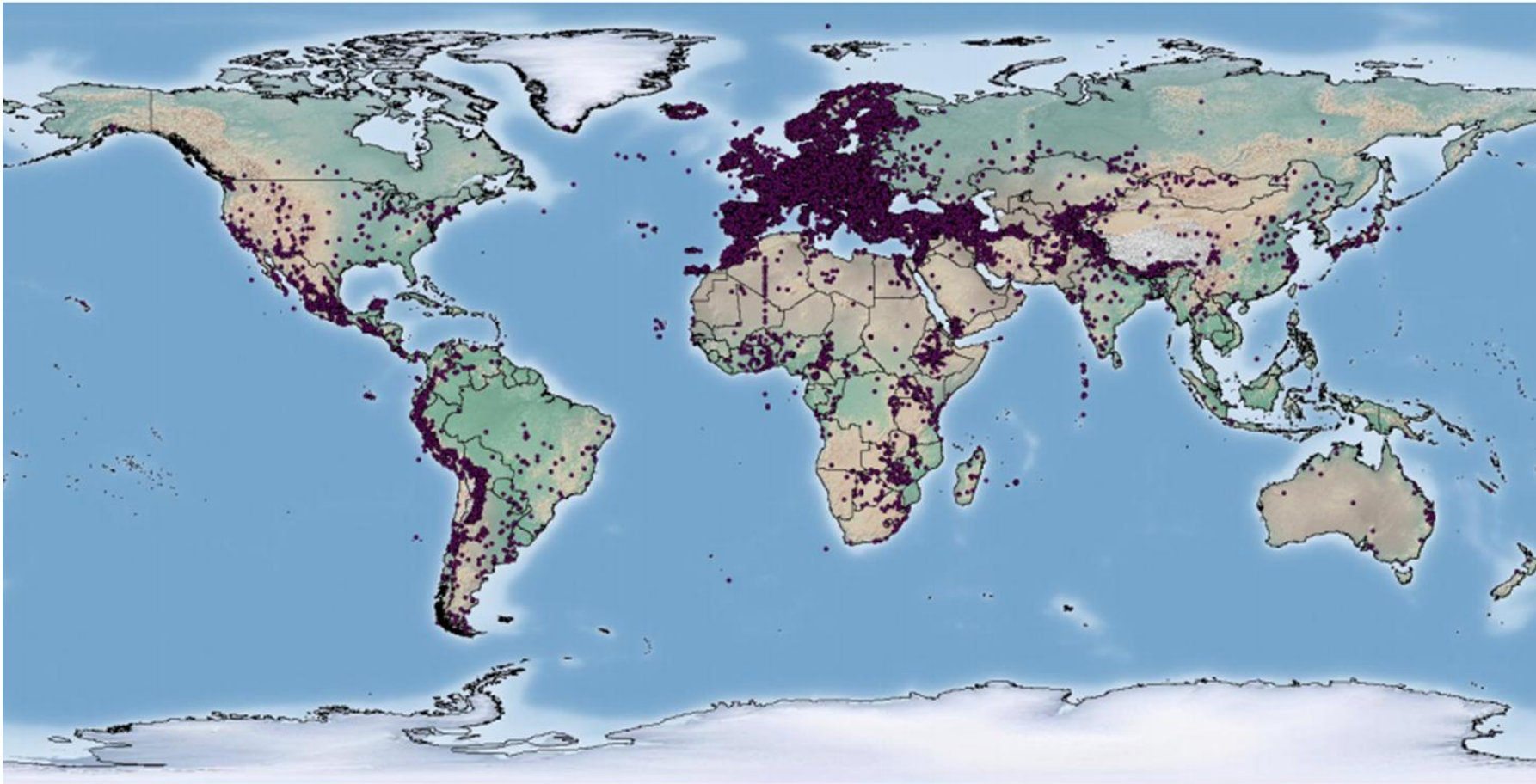
Accessions





Regions of origin

As of 2016-02-10



Search form

Show All
Taxonomy
Accession
Status
Site

Taxonomy

Genus
Species
Species Authority

Accession

Accession Number
Crop Name
Origin Country

Holding Institute Code
Holding Institute Name
Accession Name

Status

Site

%
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

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Finding seeds for the future

Home | About | Search | ECP-GR | Statistics and documents | Register / User Profile / Public

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

Home > Search > Plantgenet

View All | National inventory | Holding institute | Accession | Taxonomy | Acquisition/storage | Collection | Other | 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 83
Collecting Date 1973
Collecting Latitude 31.433333
Collecting Longitude 64.3
Collecting Elevation 900
Collecting Site Chahgah


Map
Name Search
Map showing the location of the collection site in Afghanistan.

Donor
Donor Accession Number 20272
Description F&O Southwest, Italy

Other
Accession URL <http://plants.ick.gaters.edu/englin/index.php?Accession=10454>
Other Numbers DEU146.W 2427

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

Search for MLS accession

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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
MLS Status
AEGIS Status

Site

Latitude From
Latitude To
Longitude From
Longitude To
Elevation From
Elevation To
Collecting Date From
Collecting Date To

Search Reset

Accession

Origin Country

✕ ITALY (ITA)

MLS Status

Yes

Search for MLS accession

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

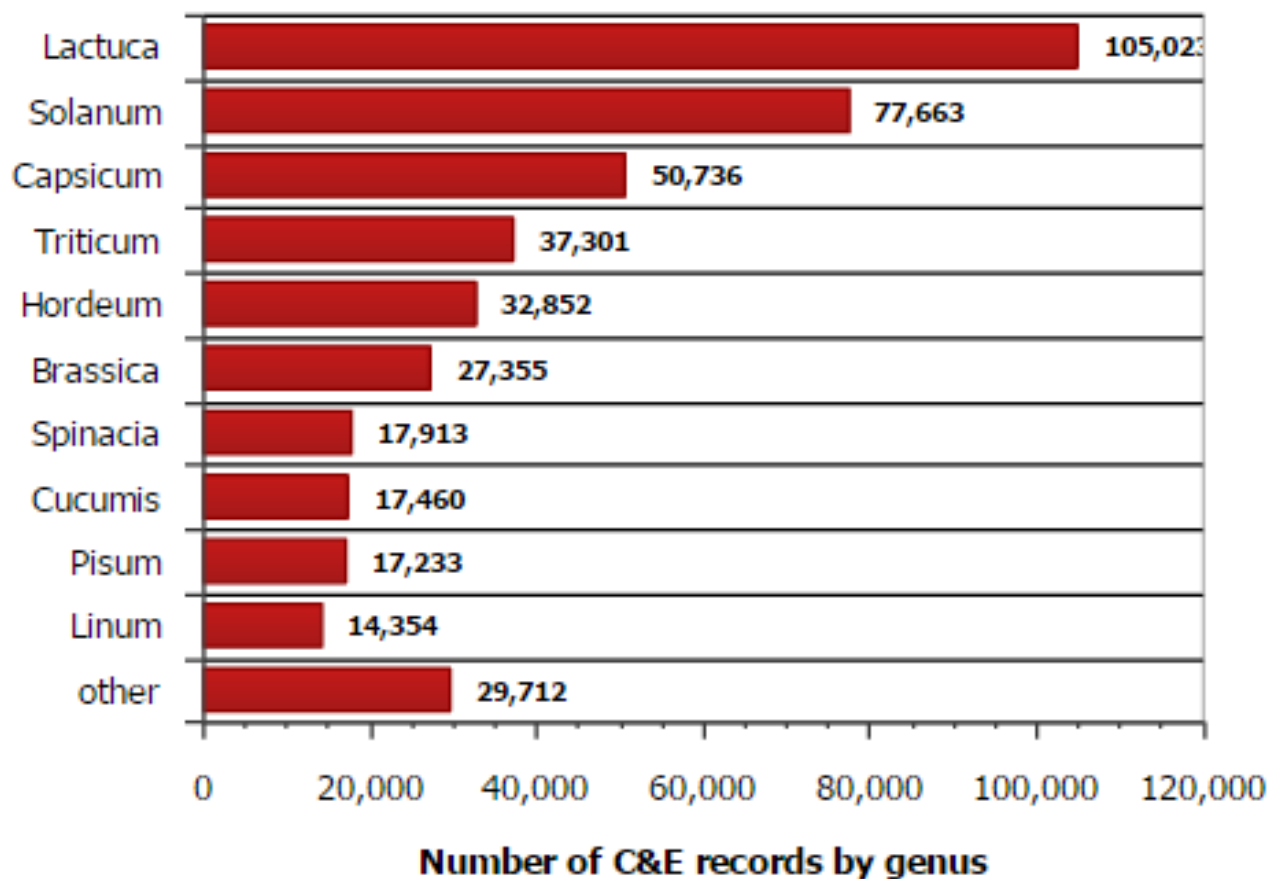
14 960 MLS
accessions
of Italian origin
registered in 20
European National
inventories

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[...])

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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

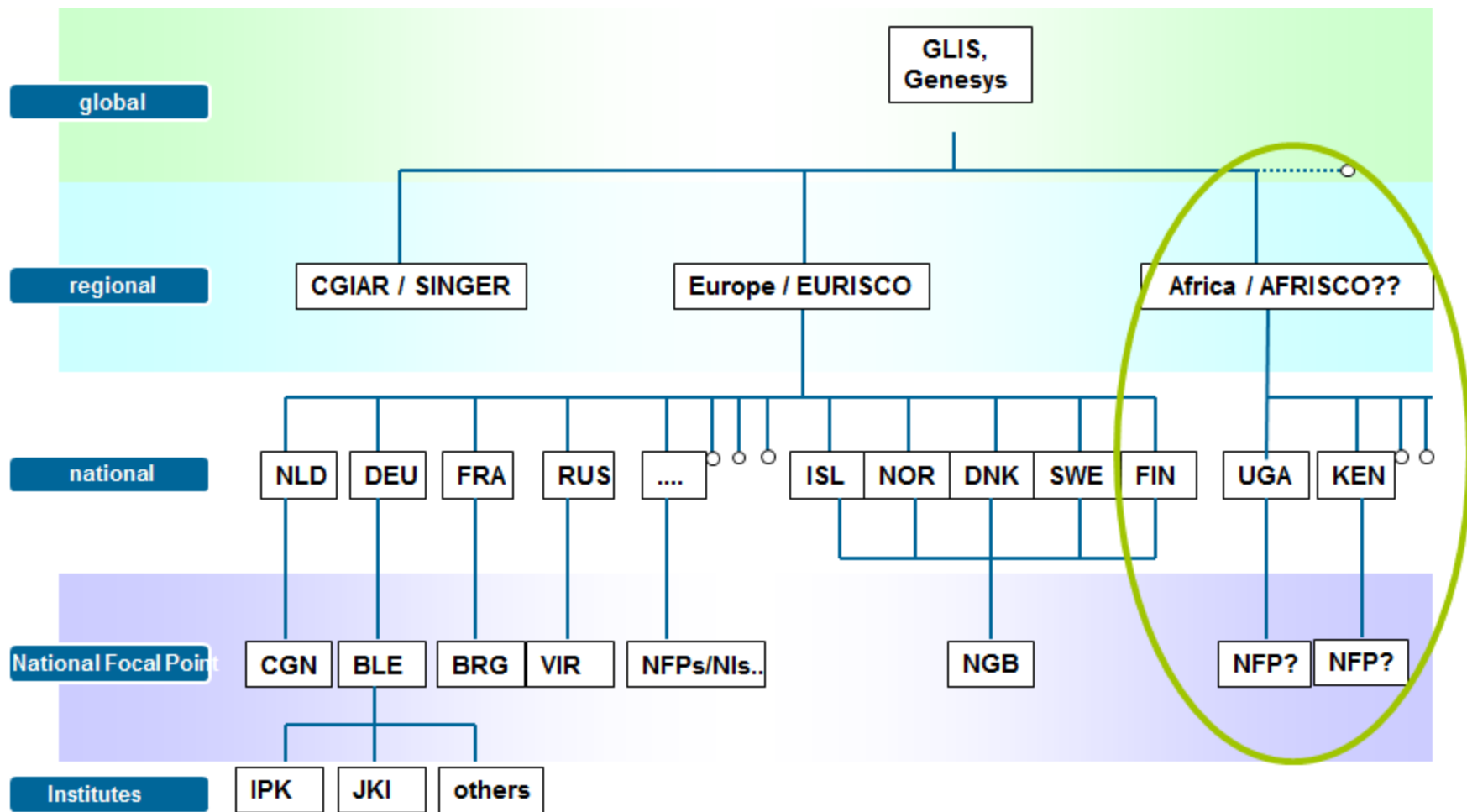
Planned improvements

- 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!

