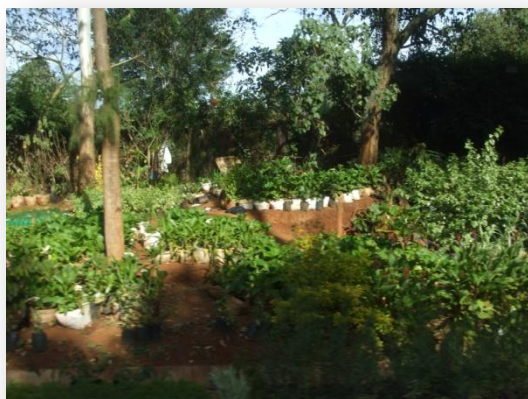


Promoting conservation and use of Plant Genetic Resources for Food and Agriculture – Information services for users worldwide



Sónia Dias
EURISCO Coordinator
&
Michael MacKay
Senior Scientist
Biodiversity Informatics

Bioversity International, Rome, ITALY

**EUCARPIA Section on Genetic Resources
European Plant Genetic Resources Conference 2011
“To serve and conserve”**

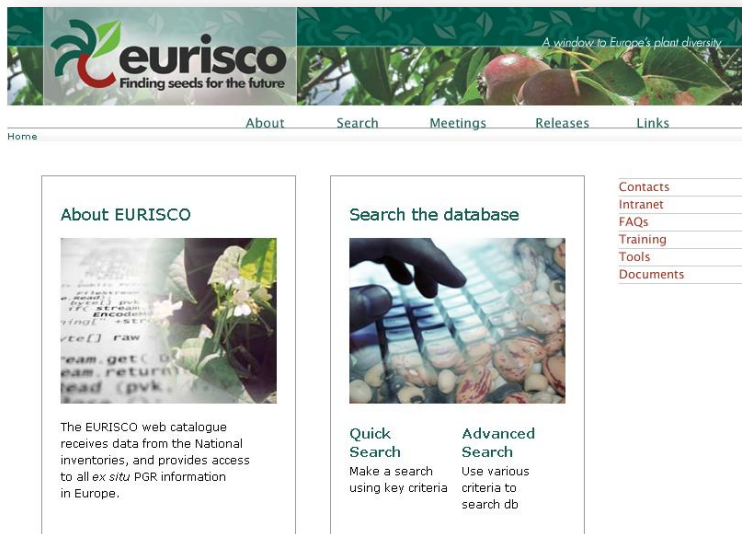
**Wageningen, The Netherlands
5 - 7 April 2011**

Outline

EURISCO and GENESYS Portals

- What they are
- Data providers
- What do they conserve
- Who do they serve
- Search examples
- Next steps.

What it is

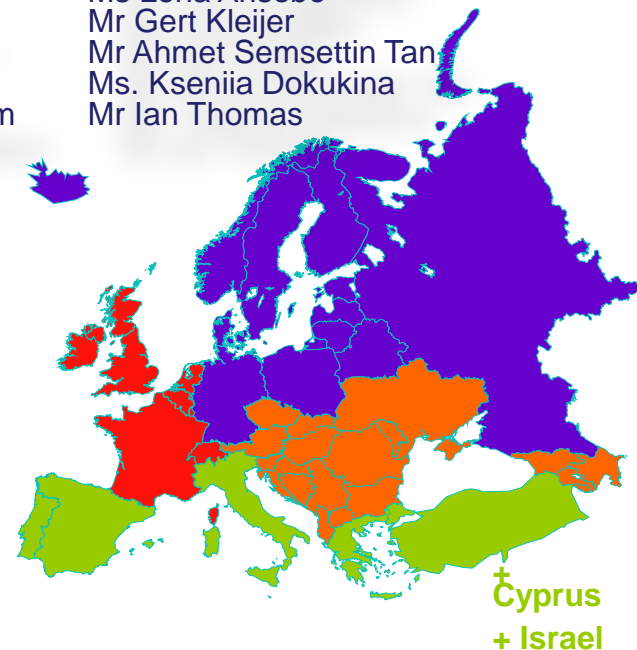


The screenshot shows the EURISCO website homepage. At the top, there is a banner with the EURISCO logo and the tagline "Finding seeds for the future". Below the banner is a navigation menu with links for Home, About, Search, Meetings, Releases, and Links. The main content area is divided into three columns. The left column is titled "About EURISCO" and features a photograph of a plant with a small inset image of a document. The middle column is titled "Search the database" and features a photograph of a hand holding a tray of seeds. The right column contains a vertical list of links: Contacts, Intranet, FAQs, Training, Tools, and Documents. Below the "Search the database" section, there are two sub-sections: "Quick Search" with the text "Make a search using key criteria" and "Advanced Search" with the text "Use various criteria to search db".

- Is a central **PGR European Catalogue** of *ex situ* collections
- is the **“one stop shop window”** to **European *ex situ*** collections
- is an accession-level information system providing access to **passport** data
- is based on the **National Inventories**
- is helping countries to **meet national and international commitments.**

Network of NFPs

Albania	Mr Belul Gixhari	Netherlands	Mr Theo van Hintum
Armenia	Ms Marina Hovhannisvan	NordGen	Mr Dag Terje Endresen
Austria	Mr Wolfgang Kainz	Norway	Mr Åsmund Asdal
Azerbaijan	Mr Afig Mammadov	Poland	Ms Zofia Bulinska-Radomska
Belarus	Mr Uladzimir Harelik	Portugal	Ms Celina Matos
Belgium	Mr Marc Lateur	Romania	Mr Neculai Cristea
Bosnia and Herzegovina	Ms Lidija Tomic	Russian Federation	Mr Vladimir Korneev
Bulgaria	Ms Nikolaya Velcheva	Serbia	Ms Milena Savic Ivanov
Croatia	Ms Mirta Culek	Slovakia	Mr Lubomir Mendel
Cyprus	Mr Angelos Kyratzis	Slovenia	Mr Vladimir Meglic
Czech Republic	Ms Iva Faberová	Spain	Mr Edurne Aguiriano
Estonia	Mr Vahur Kukk	Sweden	Ms Lena Ansebo
Finland	Ms Merja Vetelainen	Switzerland	Mr Gert Kleijer
France	to be nominated	Turkey	Mr Ahmet Semsettin Tan
Georgia	Ms Tamar Jinjikhadze	Ukraine	Ms. Kseniia Dokukina
Germany	Mr Frank Begemann	United Kingdom	Mr Ian Thomas
Greece	Ms Parthenopi Ralli		
Hungary	Mr Attila Simon		
Ireland	Mr Noel Collins		
Israel	Mr Rivka Hadas		
Italy	Mr Carlo Fideghelli		
Latvia	Mr Anita Gaile		
Lithuania	Mr Raimondas Baltrenas		
Macedonia	Mr Suzana Kratovalieva		
Malta	Ms Maureen Delia		
Moldova	Mr Anatol Ganea		
Montenegro	Mr Miroslav Cizmovic		



What does it conserves



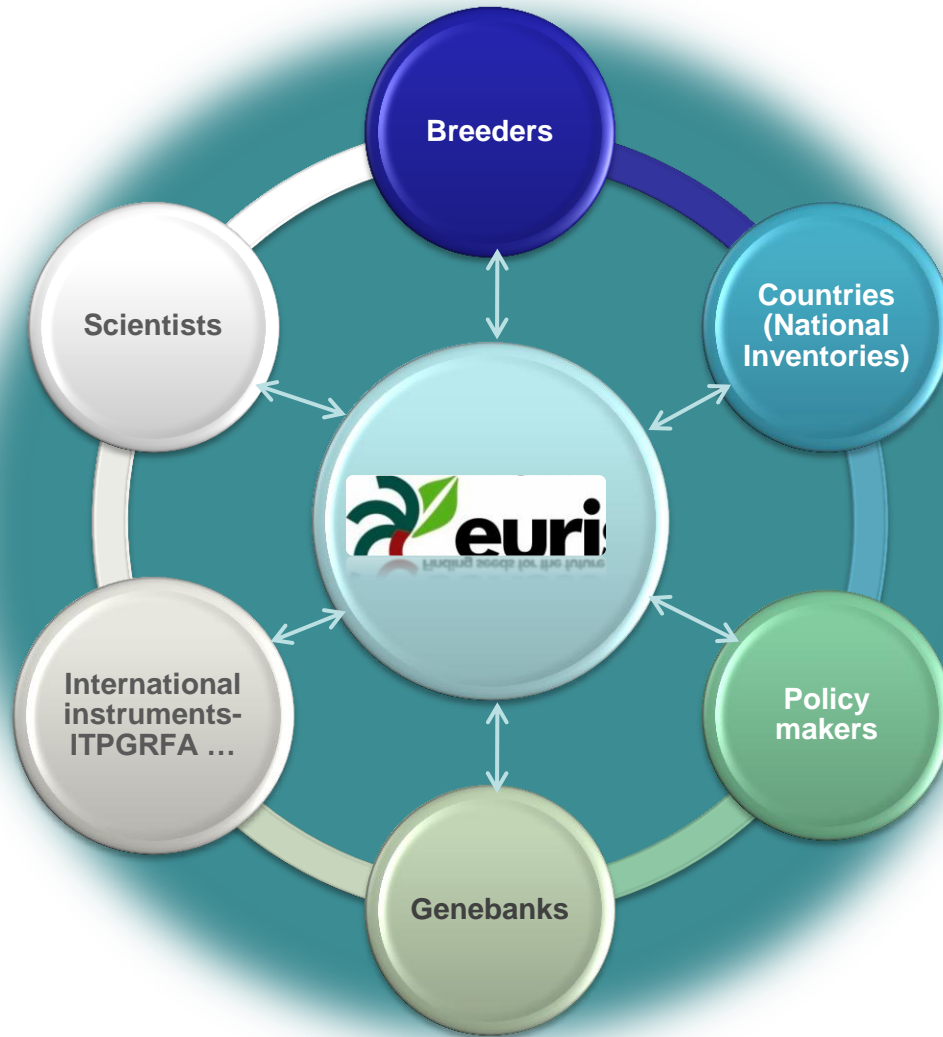
Ex situ

National Inventories	41 Countries
Genebanks	313
Country sources	217
Wild species	103,139 accessions
Breeding/research material	203,027 accessions
Traditional cultivars/landraces	269,518 accessions
Improved cultivars	157,704 accessions
International Treaty (MLS)	213,583 accessions
Species	>35,000
Genera	> 5,400
Geo-references, etc	

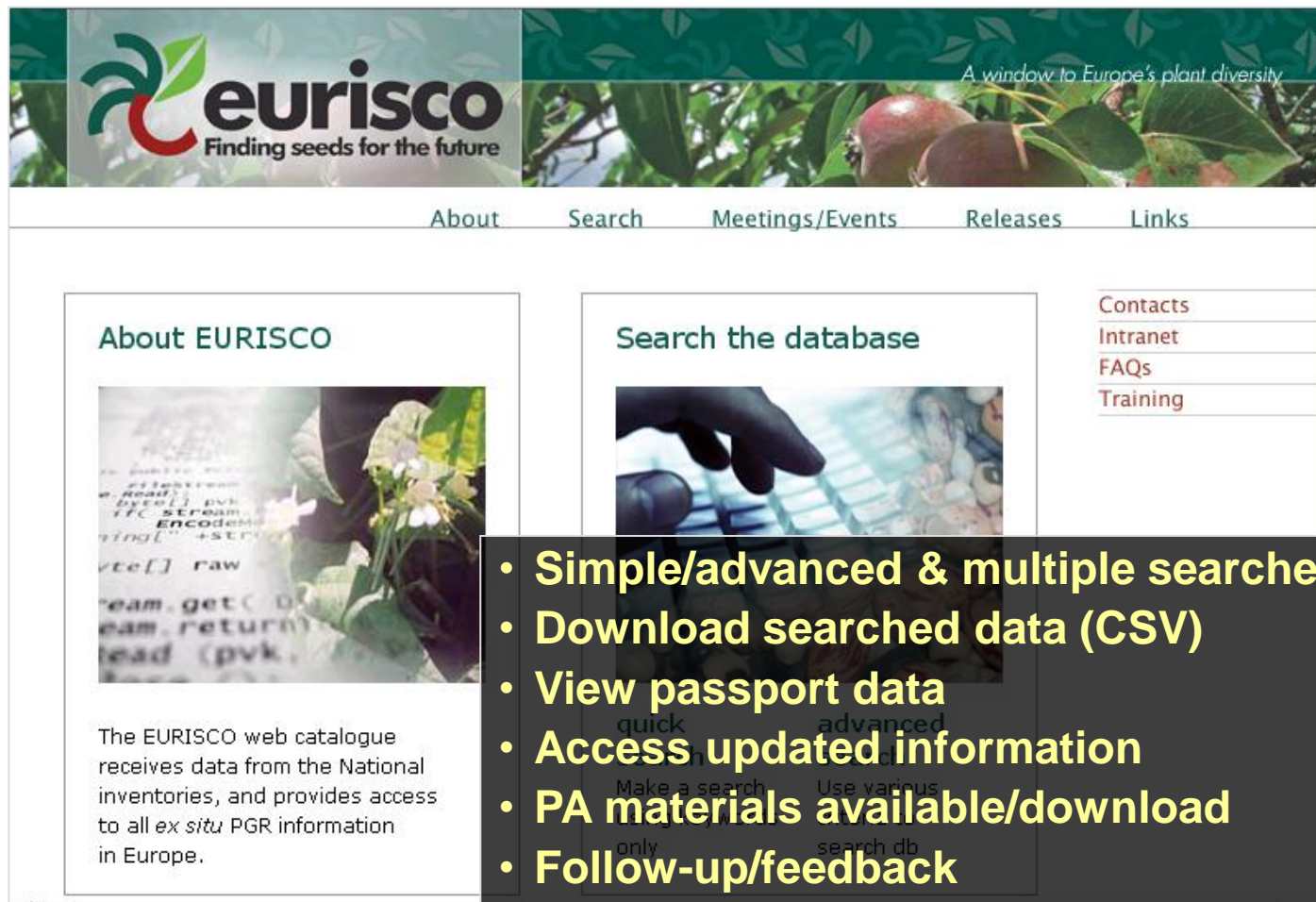
Total **1,084,671 accessions**

(March 2011)

Who does it serve




What can you see



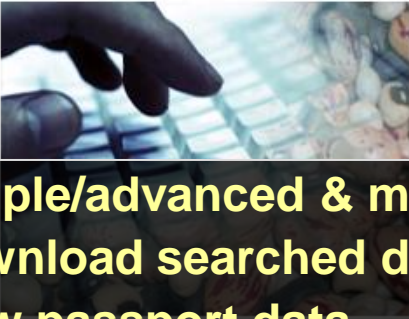
The screenshot shows the EURISCO website header with the logo and tagline "Finding seeds for the future" and the slogan "A window to Europe's plant diversity". The navigation menu includes "About", "Search", "Meetings/Events", "Releases", and "Links". On the right side, there are links for "Contacts", "Intranet", "FAQs", and "Training".

About EURISCO



The EURISCO web catalogue receives data from the National inventories, and provides access to all *ex situ* PGR information in Europe.

Search the database



- Simple/advanced & multiple searches
- Download searched data (CSV)
- View passport data
- Access updated information
- PA materials available/download
- Follow-up/feedback
- Free access to information

EURISCO example



Quick Search

- Taxonomy
- Accession
- Status
- Site

Advanced Search

- Contacts
- Intranet
- FAQs
- Training
- Tools
- Documents

Advanced Search

Holding Institute

- Holding institute code
- Holding institute name
- National inventory name

Accession identifiers

- Accession number
- Accession name(s)
- Common crop name
- Biological status
- Country of origin

Taxonomy information

- Genus
- Species Author
- Subtaxa
- Subtaxa Author

Acquisition/Storage information

- Acquisition date
- Collecting/acquisition source
- Storage type
- MLS status
- AEGIS status

Collecting mission information

- Collecting number
- Collecting institute code

Collecting site information

- Latitude (decimal degrees)
- Longitude (decimal degrees)
- Elevation (m)
- Collecting date
- Location of collecting

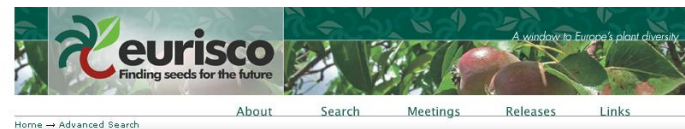
Donor information

- Donor institute code
- Donor accession number

Other

- Breeding inst code
- Ancestral data
- Location of safety duplicates code
- Remarks
- Decoded collecting institute
- Decoded breeding institute
- Decoded donor institute
- Accession URL

Reset Next



Quick Search

- Taxonomy
- Accession
- Status
- Site

Advanced Search

- View by:
- Holdings Institutes
- Accession identifiers
- Genus, Species, Subtaxa
- Sample Status
- Acquisition Source
- MLS Status
- Storage Type
- Collecting site information
- Donor information
- National Inventory
- All accession details

- Contacts
- Intranet
- FAQs
- Training
- Tools
- Documents

Your selection (26962 Accessions)

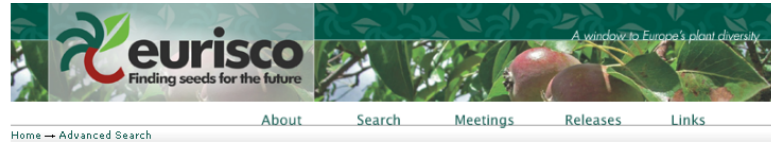
National inventory name
NLD

Number of lines returned: 9
View Summary by Sample Status

Sample Status	NO. ACC.
Wild	4293
Wild - Natural	4473
Wild - Semi-natural	3
Weedy	1
Traditional cultivar / Landrace	7269
Breeding / Research material	2444
Breeding / Research material - Breeder's line - Hybrid	8
Advanced / Improved cultivar	8560

Search within results
Download all result of this table in CSV
Download all results with in MCDP format in CSV

EURISCO example



Quick Search

- Taxonomy
- Accession
- Status
- Site

Advanced Search

- View by:**
- Holdings Institutes
 - Accession identifiers
 - Genus, Species, Subtaxa
 - Sample Status
 - Acquisition Source
 - MLS Status
 - Storage Type
 - Collecting site information
 - Donor information
 - National Inventory
 - All accession details

- Contacts
- Intranet
- FAQs
- Training
- Tools
- Documents

Your selection (26962 Accessions)

National inventory name
NLD

Number of lines returned: 7269

1 20 >>>

Accession List

Accession Number	Accession Name	Common Crop Name	Acquisition Date	Map	Details
A54750129					
A54750151					
A64750047					
CGN00001	Maartsche Gerst	barley	12-51-1986		
CGN00002	6-rijige	barley	12-51-1986		
CGN00278	Lyallpur 4595	barley	12-51-1986		
CGN00324	Plancy Aube	barley	12-51-1986		
CGN00359	St. Croix	barley	12-51-1986		
CGN00362	Savognin	barley	12-51-1986		
CGN00365	Baja Aragon	barley	12-51-1986		
CGN00367	C.I.3515	barley	12-51-1986		
CGN00374	MALAGA	barley	12-51-1986		
CGN00375	Randa	barley	12-51-1986		
CGN00376	ALHAMA	barley	12-51-1986		
CGN00377	Baeza	barley	12-51-1986		
CGN00378	Karpathos	barley	12-51-1986		
CGN00379	Cevada	barley	12-51-1986		
CGN00380	Maraini	barley	12-51-1986		
CGN00381	Almara	barley	12-51-1986		
CGN00383	ODESSA	barley	12-51-1986		

Download all results in EXCEL, CSV, XML

Search within results

Download all results with all fields in EXCEL, CSV, XML

http://eurisoo.ecpgr.org/search/accesion_details.php?accd=10129658&currTimeForIEHack=13013669020377

PASSPORT DATA

INVENTORIES

National Inventory Code: MLD
National Inventory: Netherlands

HOLDER INFORMATION

Institute Code: MLD037
Institute Name: Centre for Genetic Resources, the Netherlands Plant Research International
Holder User Type: GOV

ACCESSION INFORMATION

Accession Number: CGN00367
Accession Names: C.I.3515
Accession Common Crop Names: BARLEY
Biological Status: Traditional cultivar / Landrace
Country of Origin: Spain
MLS Status: Yes
AEGIS Status: N/A

TAXONOMY INFORMATION

Genus: *Hordeum*
Species: *vulgare*
Species Author: L.
Subtaxon: *subsp. vulgare*
Subtaxon Author:
Taxon: *Hordeum vulgare subsp. vulgare* L.

ACQUISITION/STORAGE INFORMATION

Acquisition Date: 12-05-1986
Acquisition Source: Market or shop
Storage: Long term; Medium term

COLLECTING INFORMATION

Collecting Number:
Collecting Institute Code:
Collecting Date: 1923
Collecting Latitude: 40.066700
Collecting Longitude: -3.866670
Collecting Elevation:
Collecting Locality: Toledo, Market in Yuncos

DONOR INFORMATION

Donor Institute Code: MLD078
Donor Name: Foundation for Agricultural Plant Breeding
Donor Accession Number: GZ 15

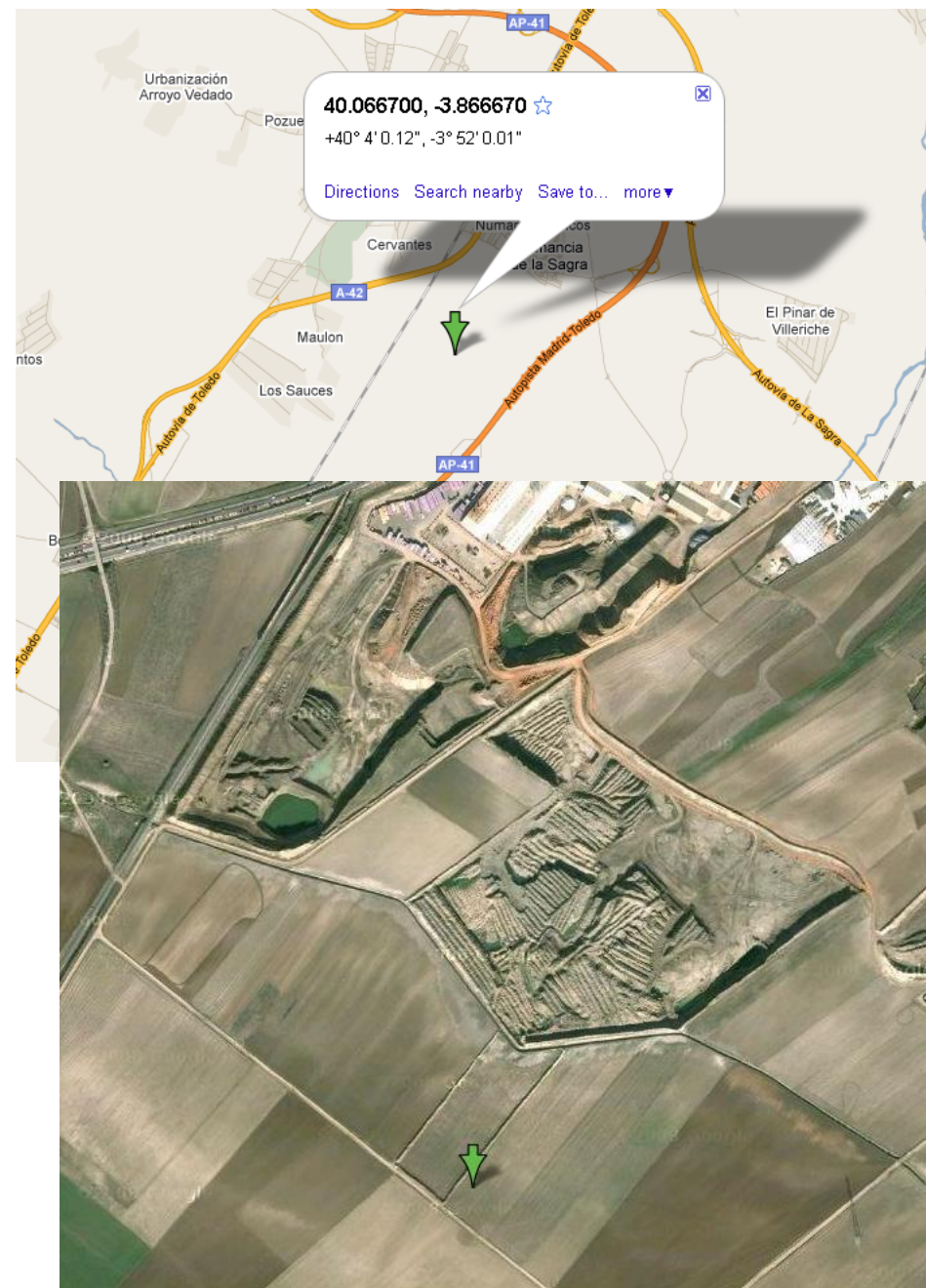
BREEDER INFORMATION

Breeder Institute Code:
Breeder Name:

OTHER INFORMATION

Ancestral data:
Location of safety duplicates: Genebank, Leibniz Institute of Plant Genetics and Crop Plant Research
URL: <http://www.soh.wur.nl/applications/consentis/AccessionDetails.aspx?accesionnumber=CGN00367>
Remarks:

Print Close Window



http://eurisoo.ecpgr.org/search/accession_details.php?accid=10129658&currTimeForIEHack=13013869020377

PASSPORT DATA

INVENTORIES

National Inventory Code: NLD
National Inventory: Netherlands

HOLDER INFORMATION

Institute Code: NLD037
Institute Name: Centre for Genetic Resources, the Netherlands Plant Research International
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Subtaxon Author:
Taxon: *Hordeum vulgare subsp. vulgare* L.

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Collecting Latitude: 40.066700
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Breeder Name:

OTHER INFORMATION

Ancestral data:
Location of safety duplicates: Genebank, Leibniz Institute of Plant Genetics and Crop Plant Research
URL: <http://www.soh.wur.nl/applications/consentis/AccessionDetails.asp?accessionnumber=CGN00367>
Remarks:
Print Close Window

Identifiers

Accession number: CGN00367
Accession name: C.I.3515
Crop (and subcrop type): barley (H. vulgare subsp. vulgare spring)
Population type: Land variety

SMTA status

SMTA needed: Yes

Other information

Observations

Flowering characteristics

annuality winter type

Plant characteristics

growth height short long

Leaf characteristics

flagleaf auricle color green

Spike characteristics

row number 4- or 6-rowed

spike density lax dense

awnedness - hoodedness central row awns

lemma color at maturity yellow/white

Seed characteristics

seed shape elongated

seed hull covered

Agronomical characteristics

lodging susceptibility high low

Next steps

<http://eurisco.ecpgr.org>

- Upgrade the upload mechanism for passport data
- Implement Taxonomy solutions (guided by D&I NCG)
- Develop the upload mechanism for C&E data
- Web-enable C&E data
- Revise functionalities for C&E
- A pillar to the global system – GENESYS

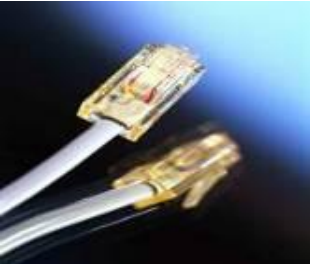


C&E

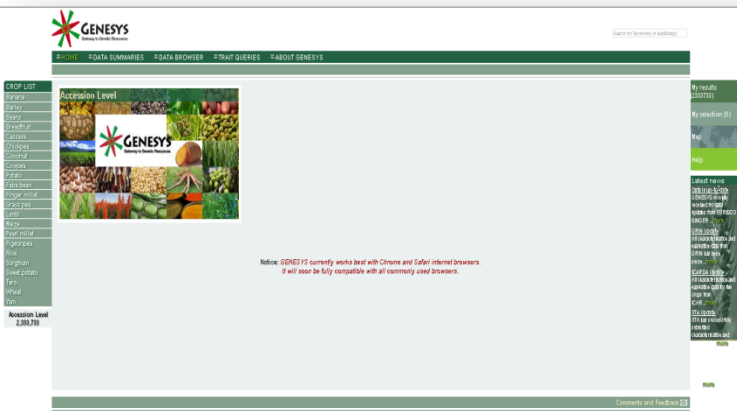
EURISCO Catalogue is maintained by Bioversity International on behalf of the European Cooperative Programme for Plant Genetic Resources (ECPGR).



Up scaling the Informatics on Plant Genetic Resources to the Global Level

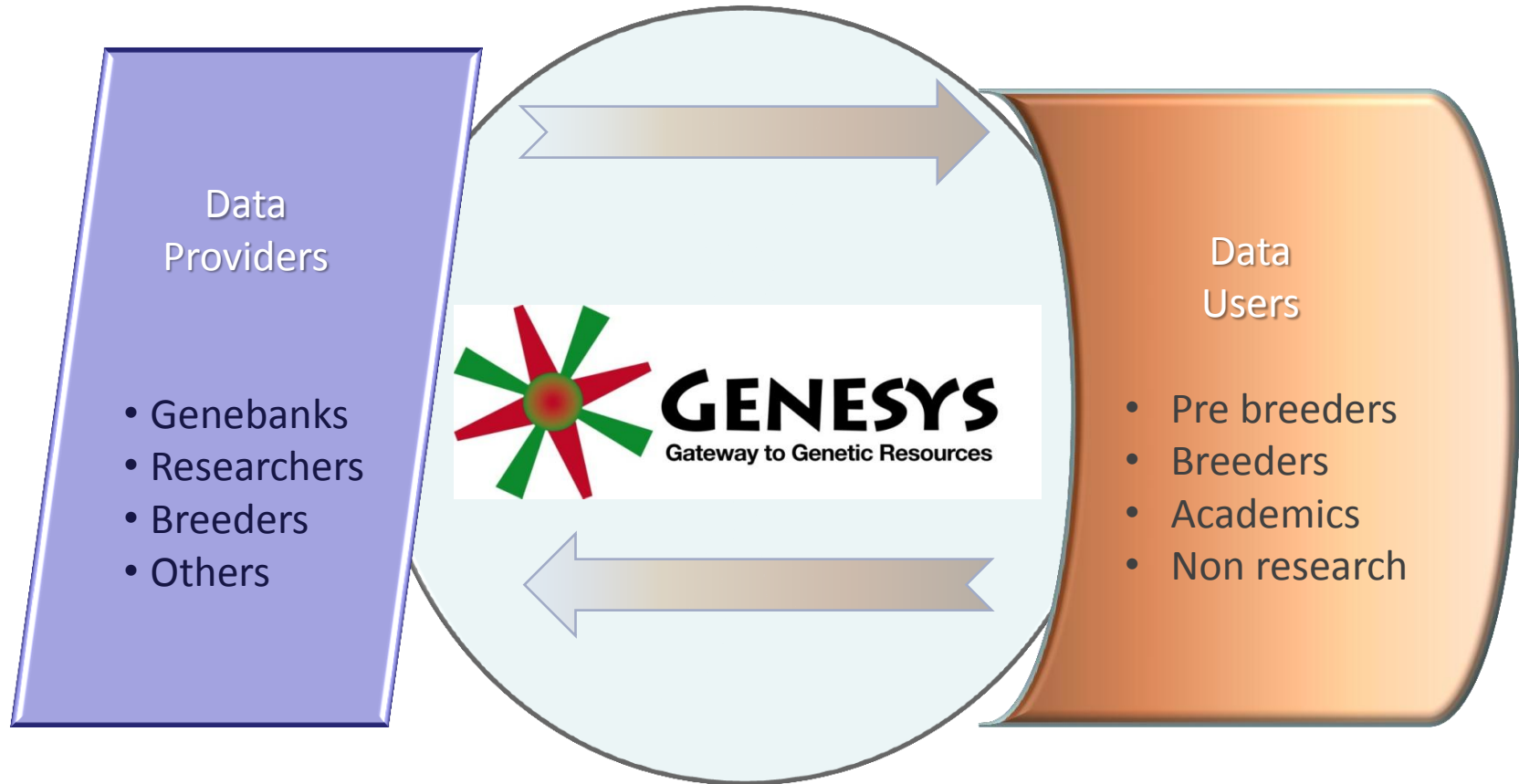


What it is



- Is a **one stop-shop** to *ex situ* collections **worldwide** which is accessible by all
- It enables **data mining, discovery** and instant selection of germplasm sets on **trait-based information**
- It supports the genebanks to fulfill their **obligations to the International Treaty**
- Is the **Global** Information System for Genetic Resources for Food and Agriculture.

Who does it serve



A global system for access and benefit sharing



Data sources



SINGER – CGIAR

Coordination hosted by



EURISCO

313 European genebanks

Coordination hosted by



+ Cyprus
+ Israel



GRIN – 21 U.S. genebanks



What does it conserve



A work in progress

- ✓ Development guided by an International Steering Committee, User and Technical Advisory Groups
- ✓ Passport 2.4 M accessions
- ✓ C & E data ~ 11 M records
- ✓ Environmental data > 11 M records
 - User-friendly intuitive interface
 - Attributes data providers
 - Quick response to queries
 - Requesting module.

CROP LIST

- Banana
- Barley
- Beans
- Breadfruit
- Cassava
- Chickpea
- Coconut
- Cowpea
- Cultivated potato
- Faba bean
- Finger millet
- Grass pea
- Lentil
- Maize
- Pearl millet
- Pigeonpea
- Rice
- Sorghum
- Sweet potato
- Taro
- Wheat
- Yam

Accession Level
2,328,517

Accession Level



My result set

My accessions

GIS MAPS

Need Help

Latest News



GENESYS example


You can find the single bread wheat accession that has:

1. brown kernels,
2. is resistant to stem rust, and
3. originates from Afghanistan where rainfall 150-350 mm/annum.

Accession Details

Passport Information

Institute: National Small Grains Germplasm Research Facility- USDA-ARS [View accession details on the holding genebank website](#)
 Accession Number: PI 347198
 Taxonomy: *Triticum aestivum*

Source Country:  Afghanistan
 Sample Status: Traditional cultivar/Landrace
 Storage Type: Seed Collection Duplicate: National Seed Storage Laboratory- USDA-ARS

Acquisition

Environment

Longitude: 67.81667 Latitude: 34.8 Altitude: 2850 climate layers by [WorldClim](#)

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Avg.
Minimum temperature	-18.3	-15.4	-8.5	-2.1	0.8	4.4	5.9	4.7	0.1	-4.1	-8.8	-13.4	-4.56
Maximum temperature	-5	-3.8	1.8	8.9	13.5	19.1	21.4	21.1	17.5	11.2	4.9	-0.7	9.16
Precipitation	36	54	51	65	29	6	3	1	1	20	20	37	26.9
Annual Mean Temperature	2.3					Mean Temperature of Coldest Quarter					-9.5		
Mean Diurnal Range (Mean of monthly (max temp - min temp))	13.7					Annual Precipitation					323		
Isothermality (P2/P7)	0.34					Precipitation of Wettest Month					65		
Temperature Seasonality (standard deviation)	85.36					Precipitation of Driest Month					1		
Max Temperature of Warmest Month	21.4					Precipitation Seasonality (Coefficient of Variation)					79		
Min Temperature of Coldest Month	-18.3					Precipitation of Wettest Quarter					170		
Temperature Annual Range(P5-P6)	39.7					Precipitation of Driest Quarter					5		
Mean Temperature of Wettest Quarter	-3.2					Precipitation of Warmest Quarter					10		
Mean Temperature of Driest Quarter	11.7					Precipitation of Coldest Quarter					127		
Mean Temperature of Warmest Quarter	12.7												

Characterization & Evaluation

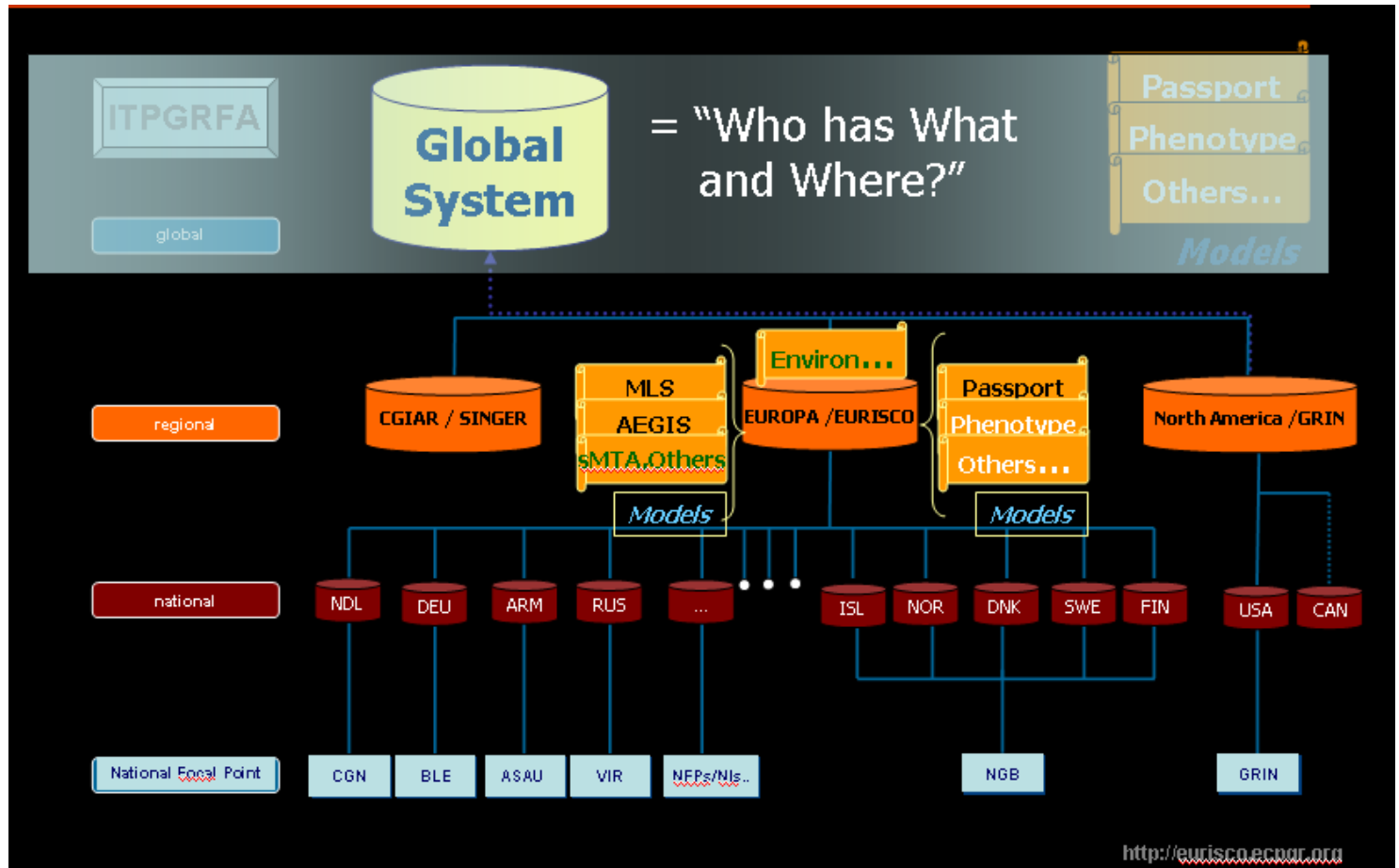
Morphology | Chemical | Disease | Insect | Abiotic Stress | Growth | Phenology | Cytological | Production

Next steps



- More genebank data
- More C&E data
- Include breeders' data
- Link to genetic data
- On-line analysis of data
- Additional functionality is needed for:
 - Pedigree analysis
 - Full MLS/SMTA compliance
 - Interoperability with other systems

We work together to achieve more





These plant genetic resource portals connect scientists, breeders and researchers so that they can work together to achieve conservation and use goals faster and more easily.

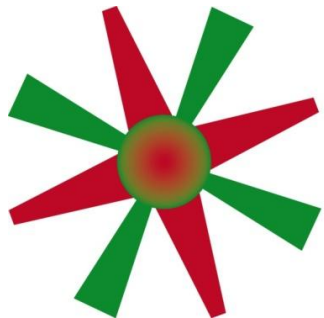


THANK YOU

A 3D rendering of a blue and white globe with several white human figures standing on top and holding hands in a circle around it. The globe is centered in the background of the "THANK YOU" text.

www.genesys-prg.org

<http://eurisco.ecpgr.org>



GENESYS
Gateway to Genetic Resources

