

# Info for food - EURISCO and promoting agrobiodiversity use



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*In situ* PGR conservation: policy implications and implementation

Symposium "CWRs & Landraces in Europe", 13-16 September, Funchal, Madeira, Portugal





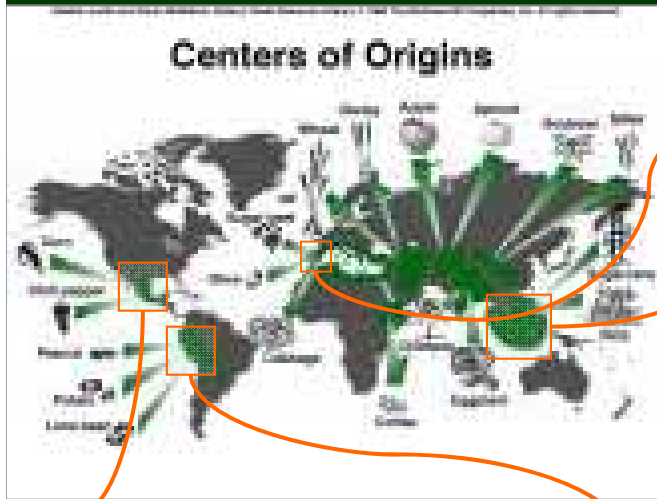
# Outline



- ✓ Roles
- ✓ Content
- ✓ Impact
- ✓ Future perspectives
- ✓ Aims
- ✓ Vision on long term roles



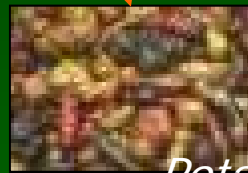
# Who hold what and where?



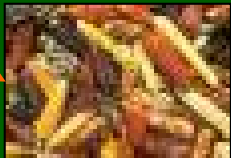
*Olive*



*Rice*

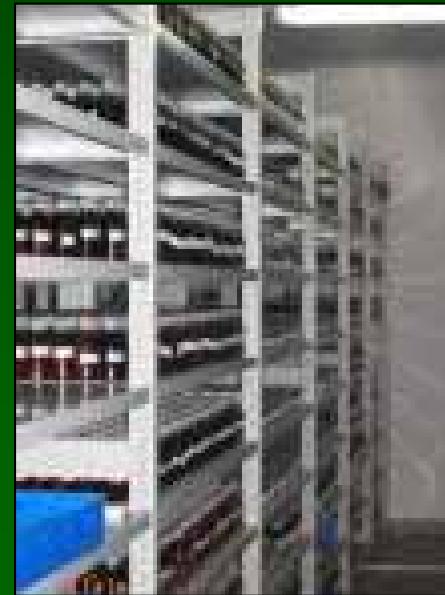


*Potato*



*Maize*

## Genebanks





# Scientific standards

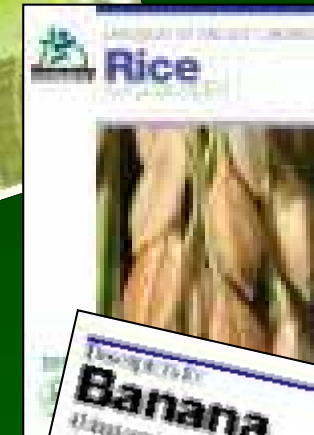


Passport data

EURISCO DESCRIPTORS	
<b>0. National inventory code</b> Code identifying the National Inventory, the code of the country preparing the National Inventory. Exceptions are possible, if agreed with EURISCO such as NGB. Example: NL0	(NICODE)
<b>1. Institute code</b> FAO Institute Code of the institute where the accession is maintained. Example: NL0037	(INSTCODE)
<b>2. Accession number</b> This number serves as a unique identifier for accessions within a genebank collection, and is assigned when a sample is entered into the genebank collection. Example: CSW00254	(ACCNUMB)
<b>3. Collecting number</b> Original number assigned by the collector(s) of the sample, normally composed of the name or initials of the collector(s) followed by a number. This number is essential for identifying duplicates held in different collections. Example: 8890-110	(COLLNUMB)
<b>4. Collecting institute code</b> Code of the Institute collecting the sample. If the holding institute has collected the material, the collecting institute code (COLLCODE) should be the same as the holding institute code (INSTCODE).	(COLLCODE)

Crop specific

>80 crops



Common to all crops

*Like DarwinCore*



# EURISCO



<http://eurisco.ecpgr.org>

- is the “one stop shop” window to European *ex situ* collections
- is an accession-level information system providing access to passport information
- is based on the National Inventories
- is contributing to a coherent European information system on Plant Genetic Resources.



# EURISCO roles

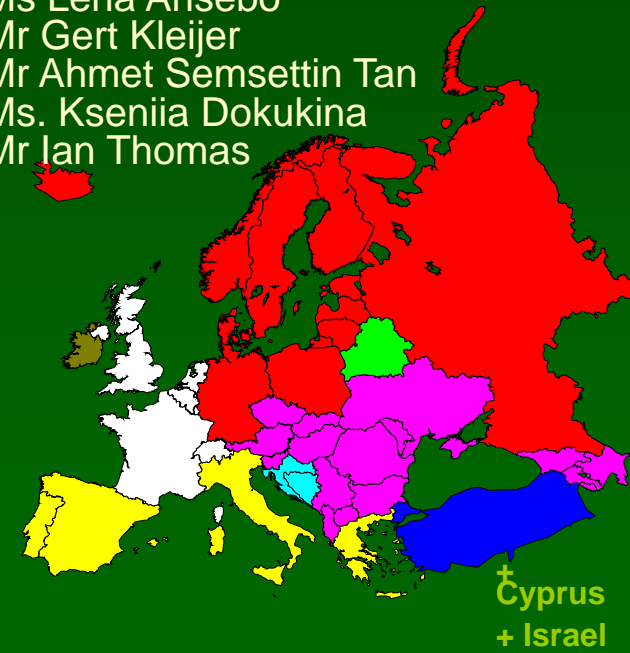
- Providing **technical support for the creation/development** of National PGR Inventories
- Developing and maintaining an **European PGR Search Catalogue** with passport data on ***ex situ* collections** maintained in Europe by:
  - ✓ having the possibility to frequently update the Catalogue from the National PGR Inventories
  - ✓ providing easy access to information on PGR maintained *ex situ* in Europe, thus facilitate locating and accessing it.
- Assisting countries in meeting **national obligations and commitments** to:
  - ✓ the **ITPGRFA** (namely Art. 5, 12, 13, 14, 16 and 17)
  - ✓ the FAO (namely GPA Priority Activity 17)
  - ✓ the CBD (namely Art. 7; 9; 17)
  - ✓ ..., among others ...





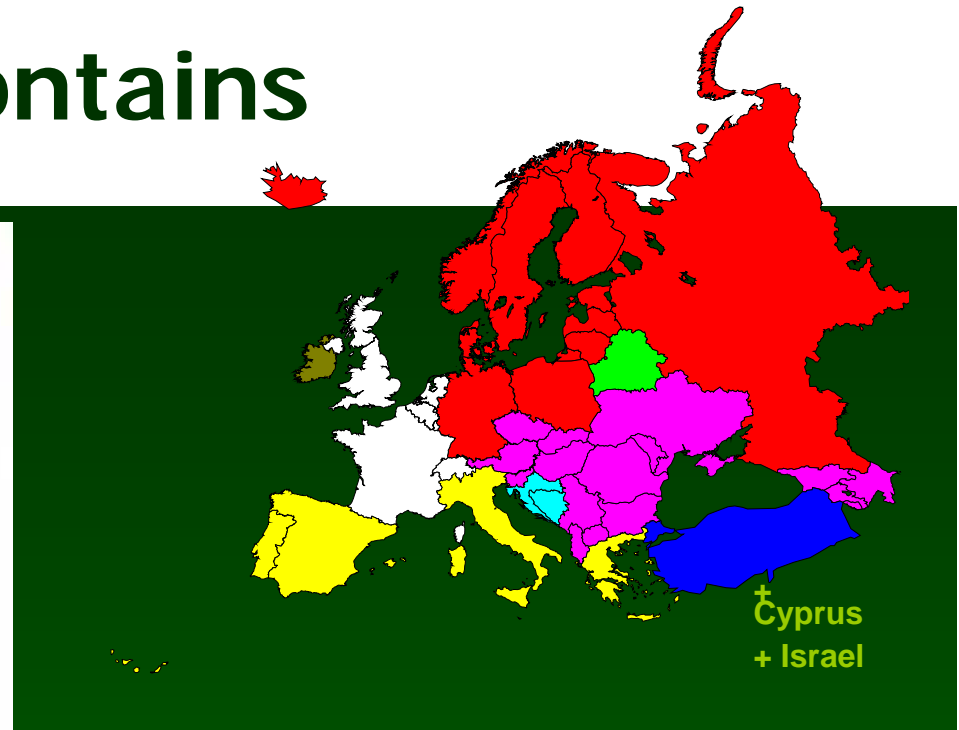
# EURISCO NFPs Network

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 it contains



<b>National Inventories</b>	<b>41 Countries</b>
<b>Genebanks</b>	<b>313</b>
<b>Country sources</b>	<b>217</b>
<b>Wild species</b>	<b>102,736 accessions</b>
<b>Breeding/research material</b>	<b>158,245 accessions</b>
<b>Traditional cultivars/landraces</b>	<b>267,242 accessions</b>
<b>Improved cultivars</b>	<b>199,680 accessions</b>
<b>International Treaty (MLS)</b>	<b>&gt;185,000 accessions</b>
<b>Species</b>	<b>&gt;35,200</b>
<b>Genera</b>	<b>&gt; 5,400</b>
<b>Geo-references, etc</b>	
<b>Total</b>	<b>1,082,024 accessions</b>

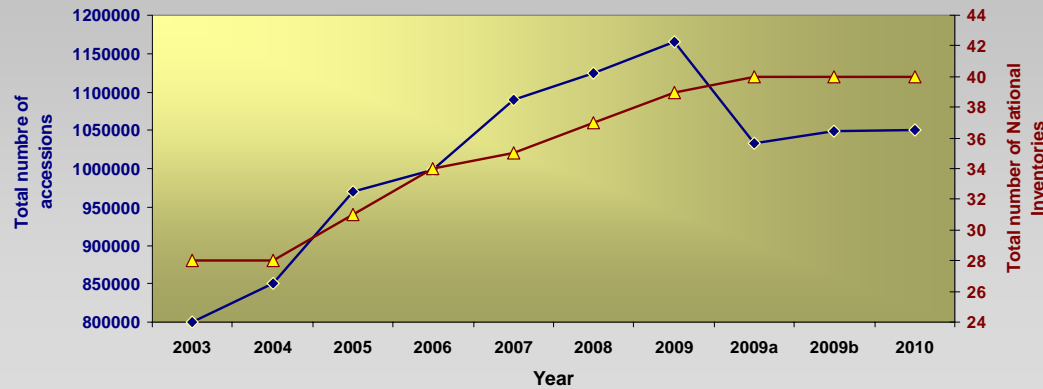
(June 2010)



# What it contains

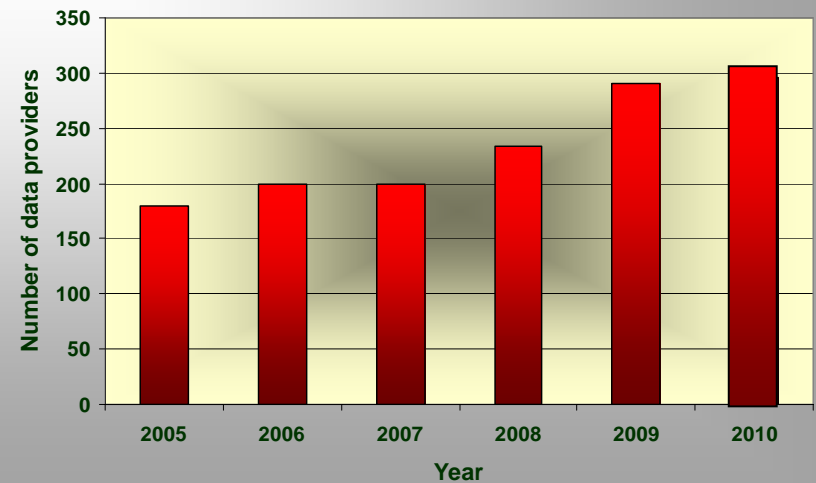
- NI and number of accessions

No. accessions and NI from 2003-2010



- Data providers

Data providers 2005-2010





# EURISCO for Europe

The screenshot shows the EURISCO website with the following elements:

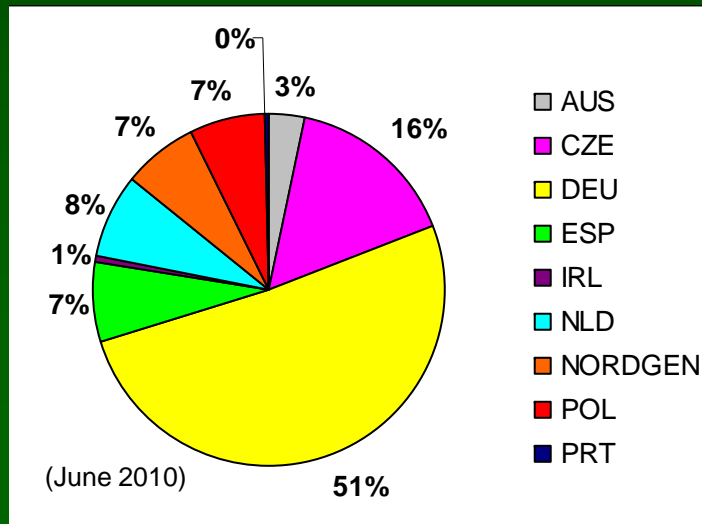
- Header:** EURISCO logo with the tagline "Planting seeds for the future" and a navigation menu with links for Home, Search, Meetings, Releases, and Links.
- Quick Search:** A sidebar menu with links for Taxonomy, Accession, Status, and Site.
- Advanced Search:** A search box with a dropdown menu for "Country" and a list of search criteria: "Provisional Holdings", "Accession Numbers", "Gene, Accession Number", "Gene's Status", "Accession Dates", "All Dates", "Similar To", "Containing the Information", and "Other Information".
- World Map:** A world map with yellow and green dots indicating data points across various continents.
- Footer:** A list of links for Contacts, Internet, FAQs, Training, Tools, and Documents.



# EURISCO as service to the International Treaty on PGRFA

Since 2008 the MLS Genera from Annex I of the ITPGRFA is flagged in EURISCO

- Together, NIs have registered a total of 210,755 accessions in the MLS,
- Representing ~ 20% of the total material searchable in EURISCO,
- Covering around 66% of the genera from Annex I of the ITPGRFA.



## Annex I Genera covered by EURISCO MLS flag

*Avena, Beta, Brassica, Cajanus, Cicer, Dioscorea, Eleusine, Fragaria, Helianthus, Hordeum, Ipomoea, Lathyrus, Lens, Malus, Oryza, Pennisetum, Phaseolus, Pisum, Secale, Solanum, Triticosecale, Triticum, Vicia, Zea, Astragalus, Canavalia, Coronilla, Hedysarum, Lathyrus, Lotus, Lupinus, Medicago, Onobrychis, Ornithopus, Trifolium, Agropyrum, Alopecurus, Arrhenatherum, Dactylis, Festuca, Lolium, Phalaris, Phleum, and Poa*



# EURISCO impacts

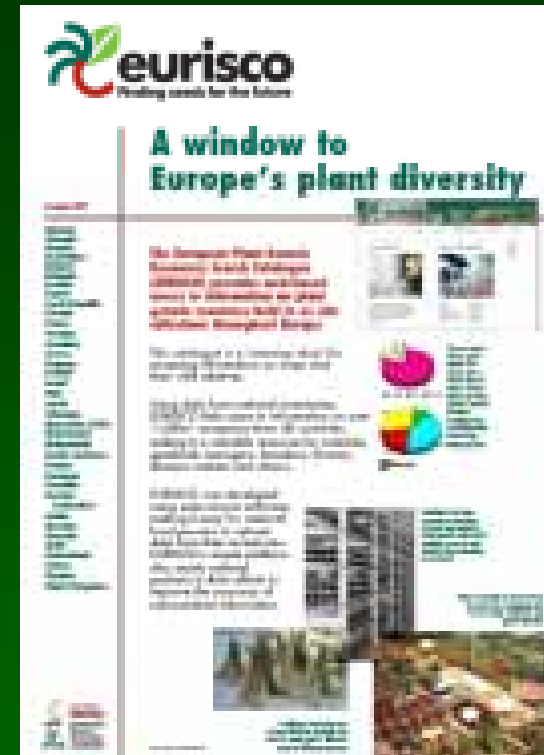
- Increase country profile
- Value collections
- Strengthened National Inventories
- For 37% of the European NIs, EURISCO is the unique online Internet source
- Contributed to the European Inventorying of PGR
- Increased awareness about the importance of PGR and associated information
- Facilitate meeting international and national commitments
- Refined taxonomic nomenclature/references and GIS data
- Promote conservation and utilization of PGR
- Linked to other information resources  
...more...





# EURISCO data providers and users' benefits

- Commitment from ECPGR and Bioversity
- Easy adoption of development tools
- Helpdesk support
- Training
- Web management
- Infrastructure/ NI support
- Wider visibility
- Data quality and availability
- Facilitated access to information
- Facilitated accomplishment of international and national commitments





# EURISCO data uses

- Diversity studies
- Gap analysis
- Data quality
- Eco-geographic surveying
- Ethnobotanical studies
- Crop adaptability and climate change
- Support to conservation strategies
- Support to legislation...
- MSc and PhD Thesis
- Research Papers
- National Reports
- Reports to ITPGRFA
- Contribute to FAO/WIEWS
- Better informed decision making
- ...





# EURISCO users

Examples of requests:

Do you have a list of *Triticum* germplasm collections? If so please let me know where I can access it ...

I'm a breeder in Argentina, and I am interested in obtaining *Brassica napus* germplasm for use in our program ...



# Who is looking into EURISCO



Everybody!

have you?

<http://eurisco.ecpgr.org>



# Geographical coverage of EURISCO users



8,656 visits came from 110 countries/territories

30 August 2009– 30 August 2010

	8,656 Visits
	4,161 Absolute Unique Visitors
	82,062 Pageviews
	9.48 Average Pageviews
	00:06:04 Time on Site
	35.82% Bounce Rate
	45.84% New Visits



# EURISCO impact

8,656 visits used 63 languages

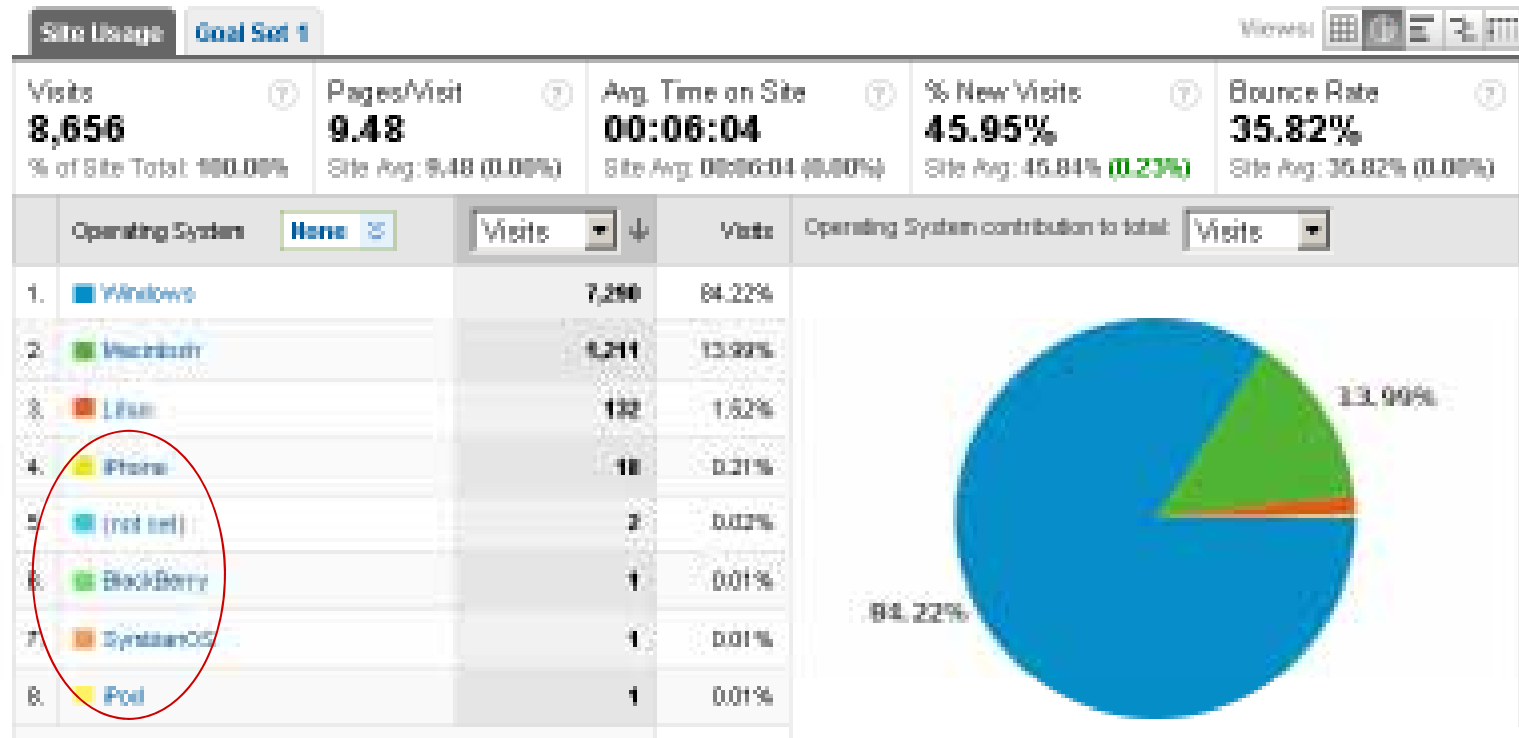
Site Usage		Goal Set 1		Views: [Grid] [List] [Table] [Map] [Print]		
Visits	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate		
<b>8,656</b>	<b>9.48</b>	<b>00:06:04</b>	<b>45.95%</b>	<b>35.82%</b>		
% of Site Total: 100.00%	Site Avg: 9.48 (0.00%)	Site Avg: 00:06:04 (0.00%)	Site Avg: 45.84% (1.23%)	Site Avg: 35.82% (0.00%)		
Language	Visits	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate	
1. en-us	4,024	9.10	00:05:37	33.20%	36.03%	
2. de	947	9.21	00:03:48	69.55%	31.07%	
3. it	526	5.80	00:02:48	82.70%	51.90%	
4. fr	487	9.66	00:04:56	59.47%	40.53%	
5. es	399	13.41	00:07:32	63.96%	19.78%	
6. ru	321	7.85	00:06:13	43.83%	33.02%	
7. en-gb	269	6.13	00:05:21	64.00%	27.60%	
8. pt	195	8.07	00:05:33	38.78%	17.88%	
9. de-de	182	34.91	00:38:29	8.79%	14.28%	
10. tr	169	10.99	00:18:49	33.73%	27.81%	

30 August 2009– 30 August 2010



# EURISCO impact

8,656 visits used 8 operating systems

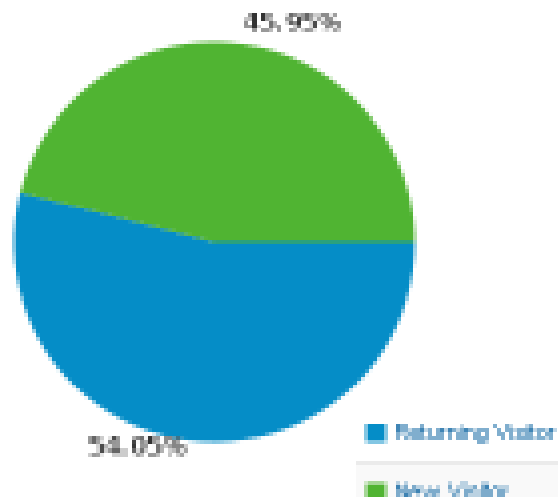


30 August 2009– 30 August 2010

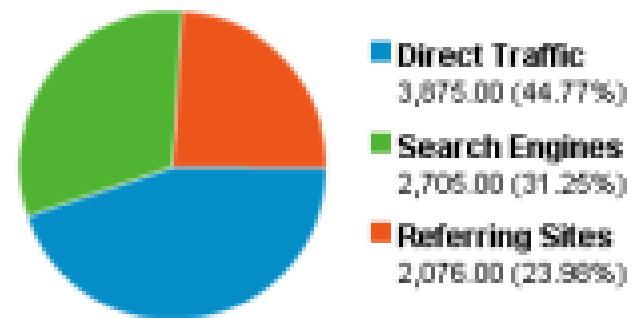


# EURISCO impact

8,656 visits from 2 visitor types



All traffic sources sent a total of 8,656 visits



30 August 2009– 30 August 2010





# But.....



## Next step...!



# Future perspectives

## Recommendation of the recent ECPGR External Review

**“ ... expand EURISCO’s structure, in order to include relevant data for the management of the *in situ* and on-farm components“**



# Future perspectives



*Ex situ* *In situ* On-farm



# Complementary to document the *in situ* and on-farm in EURISCO

	↓	↓
Data types	<ul style="list-style-type: none"> <li>•Accession level</li> <li>•C+E / Traits</li> </ul>	<ul style="list-style-type: none"> <li>•Population level</li> <li>•Traits</li> </ul>
Type of information	<ul style="list-style-type: none"> <li>•Passport data</li> </ul>	<ul style="list-style-type: none"> <li>•<i>In situ</i> and on-farm related data</li> </ul>
Data providers	<ul style="list-style-type: none"> <li>•Genebanks</li> </ul>	<ul style="list-style-type: none"> <li>•Conservation and protected areas, farmers...</li> </ul>
Users	<ul style="list-style-type: none"> <li>•Researchers, students, policy makers, breeders...</li> </ul>	<ul style="list-style-type: none"> <li>•Environmentalists, conservationists, landscape managers, ecologists....</li> </ul>
Development	<ul style="list-style-type: none"> <li>•MCPD+EURISCO descriptors, C+E descriptors, DarwinC, ontologies, web services ...</li> </ul>	<ul style="list-style-type: none"> <li>•<i>In situ</i> and on-farm scientific standards, ontologies, web services ...</li> </ul>
Sustainability	<ul style="list-style-type: none"> <li>•EURISCO <i>ex situ</i> network</li> </ul>	<ul style="list-style-type: none"> <li>•EURISCO <i>in situ</i> and on-farm network</li> </ul>
Update	<ul style="list-style-type: none"> <li>•<i>Ex situ</i> NFPs &amp; other data providers...</li> </ul>	<ul style="list-style-type: none"> <li>•<i>In situ</i> and on-farm NFPs and other data providers...</li> </ul>



# PGRSECURE perspective – *in situ* and on-farm data

- Research with novel GIS techniques to predict which CWR and LR accessions are likely to contain desirable traits
- Develop a Trait Information Portal (TIP) that makes accession level novel characterization trait information available to the user community.
- The TIP will be integrated with existing genomic (*e.g.*, EMBL Nucleotide Sequence Database) and PGRFA information systems (*e.g.*, CWRIS, EURISCO, ECCDB),.... .
- Development of European CWR and LR conservation strategies



# EURISCO aims at

- Becoming the European PGR information hub
- Having GIS/mapping/climatic data available
- Linking with other information sources - molecular, Traditional Knowledge, ...
- Attain standards of excellence on data quality
- Be the gateway for the AEGIS
- Continuing to be a Thematic Network contributing to GBIF
- Linking with the Global Information System -“GENESYS”
- Adding value and promoting sustainable utilization of PGR.
- ...



# A vision of what might be the long term role of EURISCO as a service for national and international policies

Going beyond the services to the ITPGRFA, the CBD, the Global Strategy for Plant Conservation, the Global Plan of Action for the Conservation and Sustainable Utilization of PGRFA and the European Plant Conservation Strategy.

Being an instrumental tool to:

- The European Commission Directive 2008/62/EG on *Conservation Varieties*.
- Help countries to enact specific policies such as “*Halting the loss of biodiversity by 2010 – and beyond*”.
- The “*Adaptation to Climate Change in the Agricultural Sector*”.
- The creation of the national and European LR inventories.
- Contribute to the implementation of the *EC Community Biodiversity Strategy*.
- The *Biodiversity Action Plan for Agriculture (COM/2001/0162)*.



## A vision of what might be the long term role of EURISCO in better meeting the users' requirements.

- Make available data on **characterization and evaluation** traits.
- **Data mining**, discovery and selection of germplasm sets on trait-based information.
- **Links** with other data types: molecular, transcriptomic, environmental, pest, diseases, etc.
- Clearing house mechanism for the countries to meet the multiple **reporting commitments** for the various legally binding and voluntary international instruments.
- **Contribute to bridge the gap between conservation and use**



## A vision of what might be the long term role of EURISCO in better meeting the users' requirements.

- **Supporting tool** for better informed policy making decisions on conservation actions and strategies
- **Knowledge hub** on the plant diversity maintained in European conservation centers
- Scientific, practical, agricultural, and **policy impact** on the state-of-the-art of CWR / LR conservation and use
- **Raise general awareness** of the need to value and conserve CWR / LR.



**It's not what the software does  
but is what the user does!**



**Thank you for your attention!**

<http://eurisco.ecpgr.org>