



GOVERNO DE
PORTUGAL

MINISTÉRIO DA AGRICULTURA
E DO MAR

DIREÇÃO REGIONAL DE AGRICULTURA E PESCAS
DO NORTE



ISOPlexis
Banco de Germoplasma



Implementation of a PGR Global Documentation system in Portugal

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Cambridge, June 19, 2014



ENHANCED GENEPOOL UTILIZATION – Capturing wild relative and landrace diversity for crop improvement
Cambridge, UK, 16–20 June 2014





Genetic resources

Genetic resources conservation programmes generate a large amount of data.

Thus, the need for a storage and retrieval system that integrates the data

- from surveys
- collecting and conservation work
- related research activities, namely morphological and agronomical evaluation
- molecular and biochemical characterization and
- nutritional analysis,

Allowing for a proper management and facilitating access to genetic material, related data and information.



Genetic resources

Conservation of landraces and crop wild relatives, ensures that genetic resources needed to adapt and enhance agriculture and remain available for future generations.

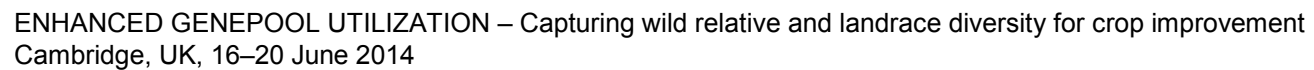
However to improve their availability good information management and supporting policies, are needed, so that the global community can access and use diversity to provide sustainable farming solutions.





The map shows the administrative regions of Portugal. The Norte region is highlighted in blue and includes cities like Porto, Braga, and Guimarães. The Centro region is orange, Lisboa is green, Alentejo is red, and Algarve is purple. The Azores (Açores) and Madeira are shown as separate islands. An arrow points to the location of the study area in the Norte region, near the city of Porto.

Isoplexis _____
Funchal



BPGV and ISOplexis Genebanks, agreed to implement the new documentation system - GRIN-Global (GG) as their genebank platform.



This system is a free flexible, easy-to-use plant genetic resources information management system, that enables genebanks to either set the system individually or in a network setup.

Guarantees a high quality management system and also

Includes a web publishing site where in one go the collection will deliver information globally.

Collecting Missions



Collecting Missions



Medium and Long term conservation





Allium sativum L. (319 accessions)



Humulus lupulus L . (105 accessions)



In vitro Conservation



Phenotypic Characterization





Traditional Knowledge



1977

Collections	Total
Cereals	27 086
Fibers	201
Forrages	2 928
Grain legumes	6 841
Medicinal and Aromatic Plants	1 257
Vegetables	6 417
Other species	22
Total	44 752



1996

Collections	Total
Cereals	719
Forrages	121
Fruits	37
Grain Legumes	734
Medicinal and Aromatic Plants	47
Oil crops	41
Ornamentals	63
Vegetables	653
Other species	57
Total	2 472



System evaluation training

First training session to become familiar with the tool - 2011

Braga

June 06 - 10

Funchal

June 13 - 17



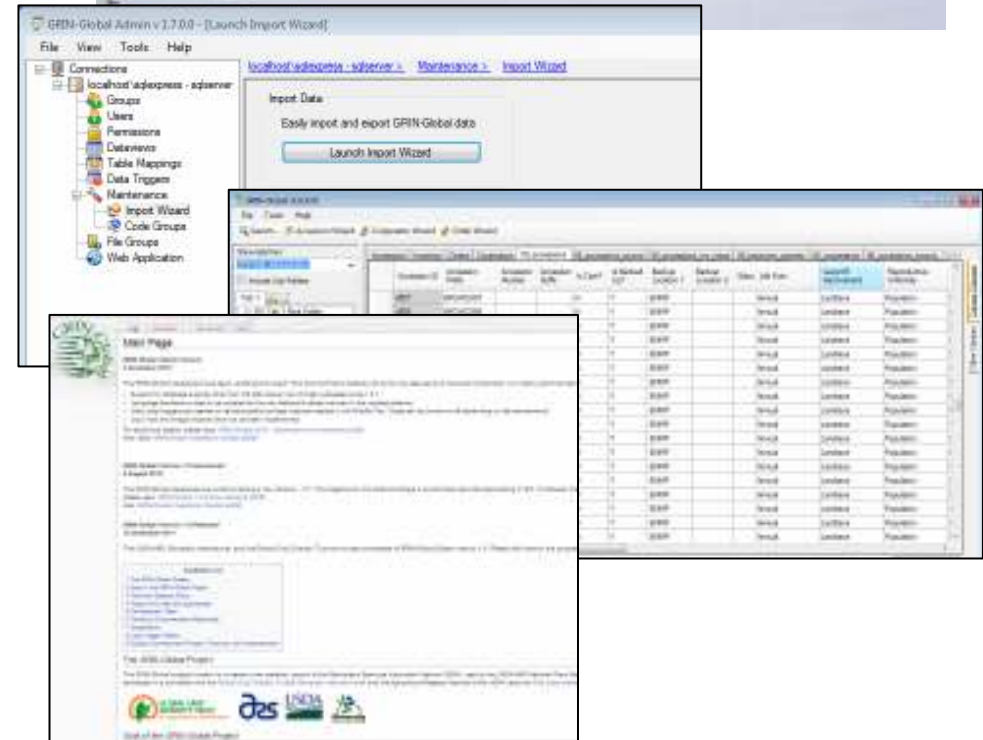
Evaluation of system capacity to the genebanks needs



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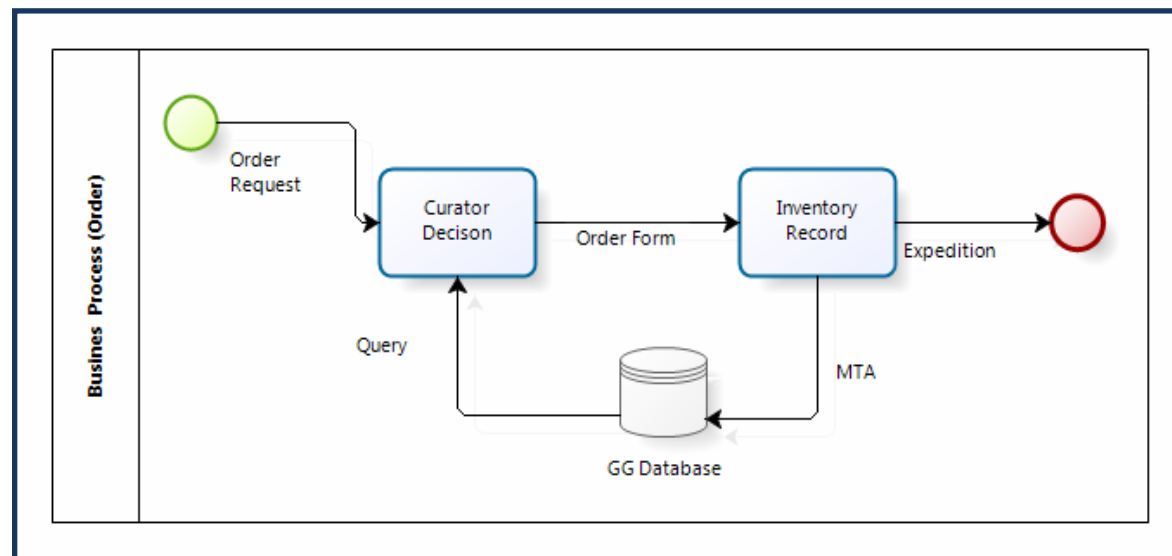
http://www.grin-global.org/index.php/Main_Page



Functionality analysis

Analysis of procedures in the genebanks - BPGV and ISOplexis

- Business Concepts (Taxonomy, Accession, Collection, Curator, Passport, ...)
- Actual Data Base (Organized by species, File Maker and Excel)
- Business Process



Implementation decision

Reasoning for the implementation

- Created by USDA/ARS, with Bioversity International that coordinated testing and feedback from the international genebank community
- Royalty free, it can be world-wide, permission to use, to copy and/or modify

Result analysis and decision

Main functionalities supports the BPGV and Isoplexis needs

A Genetic Resources and Informatics Developers TEAM was put together for this purpose



Implementation decision

- Building preliminary data: code groups (codes for active and base collection), cooperators and taxonomy
- Initial tests performed with a sample of 40 Accessions
- Validation of the imported information
- Corrections in de script files
- Load all the accession's passport and inventory data

Family *	Author Name	Subfamily	Tribe	Subtribe	Genus *	Genus Authority	Subgenus
Poaceae	Banhart, noni. c...	Poideae	Titiceae		Aeglops	L.	
Poaceae	Banhart, noni. c...	Poideae	Titiceae		Aeglops	L.	
Poaceae	Banhart, noni. c...	Poideae					
Poaceae	Banhart, noni. c...	Poideae					
Poaceae	Banhart, noni. c...	Poideae					
Poaceae	Banhart, noni. c...	Poideae					
Poaceae	Banhart, noni. c...	Poideae					
Amaryllidaceae	J. St.-Hil., noni. c...	Alloideae					
Amaryllidaceae	J. St.-Hil., noni. c...	Alloideae					
Amaryllidaceae	J. St.-Hil., noni. c...	Alloideae					
Amaryllidaceae	J. St.-Hil., noni. c...	Alloideae					

Group Value *	Value *	Orig *	Description
COLLECTION_TYPE	BASE	Base Collection	
COLLECTION_TYPE	FIELD	Field Collection	
COLLECTION_TYPE	INVITRO	In-Vitro Collection	



Implementation decision

Indexing of data

- Design base files, in excel, for gathering the existing passport and inventory data
- Creation of script files, in “excel” and “txt”, to transform the data, from the base files to the import wizards tools format
- Developing views, in Admin Tool, to use in Curator Tool

Base File

	A	B	C	D	E	F
1	INSTCODE	ACCNUMB	GENUS	SPECIES	SPAUTHOR	COLLNAM
2	PRT001	00512 - BPGV	Phaseolus	Phaseolus vulgaris	L.	Miguel Mot
3	PRT001	00513 - BPGV	Phaseolus	Phaseolus vulgaris	L.	Miguel Mot
4	PRT001	00514 - BPGV	Phaseolus	Phaseolus vulgaris	L.	Miguel Mot
5	PRT001	00517 - BPGV	Phaseolus	Phaseolus vulgaris	L.	Miguel Mot
6	PRT001	00519 - BPGV	Phaseolus	Phaseolus vulgaris	L.	Miguel Mot

Import File

	A	B	C	D	E	F	G
1	taxonomy_taxon	taxonomy_name	authority	accession_number	pan	accession_number	accession_number
2	Phaseolus vulgaris	L.		BPGV00512		N	An
3	Phaseolus vulgaris	L.		BPGV00513		N	An
4	Phaseolus vulgaris	L.		BPGV00514		N	An
5	Phaseolus vulgaris	L.		BPGV00517		N	An
6	Phaseolus vulgaris	L.		BPGV00519		N	An
7	Phaseolus vulgaris	L.		BPGV00522		N	An

00512-BPGV
BPGV00512



Result analysis

Log in for returning member. Don't have an online account? [Register Now](#)

Banco Português de Germoplasma Vegetal

Search Accessions Search Taxonomy View Cart Reports My Account Help

Choose language English

Home Page Search Accessions General

Query Criteria:
Search String: Zea mays

Search For: Zea mays

Search Options Advanced Search

Actions...

Select: All None Inverse Highlighted Options: Show 25 items <<< 276 - 300 >>>

Group By:	Plant Name	Taxonomy	Origin
Plant ID			
<input type="checkbox"/> BPGV00276	Milho branco	Zea mays	Portugal, Braga
<input type="checkbox"/> BPGV00277	Milho branco	Zea mays	Portugal, Braga
<input type="checkbox"/> BPGV00278	Milho amarelo	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00279	Milho branco amarelado	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00280	Milho branco	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00281	Milho branco párdia	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00282	Milho branco	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00283	Milho branco párdia	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00284	Milho branco amarelado	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00285	Milho branco pago	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00286	Milho amarelo	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00287	Milho branco párdia	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00288	Milho amarelo	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00289	Milho branco	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00290	Milho branco	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00291	Milho moreno	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00292	Milho amarelo	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00293	Milho branco párdia	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00294	Milho moreno	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00295	Milho branco párdia	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00296	Milho amarelo	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00297	Milho branco	Zea mays	Portugal, Viana do Castelo
<input type="checkbox"/> BPGV00298	Milho branco	Zea mays	Portugal, Viana do Castelo

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Search For: Zea mays

Search Options Advanced Search

Actions...

Select: All None Inverse Highlighted Options: Show 25 items <<< 276 - 300 >>>

BPGV00276

Zea mays L.

Collected from: Braga Portugal

Maintained by: Banco Português de Germoplasma Vegetal, INIAV, I.P.

NPGS received: 17-Oct-1978

Plasmid: 1978

Backup location: Bioscience International

Life form: ANNUAL

Pedigree:

Improvement status: LANDRACE

Reproductive uniformity: POPULATION

Form received: Seed

Accession names and identifiers

Type:	Local name
Group:	Cereals
Cooperator:	Banco Fátima, São Paulo, Eliseu Balthazar, E. Bernardino, (Choler Da FAO), BPGV e EAH

Narrative

Milho palha média. Presença de milho rei - Backup n.º

Source History

- Accession was collected: 17-Oct-1978: Braga Portugal
- Locality: Abaceros Habitat: Undulata Abaceros, Prado S. Miguel - Via Verde Latitude: 41 deg. 40 min. 50 sec. West (-8.51066667) Longitude: 8. Elevation: 190 meters
- Collector: 1. Bruno Fátima, São Paulo, Eliseu Balthazar, E. Bernardino, (Choler Da FAO), BPGV e EAH
- Comment: COLLEUM: 41978
- Accession was offered: 17-Oct-1978: Portugal
- Supported by: 1. Unidentified Anticultures

Log in for returning member. Don't have an online account? [Register Now](#)

Banco Português de Germoplasma Vegetal

Search Accessions Search Taxonomy View Cart Reports My Account Help

Choose language English

Home Page Search Accessions General

Query Criteria:
Search String: Zea mays

Search For: Zea mays

Search Options Advanced Search

Actions...

Select: All None Inverse Highlighted Options: Show 25 items <<< 276 - 300 >>>

Accession for Zea mays L.

BPGV00276 (Mapped accessions = 1681)

Google

Legend


- 1 accession
- 2-5 accessions
- 6-10 accessions
- 11-100 accessions
- > 100 accessions



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Result analysis



ISO Plexis

Banco de Germoplasma

GRIN-Global v1.0.7.0

No items in cart [Contact Us](#)

Search | Taxonomy | View Cart | My Account

GRIN-Global v1.0.7.0

file Help

Search... Accession Wizard Cooperator Wizard Order Wizard

Genus: Triticum

Section: Triticum

Family: Poaceae

Subfamily: Pooidae

Tribe: Triticeae

Nomen number: 40544

Comment: [or *T. aestivum* Aestivum Group]

Name Verified on: 20-Mar-1998

Last Changed: 07-Oct-2008

Species priority site is:

Accessions: 26 in National Plant Germplasm System

Show lists from:

Nidreya, Humberto, ISOPhoto Gen

ISOPT(1) | ISOPT | ISOPT 1

- ISOPT 104
- ISOPT 105
- ISOPT 106
- ISOPT 107
- ISOPT 108
- ISOPT 109
- ISOPT 11
- ISOPT 110
- ISOPT 111
- ISOPT 112
- ISOPT 113
- ISOPT 114
- ISOPT 115
- ISOPT 116
- ISOPT 117
- ISOPT 118
- ISOPT 119
- ISOPT 12
- ISOPT 120
- ISOPT 121
- ISOPT 122
- ISOPT 123
- ISOPT 124
- ISOPT 125
- ISOPT 126
- ISOPT 128
- ISOPT 129
- ISOPT 13
- ISOPT 130
- ISOPT 131
- ISOPT 132
- ISOPT 133
- ISOPT 134

Accession ID	Accession Prefix	Accession Number	Accession Suffix	Taxon	Accession Name	Origin	Maintenance Site	to C
372	ISOP	405		Zea mays subsp. mays	Milho VPS (N1586)		SYS	N
373	ISOP	407		Zea mays subsp. mays	Milho 632A (N1586)		SYS	N
374	ISOP	408		Zea mays subsp. mays	Milho W22		SYS	N
375	ISOP	409		Zea mays subsp. mays	Milho B37		SYS	N
376	ISOP	410		Zea mays subsp. mays	Milho A68		SYS	N
377	ISOP	411		Zea mays subsp. mays	Milho A71		SYS	N
378	ISOP	412		Zea mays subsp. mays	Milho W64A		SYS	N
379	ISOP	413		Zea mays subsp. mays	Milho A138		SYS	N
380	ISOP	414		Triticum aestivum	Tingo Maringa		SYS	N
381	ISOP	427		Triticum aestivum	Tingo Kattapa		SYS	N
382	ISOP	428		Zea mays subsp. mays	Milho Amarello		SYS	N
383	ISOP	429		Zea mays subsp. mays	Milho Amarello		SYS	N
384	ISOP	430		Zea mays subsp. mays	Milho Amarello		SYS	N
385	ISOP	432		Lycopersicon esculentum	Toante (Lagotina)		SYS	N
386	ISOP	433		Triticum aestivum	Tingo Almat		SYS	N
387	ISOP	434		Triticum turgidum	Tingo Avonlea		SYS	N
388	ISOP	435		Triticum aestivum	Tingo Chinese Spring		SYS	N
389	ISOP	436		Triticum aestivum	Tingo Atlas		SYS	N
390	ISOP	437		Zea mays subsp. mays	Milho Dai Tera		SYS	N
391	ISOP	438		Arabis alpina	Arabis Alpina Subsp. Caucasica		SYS	N
392	ISOP	440		Zea mays subsp. mays	Milho Dai Tera		SYS	N
393	ISOP	441		Phaseolus vulgaris	Feijão Branco		SYS	N
394	ISOP	442		Phaseolus vulgaris	Feijão Vassoura		SYS	N
395	ISOP	443		Phaseolus vulgaris	Feijão Touquinho		SYS	N

Other conspecific taxa:

- Triticum aestivum (33 accessions)
- Triticum aestivum subsp. compactum (7 accessions)
- Triticum aestivum subsp. macha (0 accessions)
- Triticum aestivum subsp. spelta (0 accessions)
- Triticum aestivum subsp. sphaerococcum (0 accessions)
- Triticum aestivum subsp. tibeticum (0 accessions)
- Triticum aestivum subsp. yunnanense (0 accessions)

Common names:

- bread wheat (Source: Dict Rehm)
- froment (Source: Dict Rehm)
- wheat (Source: World Econ Pl)
- Weizen (Source: Dict Rehm)
- trigo (Source: Dict Rehm)
- blé ordinaire (Source: Dict Rehm)
- Saatweizen (Source: Dict Rehm)
- trigo candeal (Source: Dict Rehm)
- trigo blando (Source: Dict Rehm)
- komugi (Source: Names.Batra)
- xiao mai (Source: F.ChinaEng)
- trigo (Source: Dict Rehm)

References:

-

Synonyms:

Planning next steps

Proposal and Suggestions for new functionalities



- Include decimal values in sample quantity (already implemented by our suggestion)
- To build a migration tool for version upgrade
- Develop “specific forms”, supported in the GG tables, to manage accessions stocks (inputs and outputs) in the different conservation conditions and collections.

Conclusions

Portugal

has decided to implement this system, as it provides the opportunity to increase,

- data quality and availability
- long term sustainability for data and collections curation,
- integrate all collections and information in one management system, optimizing the costs and staff resources allocated to these genebanks.





Thank you for your kind attention

