

Plant Genetic Resources and Information System in the Czech Republic

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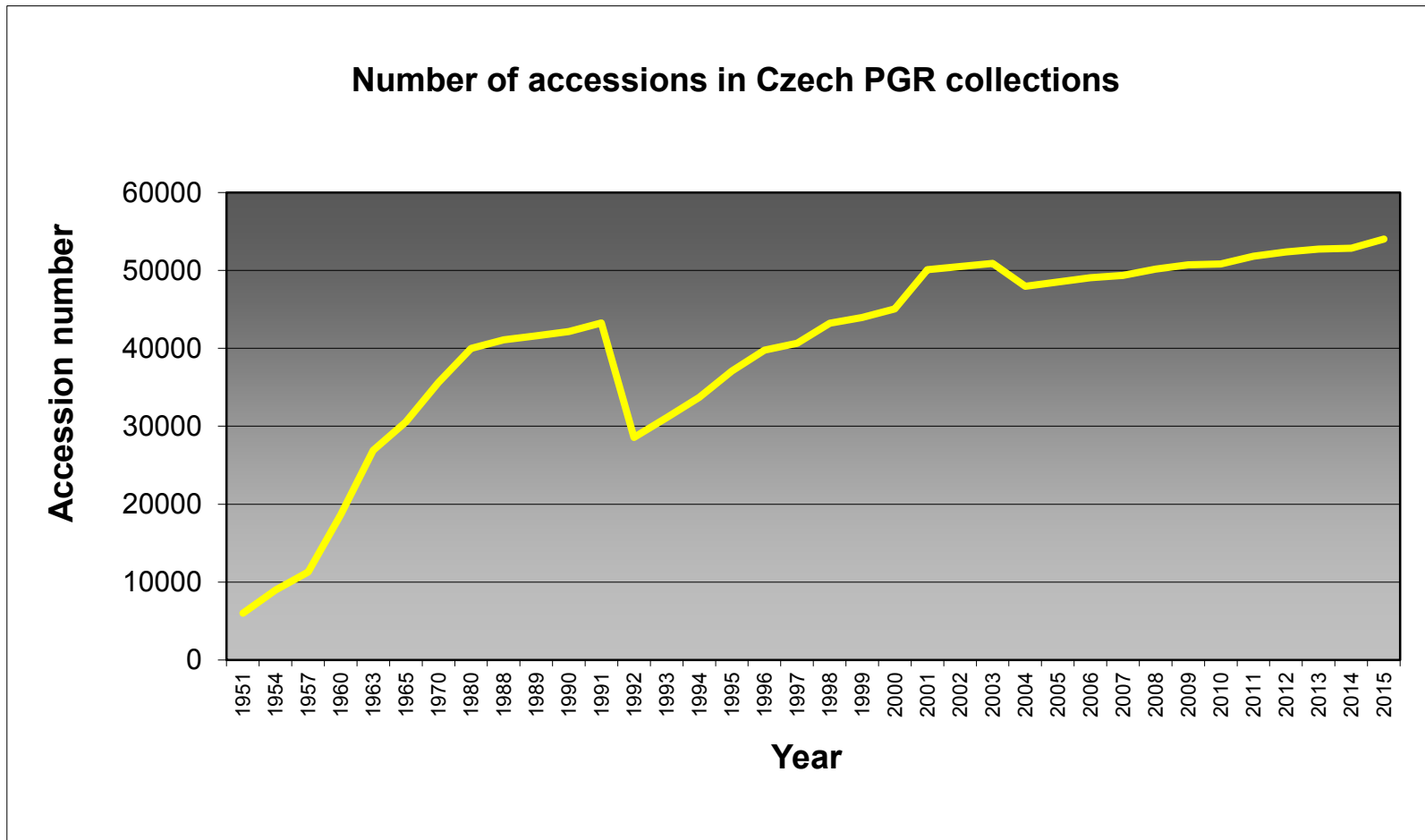


Plant Genetic Resources in the Czech Republic

- **Tradition since the beginning of the 20th century (breeding and research stations maintained local landraces and bred European cultivars)**
- **Crop research institutes founded around 1950; took over responsibility on PGR collections**
- **Fast increase of collections during 1960 - 1980 (linked to the progress in local breeding)**
- **Czech National Programme on PGR established in 1993**
- **National legislation on PGR Act no.148/2003 (an amendment in 2013)**

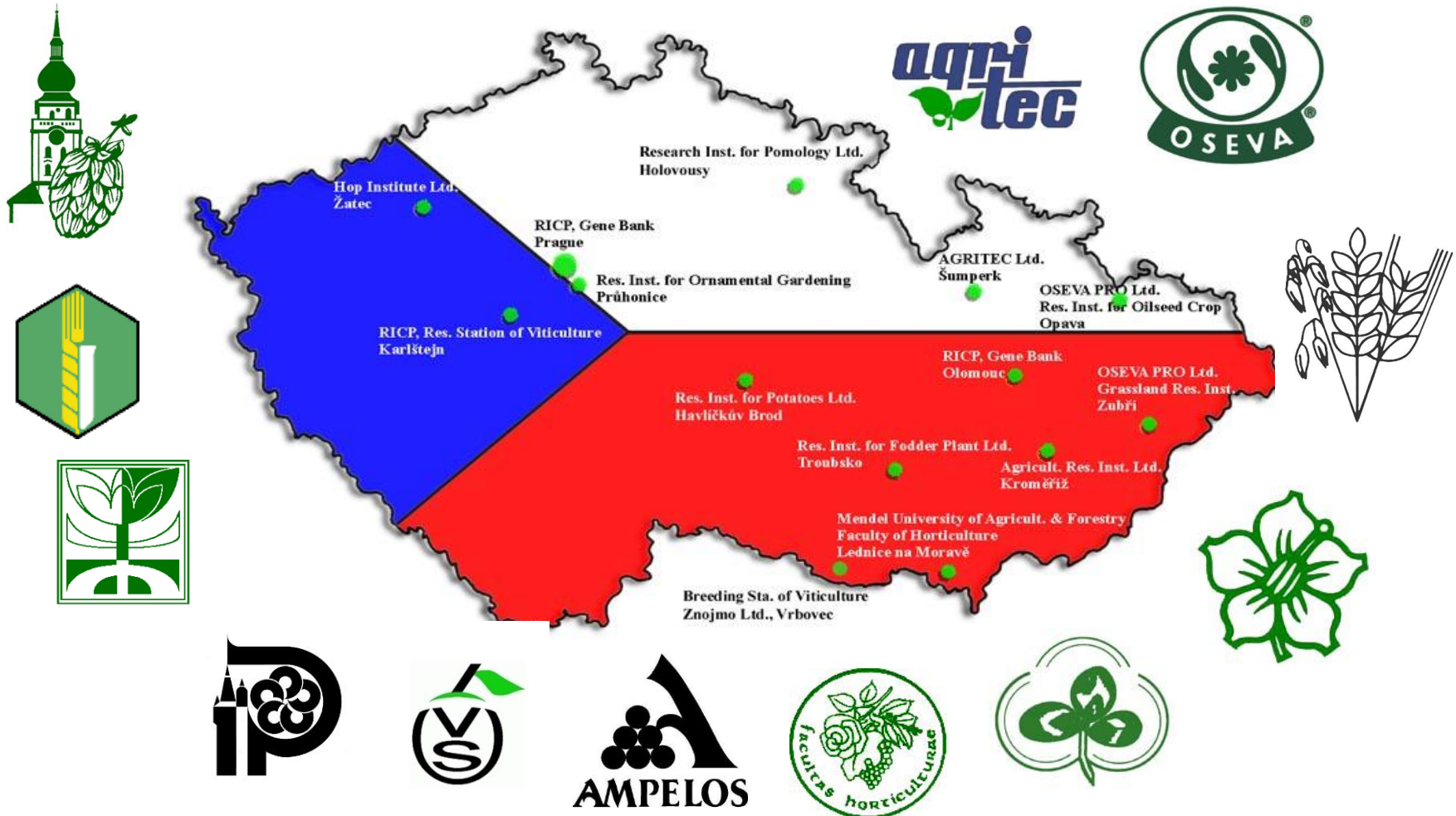
Plant Genetic Resources in the Czech Republic

Increase of the Czech PGR collections (1951-2015)



Plant Genetic Resources in the Czech Republic

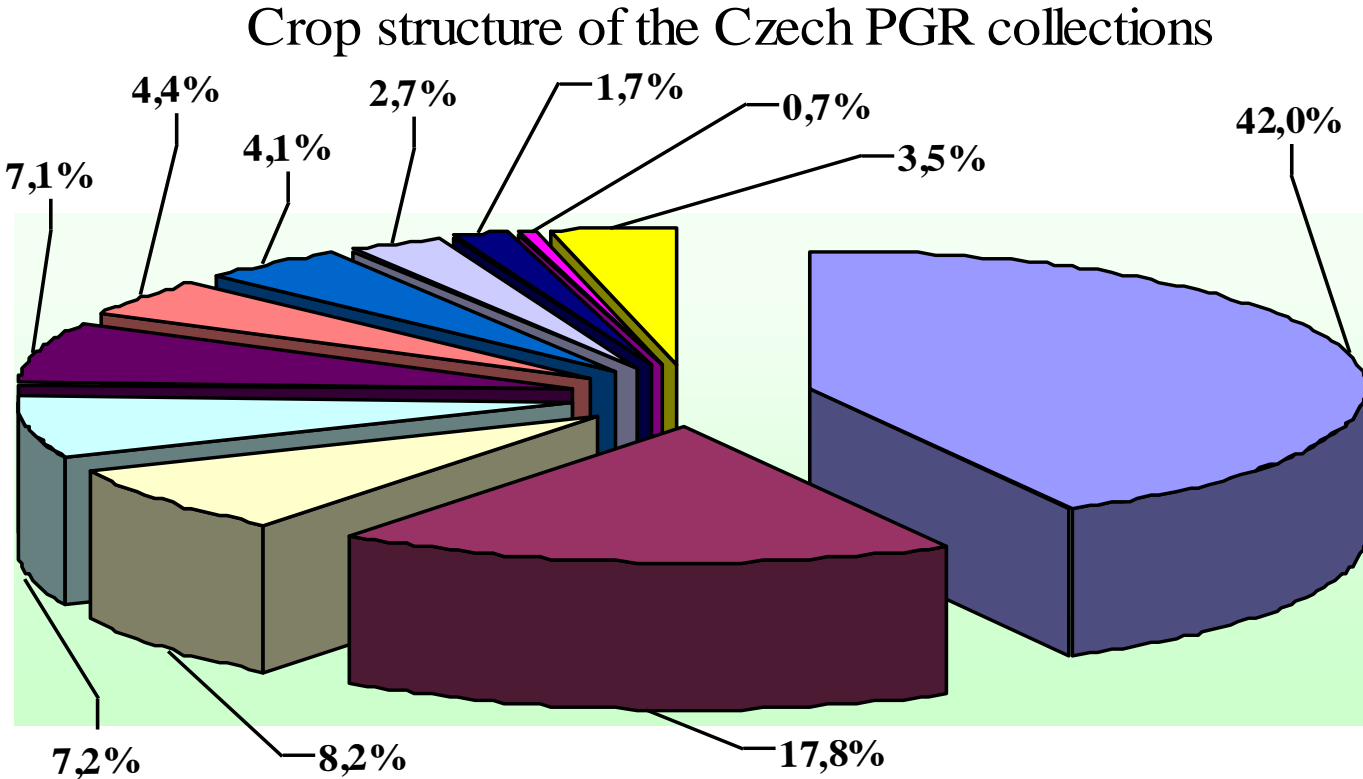
NETWORK OF PGR INSTITUTIONS IN THE CZECH REPUBLIC



Participants to the National Programme (NP)

Institutes/ Workplaces	Collections	Numb. of accessions	Conservation	Aegis
CRI GB Prague	cereals, alternative, neglected and other crops vegetables, medicinal and spicy plants	17 264	seed bank GB, cryo bank	Yes
CRI CARV Olomouc		10 236	field bank	Yes
CRI VRS Karlstejn	vine	274	field bank, in vitro	Yes
ARI Kromeriz	selected cereals	5 833	provided by GB	Yes
AGRITEC Sumperk	legumes and fibre crops	5 074	provided by GB	Yes
PRI Havlickuv Brod	potatoes	2 539	in vitro bank	Yes
OSEVA GRS Zubri	grasses	2 387	provided by GB	Yes
OSEVA RIOC Opava	oil crops	1 410	provided by GB	No
RBIP Holovousy	fruit crops	2 334	field bank, cryo bank, on farm	Yes
MENDELU Lednice	selected fruit crops, vine, other crops	1 501	field bank	Yes
RIFC Troubsko	fodder plants	2 396	provided by GB	Yes
HRI Zatec	hop	346	field bank, in vitro	No
RILOG Pruhonice	ornamental plants	1 848	field bank, in vitro	No
AMPELOS Znojmo	vine	286	field bank	Yes
IBASCR Pruhonice	selected ornamental plants	524	field bank	No
		54 252		

Crop structure of the Czech PGR collections



- | | | | |
|------------------|------------|--------------|-----------|
| Cereals | Vegetables | Fodder Crops | Legumes |
| Fruit Plants | Potatoes | Ornamentals | Oil Crops |
| Medicinal Plants | Hop | Others | |

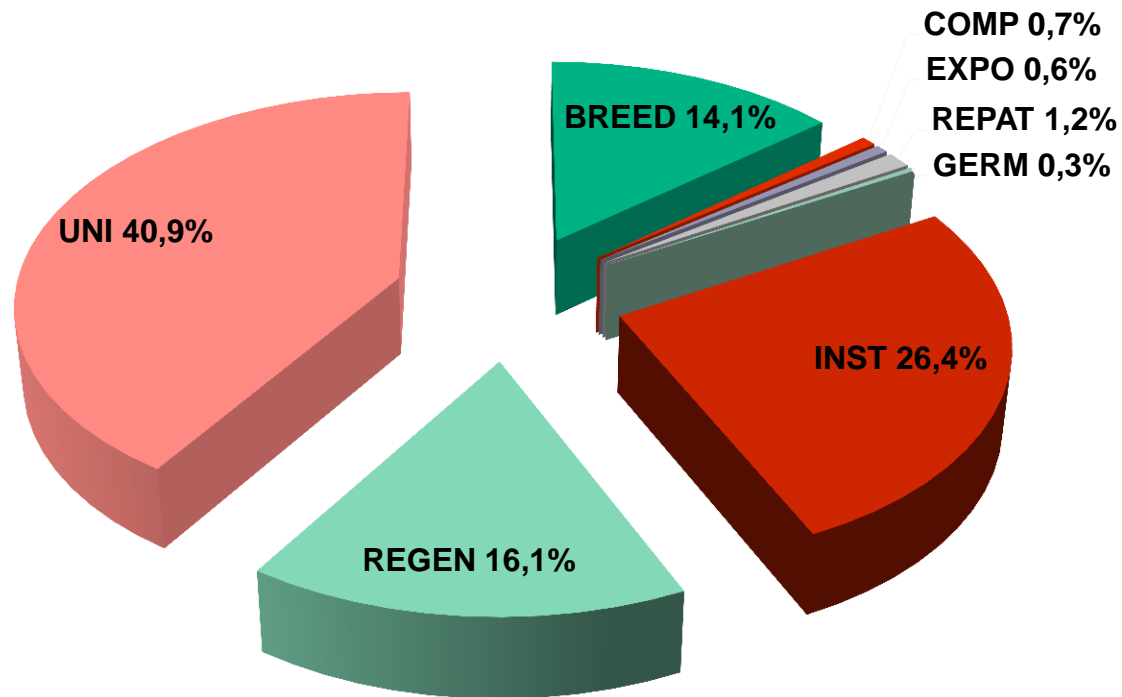
Diversity of species within the Czech NP

Czech NP maintains 1250 plant species belonging to 411 genera

Genetic Resources	Genus	Species
Aromatic and medicinal plants	71	164
Beta and other seed root crops	1	2
Cereals	27	176
Flowers	112	179
Rhododendron, Rosa	2	34
Fruit woody plants	17	60
Grasses	63	169
Vegetables	33	155
Food legumes	9	65
Miscellaneous, spec. of flowering meadows	19	30
Oil plants	9	15
Potatoes	1	18
Fodder plants	28	114
Grape	1	9
Ornamental woody plants (leafy)	2	16
Industrial plants	4	9
Zea and alternative cereals	12	35
Total	411	1250

Distribution of PGR samples to users

ca 3 000 samples per year to users (under SMTA)



PGR documentation in the Czech collections

- **Passport standards - coding tables (ISO 3166 ext. country code, FAO Instcode, MCPDL standards) international level**
- **Descriptor lists for characterization and evaluation – national/European level (36 descriptor lists)**
- **Genebank storage standards – genebank level**
documentation as detail as possible – ISO 9001:2009
- **Other specific data modules: quality data, molecular markers, NIRS spectra, etc.**

PGR documentation in the Czech collections

Institutes/ Workplaces	PGR documentation		
	Passport	Characterisation	% Evaluated PGR
CRI GB Prague	17 264	10 442	60,5
CRI CARV Olomouc	10 236	4 732	46,2
CRI VRS Karlstejn	274	153	55,8
ARI Kromeriz	5 833	5 598	96,0
AGRITEC Sumperk	5 074	4 057	80,0
PRI Havlickuv Brod	2 539	1 500	59,1
OSEVA GRS Zubri	2 387	1 693	70,9
OSEVA RIOC Opava	1 410	1 226	87,0
RBIP Holovousy	2 334	1 420	60,8
MENDELU Lednice	1 501	691	46,0
RIFC Troubsko	2 396	1 271	53,0
HRI Zatec	346	337	97,4
RILOG Pruhonice	1 848	1 490	80,6
AMPELOS Znojmo	286	165	57,7
IBASCR Pruhonice	524	431	82,3
Total	54 252	37 276	
		68.7 %	

1 001 124 traits (aprox. 26 traits per accession)

PGR documentation in the Czech collections

2015 New documentation system - GRIN-Czech



- Agricultural Research Service of the United States Department of Agriculture (USDA-ARS)
- On-line access for the network of cooperating institutions and curators of plant collections

<https://grinczech.vurv.cz/gringlobal/search.aspx>

A screenshot of the GRIN Czech 1.9.1 website interface. The page features a navigation menu with links for 'Search Accessions', 'Search Taxonomy', 'View Cart', 'Reports', 'My Account', and 'Help'. A search bar is present with the text 'Vlasta' entered and a 'Search' button. The footer contains logos for the Global Crop Diversity Trust, Bioversity International, ARS, USDA, and Crop Research Institute, along with a 'View disclaimer' link.

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01C0105610

Triticum aestivum L. subsp. aestivum

'Vlasta'

Origin from:	Czech Republic
Maintained by:	Crop Research Institute, Gene Bank
Received:	1995
PI assigned:	16-I-1996
Growth class:	winter
Backup location:	Research Institute of Plant Production
Life form:	Annual
Pedigree:	Hana//Brimstone/S 13;
Improvement status:	Advanced/improved cultivar
Reproductive uniformity:	
Form received:	Seed


Status:	Available
Amt Distributed:	5 gram
Type Distributed:	Seed

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Observations for accession 01C0105610

Characterization and Evaluation Data:

Descriptor	Value	Study/Environment	Inventory ID
CHEMICAL Descriptors			
092 Grain - starch content (Evers method)	4 - low-intermediate 62,1-64%	2012 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production	
095 Grain - crude protein content	5 - medium 12,7-13,8 %	2012 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production	
102 Groats - sedimentation (SDS)	7 - good 5,1-7,0 ml	1998 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (8)	
CYTOLOGIC Descriptors			
202 Presence Rht2 gene	1 - present	2002 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (17)	
DISEASE Descriptors			
058 Powdery mildew - plant - resistance	7 - high (high-resistant)	2012 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production	
060 Stripe rust - resistance	6 - medium (medium resistant) - high (high-resistant)	2002 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (17)	
061 Brown rust - resistance	5 - medium (medium resistant)	2008 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (2)	
062 Stem rust - resistance	3 - low (sensitive)	2002 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (17)	
GROWTH Descriptors			
001 Plant - tuft shape (at tillering)	5 - drooping 41-55°	2002 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (17)	
003 Plant - height	5 - medium 81- 95 cm	2012 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production	
075 Stand - number of spikes	4 - 351-450 /m2	2002 Genebank Dept.-Div. Genet. & Plant Breed.- Res. Inst. Crop Production (17)	

Thank you for your attention!

