

The Grain Legume collection in Austria

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Since the last report presented in 2001 in Krakow (R. Schachl and W. Kainz 2001), only few things can be added.

Collections:

All activities with conservation of plant genetic resources in Austria are coordinated within the framework of the National Programme for Conservation of Plant Genetic Resources for Food and Agriculture. In Austria there are three public institutes and one NGO working on Grain Legumes:

Holders:

- AUT001 Austrian Agency for Health and Food Safety, Linz
- AUT005 Genebank Tyrol, Innsbruck
- AUT025 Institute of Special Crops, Agricultural Research Center Styria, Wies
- AUT047 Arche Noah Association, Schiltern

The size of the Grain Legume collections maintained in Austria have reached by now 1.210 accessions of *Phaseolus*, *Pisum*, *Glycine*, *Lens*, *Cicer*, *Lathyrus*, *Vicia* and *Vigna*.

Species	No. of accessions	% of total	Long term collection	Short term collection
<i>Phaseolus</i>	938	77.6	674	264
<i>Pisum</i>	120	10.0	72	48
<i>Vicia</i>	86	7.1	66	20
<i>Glycine</i>	42	3.5	42	-
<i>Lathyrus</i>	13	1.0	2	11
<i>Cicer</i>	4	0.3	4	-
<i>Vigna</i>	4	0.3	4	-
<i>Lens</i>	3	0.2	1	2
Total	1210	100	865	345

Research work carried out on this germplasm is characterization and evaluation. Passport data are available at 100 %, characterization and evaluation data at a lower amount.

The collections of *Phaseolus*-beans, which are the main part consist mainly of landraces and where collected in Austria in the 1980ies in cooperation with the genebank Gatersleben. The other collections of grain legumes consist mainly of cultivars of European origin due to the small amount of breeding work on grain legumes (i.e. *Vicia faba* and *Pisum sativum*).

There is a cooperation within the AGES that the breeder's standard samples of varieties which are deleted from the national variety list and so far of agricultural value for Austria are moved to the genebank in Linz for further maintaining as MOS (most original sample).

Core collections

No actions had been taken on the plans to develop core collections for Grain Legumes due to the small collections.

Registered varieties:

Number of listed grain legume varieties in Austria (2007):

Crop	Number
<i>Pisum sativum</i>	34
<i>Glycine max</i>	27
<i>Vicia sativa</i>	9
<i>Vicia faba</i>	7
<i>Phaseolus sp.</i>	6
Total	83

Breeding activities:

In Austria national list trials are carried out for field beans (10 varieties), peas (20 varieties) and soybeans (23 varieties; maturity group 00 and 000). Soybean varieties with 000-maturity are cultivated in Upper Austria and the western part of Lower Austria. 00-varities are sown in the warmer Eastern part of Lower Austria, Burgenland and in the illyric climate regions of Styria. As for field peas with field trials in dry and more humid regions test results give hints that some varieties are more adapted to drier growing conditions than others and the other way round.

For field beans and soybeans there exists one Austrian breeding firm, Saatzucht Gleisdorf in Styria. Foreign (non Austrian) soybean and pea varieties are applied for registration by Austrian representatives.

Tab. 1: Agricultural production of grain legumes in Austria

Year	Field pea		Field bean		Soy bean	
	Cultivated area in ha	Yield dt/ha	Cultivated area in ha	Yield dt/ha	Cultivated area in ha	Yield dt/ha
1995	19 133	31,5	6 886	24,7	13 669	22,8
2000	41 114	23,5	2 952	24,1	15 537	21,1
2003	42 097	22,1	3 465	26,8	15 463	25,5
2005	36 037	25,0	3 549	28,8	21 429	28,3
2006	32 652	27,5	4 555	26,9	25 013	26,0

Source: Statistik Austria

On farm preservation:

There is a programme in Austria for an environment-saving agricultural production (OePUL-Programme) to save and to use traditional cultivars and landraces. Unfortunately there are only three genus of legumes listed:

One landrace of *Trifolium pratense*, one of *Trigonella caerulea* and two varieties of *Phaseolus vulgaris* are funded for cultivation at a limited area.

Characterization:

The samples are planted at an area of 2 to 5 m², depending on the crop. Characterization and screening for main traits (morphological, ecological and agronomic) are being continuously ongoing. All traits are evaluated according to international descriptors lists, mainly UPOV descriptors are used for cultivars.

Storage:

The grain legume accessions are stored in the base collection at -20°C and the active collection at +15°C after drying to 5-10 % moisture (FAO/IPGRI 1994).

Following the recommendations of Prof. Gomez-Campo of the University Madrid we started to dry below 5% r.h. to come at least near to an Ultra-dry-seed-preservation with good results in the mean time even for the active collection at +15° C.

References:

Report of a Working Group on Grain Legumes. Third Meeting 5-7 July 2001, Krakow, Poland (L. Maggioni, M. Ambrose, R. Schachl, G. Duc, E. Lipman compilers). International Plant Genetic Resources Institute, Rome, Italy.

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