

Key access and utilization descriptors for *Lathyrus* spp. genetic resources

This list consists of an initial set of characterization and evaluation descriptors for *Lathyrus* utilization. This key set of strategic descriptors, together with passport data, will become the basis for the global accession-level information system being developed by the Bioversity-led project, Global Information on Germplasm Accessions (GIGA). It will facilitate access to and utilization of *Lathyrus* accessions held in genebanks, and does not preclude the addition of further descriptors, should data subsequently become available.

Based on the comprehensive list of 'Descriptors for *Lathyrus* spp.' (IPGRI, 2000), the set was developed in consultation with *Lathyrus* experts worldwide, and further refined by a Core Advisory Group (see 'Contributors') led by Dr Prem Mathur of Bioversity International.

Biotic and abiotic stresses included in the list were chosen because of their cosmopolitan nature, wide geographical occurrence and significant economic impact.

The numbers in parentheses on the right-hand side are the corresponding descriptor numbers as published in 'Descriptors for *Lathyrus* spp.' (IPGRI, 2000). Descriptors with numbers ending in 'X' are new descriptors that were added during the revision of the original publication.

Seedling vigour (7.1.3)

Recorded 20 days after emergence

- 3 Poor
- 5 Intermediate
- 7 Vigorous

Plant growth habit (7.1.6)

Recorded at the beginning of flowering period

- 1 Prostrate
- 2 Spreading
- 3 Semi-erect
- 4 Erect

Plant height [cm] (7.2.1)

Height of plant at physiological maturity measured from ground to the tip of the longest branch

Number of primary branches (7.3.2)

Counted at first pod maturity (only pod-bearing branches)

Days to 50% flowering [d] (7.6.2)

Number of days from sowing to stage when 50% of plants have begun to flower in a row

Days to maturity [d] (7.6.4)

From sowing to when 80% of plants have mature pods

Flower colour (7.6.12)

Score on fresh, open flowers for score standard, wing and keel colours separately

- 1 White
- 2 White blue
- 3 Blue
- 4 Grey
- 5 Light yellow
- 6 Yellow
- 7 Pink
- 8 Orange
- 9 Red
- 10 Violet–blue
- 11 Violet
- 99 Other (specify in descriptor **Notes**)

Pod-bearing position [cm] (7.6.19)

Recorded as height to the lowest pod

Number of pods per plant (7.7.2)

Mean number of pods. Recorded from randomly selected plants at physiological maturity.

Number of seeds per pod (7.7.16)

Mean number of seeds counted on randomly selected pods. Recorded at physiological maturity.

Pod dehiscence (7.7.17)

Scored one week after maturity

- 0 No shattering
- 3 Low shattering
- 5 Medium shattering
- 7 High shattering

Seed coat colour	(7.8.3)
1 Greyed–white	
2 Yellow–white	
3 Grey	
4 Brown	
5 Yellow–green	
6 Pink	
7 Red–purple	
8 Black	
9 Grey mottled	
10 Green mottled	
99 Other (specify in descriptor Notes)	
100-seed weight [g]	(7.8.10)
Weight of 100 randomly selected mature seeds at 8–10% (air-dry) seed moisture content	
Harvest index [%]	(8.1.6)
Ratio of total grain to total biological yield taken from randomly selected plants in a row	
Seed crude protein content [g/100 g DW]	(8.2.1)
β-N-Oxalyl-L-α, β-Diaminopropionic Acid (ODAP) content [%]	(8.2.4)
Estimate ODAP content in dry seeds and any other plant part (specify, such as dry cotyledons, dry embryo, etc.)	
Susceptibility to Bean aphids (<i>Aphis craccivora</i>)	(10.1.1)
Susceptibility to Pod borers (<i>Etiella zinckenella</i>)	(10.1.2)
Susceptibility to Bruchids (<i>Bruchus</i> spp.)	(10.1.4)
Susceptibility to Jassids	(10.1.X)
Susceptibility to Powdery mildew (<i>Erysiphe polygoni</i> f.sp. <i>pisi</i>)	(10.3.1)

Susceptibility to Downy mildew (*Peronospora lathyri-palustris*) (10.3.2)

Susceptibility to Broomrape (*Orobanche* spp.) (10.X.X)

Notes

Any additional information may be specified here, particularly that referring to the category 'Other' present in some of the descriptors above.

CONTRIBUTORS

Bioversity is grateful to all the scientists and researchers who contributed to the development of this strategic set of key access and utilization descriptors for *Lathyrus* genetic resources. The following Bioversity staff contributed to this exercise: Michael Mackay, who provided scientific direction, and Adriana Alercia, who provided technical expertise and guided the whole production process. Special thanks go to Prem Mathur for his scientific advice and guidance on this crop.

Core Advisory Group

Prem Mathur, Bioversity International, Italy

Colin Hanbury, Department of Agriculture and Food, Western Australia

Mamtazul Haque, Bangladesh Agricultural Research Institute, Bangladesh

Ulrike Lohwasser, Leibniz Institute of Plant Genetics and Crop Plant Research, Germany (ECPGR)

R.L. Pandey, Indira Gandhi Agricultural University, India

Kenneth Street, ICARDA, Syria

Reviewers

Algeria

Aïssa Abdelguerfi, Institut National Agronomique (INA)

Australia

Bob Redden, Australian Temperate Field Crops Collection, Department of Primary Industries

Canada

Axel Diederichsen, Plant Gene Resources of Canada, Agriculture and Agri-Food Canada

China

Zong Xuxiao, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences

Czech Republic

Jan Valkoun

India

R.N. Sharma, Indira Gandhi Agricultural University

Russia

Margarita Vishnyakova, Vavilov Institute of Plant Breeding

Spain

Lucia de la Rosa, Centro de Recursos Fitogenéticos – INIA

Marcelino de los Mozos Pascual, Centro de Investigación Agraria de Albaladejito

USA

Molly Welsh, USDA-ARS