Lathyrus germplasm collections directory

P.N. Mathur, A. Alercia *and* **C. Jain,** *compilers*

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Preface

The genus *Lathyrus* is large, with 187 species and sub-species that are found in both the Old World and the New World. However, only one species (*Lathyrus sativus*) is widely cultivated as a food crop, while other species are cultivated to a lesser extent for both food and forage. These species include *L. cicera*, *L. clymenum* and *L. ochrus* for grain but mainly for forage production; *L. tingitanus*, *L. latifolius* and *L. sylvestris* as forage species; *L. odoratus* for ornamental purposes. Several botanical varieties of *L. sativus* and *L. cicera* have been noted in North Africa and the Near and Middle east. These include: var. *albus* (white flower), var. *roseus* (pink or red flowers) and var. *cyaneus* (blue flower) for *L. sativus*; var *genuinus* Rouy, var. *angustifolius* Rouy, var. *longistipulatus* Sennen and var. *ciliatus* Lipsky for *L. cicera*. In addition to these botanical varieties, several native ecotypes have been reported for the genus *Lathyrus*.

The potential of *Lathyrus sativus* (grasspea) as a nutritious pulse with high quality grain and fodder is well recognized in South Asia, Ethiopia and parts of Central, West and North Asia, where other species of this genepool also occur. The local types are tolerant to flood and drought conditions and possesses unique adaptation as a post-rice crop across much of South Asia. Interest in South Asia – India, Bangladesh and Nepal has been primarily to develop low neurotoxin level types in grasspea possessing high yield so that these can be grown as a pulse. In West Asia, there is interest to develop improved *Lathyrus* lines as a fodder legume. These countries thus concerted national efforts and collaboration with international organizations including IDRC, in Canada; ICARDA, in Syria; and CLIMA, in Australia, which have been able to produce varieties and develop a research programme directed towards improvement of grasspea. IPGRI has assisted to catalyse these activities by bringing such countries together to share experiences and also develop a concern on a collaborative approach through a regional network based on *Lathyrus* genetic resources conservation and use. In 1995, IPGRI organised a *Lathyrus* genetic resources workshop in Raipur, India, wherein the participating countries and international organizations recommended that a *Lathyrus* Genetic Resources Network (LGRN) should be considered and IPGRI should take lead to facilitate this network. Accordingly, first group meeting of this network was held at NBPGR, New Delhi, India in 1997. This meeting reviewed several of the activities proposed during the Raipur meeting and reaffirmed the concern and interest of the participating countries and international organizations. Among the agreed activities, priority was assigned to the publication of a Directory and a Descriptor list. Both were considered important in dissemination of information for use of partners. Descriptor for *Lathyrus* Spp. was published by IPGRI during 2000. This Directory of *Lathyrus* germplasm collections is being published using the standard IPGRI format for directories of germplasm collections which contains a standard set of headings for each entry. A template requesting information was circulated to a number of institutes and genebanks and the information collected was formatted and compiled by Dr. P.N. Mathur, Ms. A. Alercia and Dr. C. Jain of the International Plant Genetic Resources Institute.

Users are encouraged to provide feedback to the compilers to improve quality and comprehensiveness in the future editions. It is hoped that the Directory will generate more interest in research and development of *Lathyrus* genetic resources and will promote further the conservation and utilization of this underutilized but important genepool in *Lathyrus* growing areas of Asia and Africa in particular. The compilers would like to thank those who provided information and support to make the directory possible.

Contents

ALGERIA

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Abdelguerfi Aïssa

Details of holdings

Lathyrus annuus (4): Iran (1), Italy (1), United Kingdom (1), Yugoslavia (1)
L. aphaca (31): Afghanistan (5), Australia (6), Belgium (1), Czechoslovaquia (1), France (1), Greece (2), Iran (3), Israel (2), Pakistan (1), Turkey (4), United Kingdom (1), Uruguay (1), former USSR (2), unknown (1)
L. articulatus (1): Tunisia (1)
L. baslaticus (1): Syria (1)
L. cassius (3): Syria (3)
L. chloranthus (1): Iran (1)
L. chrysanthus (1): Syria (1)
L. cicera (45): Algeria (16), Cyprus (1), Greece (3), Hungary (1), Iran (1), Norway (2), Portugal (2), South Africa (1), Spain (9)
L. clymenum (20): Australia (10), Cyprus (1), Italy (1), Portugal (4), Spain (1), Sweden (1), Turkey (1), Yugoslavia (1)
L. digitatus (1): Syria (1)
L. gloeospermus (1): Syria (1)
L. gorgoni (1): Turkey (1)
L. heterophyllus (1): France (1)
L. hierosolymitanus (2): Israel (1), Turkey (1)
L. hirsutus (13): France (1), Romania (1), Russia (2), Tunisia (1), Turkey (2), former USSR (2), United States of America (3), Yugoslavia (1)
L. inconspicuus (11): Iran (2), Turkey (7), former USSR (1), Yugoslavia (1)
L. japonicus (4): Norway (1), United Kingdom (3)
L. laevigatus (1): Yugoslavia (1)
L. laxiflorus (1): Syria (1)
L. marmoratus (2): Syria (2)
L. nissolia (5): Belgium (1), Hungary (1), United Kingdom (2), Yugoslavia (1)
L. occidentalis (1): Syria (1)
L. ochrus (25): Cyprus (9), Germany (1), Greece (1),

India (1), Israel (5), Portugal (6), Tunisia (1), Turkey (1)

L. odoratus (1): Hungary (1)

L. pratensis (8): Germany (1), Hungary (1), Romania (1), Switzerland (1), United Kingdom (4)

L. pseudocicera (3): Syria (3)

L. sativus (234): Afghanistan (19), Algeria (10), Brazil (2), Canada (1), Czechoslovakia (5), Cyprus (18), Egypt (1), Ethiopia (28), France (1), Germany (2), Greece (2), Hungary (8), India (19), Iran (12), Italy (7), Japan (1), Libya (1), Morocco (3), Pakistan (22), Poland (2), Portugal (1), Spain (1), Sudan (1), Syria (13), Tunisia (4), Turkey (30), former USSR (13), United States of America (5), Yugoslavia (1), unknown (1)

L. sphaericus (3): Greece (3)

L. stenophyllus (1): Syria (1)

L. sylvestris (2): France (1), Italy (1)

L. szowitsii (1): Pakistan (1)

L. tingitanus (3): Guatemala (1), Portugal (1), Sweden (1)

Lathyrus sp. (5): Germany (1), Turkey (4)

Indigenous collections: *L. cicera* (10), *L. sativus* (16)

Exotic collections: 437 accessions

Holdings by country of collection: Number of accessions by country of introduction are presented in Table 1.

Table 1. Number of accessions by country of introduction/origin

Country	Number of accessions	Number of species
Afghanistan	24	2
Algeria	26	2
Australia	16	2
Belgium	2	2
Brazil	2	1
Canada	1	1
Cyprus	37	4
Czechoslovakia	6	2
Egypt	1	1
Ethiopia	28	1

Cont'd

Table 1. (*Cont'd*)

Country	Number of accessions	Number of species
France	5	5
Germany	5	4
Greece	17	5
Guatemala	1	1
Hungary	14	5
India	20	2
Iran	20	6
Israel	8	3
Italy	10	4
Japan	1	1
Libya	1	1
Morocco	3	1
Norway	2	2
Pakistan	24	3
Poland	2	1
Portugal	14	5
Romania	2	2
Spain	3	3
South Africa	1	1
Sudan	1	1
Sweden	2	2
Switzerland	1	1
Syria	28	11
Tunisia	6	3
Turkey	53	10
UK	11	5
Former USSR	20	4
Uruguay	1	1
USA	8	2
Yugoslavia	7	7
Unknown	2	2
TOTAL	**437**	

Future priority areas of collecting:

North-eastern, northern and the southern region of the country.

Passport information

Passport descriptors: Days to 50% flowering, days to 90% maturity, days to 90% podding, plant height, height to the first flower, seeds per pod, harvest index, 1000 seed weight, seed yield, biomass yield, straw yield.

Characterization and evaluation information

Evaluation status: Population studies were carried out for the varieties having sufficient seeds and phenotypic and biometric characterization was carried out for the accessions having less number of seeds. The accessions were evaluated for:

yield per plant, number of seeds per pod, number of pods per plant, weight of 50 pods, weight of 1000 seeds, number of ripe seeds per pod, germination (number of days since sowing), flower initiation (number of days after germination), full flowering (number of days after germination), pod initiation (number of days since the germination), full production of pods (number of days since the germination), days to maturity (number of days after germination), drying (number of days after germination), vigour, thickness of the pod (average of 30 pods), length of seed (average of 30 seeds), width of seed (average of 30 seeds), protein content of some local populations.

Site of characterization: Institut National Agronomique, (INA) El Harrach Altitude: 60 m; Longitude: 30° 8′ East; Latitude: 36° 43′ North; Texture of soil: Clay silt; pH: 7.7; Rainy months: October, November, December, January, February, March, April and May, seldom in June and September; Month of harvest: May-June; Annual rainfall: 650 to 750 mm; Winter: Low temperature; Stage: Sub-humid.

Site Station: ITGC of Sétif

Altitude: 1000 m approximately; Rainy months: October, November, December, January, February, March and April, sometimes in May, seldom in June and September; Month of harvest: May; Annual rainfall: approximately 450 mm; Bioclimatic stage: Semi-arid.

Documentation status: The details are documented in the Flora of Algeria, 'Comportement de quelques légumineuses à grosses graines (Trigonelle, Fèverole, Lupin, Pois protéagineux, *Lathyrus*) and Thèse Ing. Agron. INA

El Harrach (Under the supervision of A. Abdelguerfi) by Tchokech-Kebir S. 1987.

Seed conservation/regeneration information

Responsibility for conservation: INA, EL Harrach

Maintenance of collection: Base collection, active collection and working collection

Availability of germplasm: Germplasm exchange depends upon the availability of seeds

Quarantine regulation: For the small quantities (experimental goal), the permit for introduction of the material is not required. For export and introduction of significantly large quantities, the permit is requested by the customs and the procedure is comparatively slow.

***Lathyrus* species reported from the country/region:** The following *Lathyrus* species were reported by Quezel *et* Santa (1962): *Lathyrus allardi* Batt.; *L. angulatus* L. subsp. *typicus* (Fiori) Maire ; *L. annuus* L.; *L. aphaca* L.; *L. articulatus* L.; *L. cicera* L.; *L. filiformis* (Link.) J. Gay; *L. hirsutus* L.; *L. inconspicuus* L.; *L. latifolius* L.; *L. montanus* (L.) Bernh.; *L. niger* (L.) Bernh.; *L. nissolia* L.; *L. numidicus* Batt.; *L. ochrus* L.; *L. odoratus* L.; *L. quadrimarginatus* Chamb. et Bor.; *L. sativus* L.; *L. saxatilis* (Vent.) Vis.; *L. setifolius* L. subsp *numidicus; L. spharicus* Retz subsp. *clymenum* (Bris.) Maire. *L. tingitanus* L.

General information

Uses (Current/potential): In north of the country *L. sativus* is used for human alimentation (as chickpea). The hay and the straw are used for animal feeds during the slack periods of year. Besides this, the seeds are also used as cattle feed. In the rest of the country *Lathyrus* is mixed with oats or barley for producing oat-*Lathyrus* and barley-*Lathyrus* hay. The associations of cereals - leguminous crops occupy more than 85% of fodder surface.

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Curator/person in-charge

Allan D. McIntyre

Details of holdings

Lathyrus angulatus (4), *L. annuus* (5), *L. aphaca* (12), *L. articulatus* (4), *L. belinensis* (1), *L. chloranthus* (2), *L. chrysanthus* (1), *L. cicera* (141), *L. cirrhosus* (1), *L. clymenum* (12), *L. didermani* (1), *L. digitatus* (1), *L. erectus* (1), *L. gorgoni* (6), *L. hierosolymitanus* (4), *L. hirsutus* (9), *L. hygrophilus* (1), *L. inconspicuus* (12), *L. japonicus* (2), *L. latifolius* (1), *L. linifolius* (1), *L. longifolius* (1), *L. neurolobus* (1), *L. niger* (3), *L. nigrivalvis* (1), *L. nissolia* (2), *L. ochrus* (96), *L. odoratus* (3), *L. pannonicus* (1), *L. pratensis* (1), *L. pseudocicera* (1), *L. sativus* (583), *L. sphaericus* (3), *L. sylvestris* (15), *L. szowitsii* (1), *L. tingitanus* (29), *L. tuberosus* (4), *L. vinealis* (1), *Lathyrus* sp. (33)

Duplicate conservation site(s): International Centre for Agricultural Research in the Dry Areas (ICARDA); Bangladesh Agricultural Research Institute (BARI), Joydebpur and Centre for Legumes in Mediterranean Agriculture (CLIMA).

Exotic collections: 1001 - All accessions are exotic as *Lathyrus* sp. native to Australia are not known.

Passport information

Passport descriptors: Accession number (ATC prefix), name, donor's accession number, synonym, donor, origin.

Donor institute(s): Department of Primary Industry (DOPI); Primary Industries Building 80 Ann St, Brisbane, Queensland, Australia.

The Australian Tropical Crops and Forages Collection (ATCFC), Biloela, Central Queensland.

Dr. Clayton Campbell Agri-Food Diversification Research Center Morden, Manitoba.

Cooperative Centre for Legumes and Mediterranean Agriculture (CLIMA), UWA 35, Stirling Hwy Crawley WA 6009, Australia.

Commonwealth Scientific and Industrial Research Organisation (CSIRO), Wembley, W.A.

Western Australian Department of Agriculture (WADA), Perth, WA.

International Centre for Research in the Dry Areas (ICARDA), ALEPPO, Syria.

Western Region Plant Introduction Station, Pullman, Washington.

Characterization and evaluation information

Evaluation status: Evaluation is in early stages.

Site(s) of characterization: Victorian Institute of Dryland Agriculture Latitude: 36°45' South, Longitude: 142°10' East; Soil texture: Grey cracking clay; Normal sowing month: June; Normal harvest month: December; Field spacing: 1 m between rows, 20 cm between plants; Temperature range: 46°C max. 5°C min; Rainfall range: 422.2 mm annual average; Evaporation: 1552.5 mm annually

Documentation status: All the information is documented and freely available in hard copy, computer print out and electronic format

Utilization of genetic resources

Utilization of germplasm: Early development stage, new adapted cultivars for Australia are yet to be released

Seed conservation/regeneration information

Responsibility for conservation: Australian Temperate Field Crops

Maintenance of collection: Base collection at 18°C and 5% moisture
Working collection at 2°C and 5% moisture

Moisture content at harvest: 12 - 14%

Moisture content at storage: 5%

Germination at storage: 95+%

Amount of seed in storage: 20,000 seeds

Frequency of regeneration: 5 -10 years to maintain stocks and viability

Availability of germplasm: Freely available to *bona fide* researchers, except for low ODAP lines from India

Quarantine regulation: None at present. Several viruses, specific fungal pathogens and Bruchids and other live insects are of concern.

General information

Lathyrus is now grown in Australia as a crop. *L. cicera* and *L. sativus* (5 accessions each tested) were found to be resistant at the seedling stage to red legged earth mite (*Halotydeus destructor*) (Liu Anyou, CLIMA).

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Curator/person in-charge

Mumtazul Haq

Details of holdings

Lathyrus sativus (2432)

Indigenous collections: 2422 accessions

Exotic collections: 10 accessions

Holdings by country of collection: India (10)

Future priority areas of collecting: Sylhet

Passport information

Passport descriptors: Collector number, BARI accession number, date of collection, village, thana (Police station), district, soil topography, status, sample source, habitat, frequency, materials, cultural practices, season, associated crops, sample type, sample method, disease and pest susceptibility, agronomic score, donor's name, plant characteristics, uses.

Donor institute(s): Pulses Research Centre, Bangladesh Agricultural Research Institute (BARI), Joydebpur.

Characterization and evaluation information

Evaluation status: 2190 accessions have been evaluated for days to flower, days to maturity, plant height, pods per plant, seeds per plant, 100 seed weight and ODAP content.

Site(s) of characterization: Bangladesh Agricultural Research Institute, Joydebpur and Regional Agricultural Research Stations at Jessore, Ishurdi, Jamalpur and Rahmatpur.

Documentation status: Information available as hard copies

Promising accessions: 112/14-1, 112/15-3, 112/7-2, 114/26-1, 110/8-1, 104/11-1, CGI 08931418, CGI 08931381, CGI 08931643 and CGI 08931340

Utilization of genetic resources

Cultivars for high seed yield: Barikhesari-1
Barikhesari-2

Cultivars with low ODAP content: Barikhesari-1 (ODAP = 0.09%)
Barikhesari-2 (ODAP = 0.06%)

Seed conservation/regeneration information

Responsibility for conservation: Plant Genetic Resources Centre (PGRC), Bangladesh Agricultural Research Institute (BARI)

Maintenance of collection: Base collection (137); Active collection (2422); Working collection (596).

Duration of storage: 3-8 years

Moisture content at harvest: 14-16%

Moisture content at storage: 7-9%

Germination at storage: 95-100%

Amount of seed in storage: 200 g per accession

Frequency of regeneration: Generally seeds are monitored after 5 years and accessions showing below 80% germination are regenerated

Availability of germplasm: Freely available

Quarantine regulation: Yes, quarantine certificate is required. Presently Entomology and Pathology Divisions of BARI are responsible for this. After receiving any indent, PGRC is responsible to obtain quarantine certificates and relevant formalities to dispatch seeds.

***Lathyrus* species reported from the country/region:** *Lathyrus sativus* L.

General information

Area under cultivation: 188,500 ha

Under local landraces: 96% area is covered by local varieties

Under improved cultivars: 4% area is covered by improved varieties

Average production: 749 kg per ha

Uses: Seed and Fodder

Any other information: Germplasm evaluation for specific traits identification is required for wider use and to avoid duplications

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Curator/person in-charge

Mrs Athena Della

Details of holdings

Lathyrus ochrus (12)
Lathyrus sativus (19)

Duplicate conservation site(s): The Germplasm Institute of the Italian National Research Council, Bari, Italy and International Centre for Research in the Dry Areas (ICARDA), Syria

Indigenous collections: 31 accessions

Holdings by province/ state of collection: *Lathyrus ochrus* (12)*:* Larnaca (2), Limassol (1) and Paphos (9)

Lathyrus sativus (19)*:* Larnaca (3), Limassol (3), Nicosia (4) and Paphos (9)

Passport information

Passport descriptors: Accession number, collecting organizations, species name, date of collection, country of collection, district, village, locality of collection, distance, direction from nearest town/village, grid reference, latitude of collection site, longitude of collection site, altitude of collection site, collection source, status of sample, local name, photograph and type of sample.

Characterization and evaluation information

Documentation status: Documentation information was computerized using Microsoft Access. Information is available in computer print outs and in electronic format.

Seed conservation/regeneration information

Responsibility for conservation: National Genebank (CYPARI), Agricultural Research Institute, Nicosia, Cyprus

Maintenance of collection: 0-4°C, 50-60% R.H.

Amount of seed in storage: Average weight of seed in storage per accession is 200 g.

Frequency of regeneration: Regeneration is carried out when germination of seed is less than 80%

Availability of germplasm: The collection is available for free exchange provided that there is adequate seed in storage

Quarantine regulation: A phytosanitary certificate is needed in order to import germplasm

***Lathyrus* species reported from the country/region:** *L. annuus* L., *L. aphaca* L., *L. blepharicarpus* Boiss. var. *cyprus* Meikle, *L. cassius* Boiss., *L. cicera* L., *L. gorgoni* Parl, *L. latifolius* L. (introduction), *L. ochrus* (L.) DC., *L. odoratus* (introduction), *L. sativus* L.

General information

Area under seed production:
Lathyrus ochrus: 106 ha
Lathyrus sativus: 7.7 ha

Average production:
Lathyrus ochrus: 1.1 t/ha
Lathyrus sativus: 1.0 t/ha

Uses (current/potential): *L. ochrus* is used as food, vegetable and feed, whereas, *L. sativus* is used as feed and green forage.

Any other information: *L. sativus* is also cultivated for green forage and *L. ochrus* as a vegetable but there are no data of the area and production.

Contact persons details

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ETHIOPIA

International Livestock Research Institute (ILRI), Forage Genetic Resources, P.O. Box 5689, Addis Ababa Ethiopia

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Curator/person in-charge

Jean Hanson

Details of holdings

8 *Lathyrus* species are maintained at International Livestock Research Institute, which includes: *L. aphaca, L. articulatus, L. cicera, L. clymenum, L. crassipes, L. ochrus, L. sativus and L. tingitanus;* 22 accessions have not been identified at the species level.

Duplicate conservation site(s): The major part of the *Lathyrus* collection (90%) has been donated by International Center for Agricultural Research in the Dry Areas; therefore most of the collection is actively duplicated at ICARDA.

Indigenous collections: 5 accessions were collected in Ethiopia.

Holdings by province/state of collection: Gojam (1), Unknown (4)

Exotic collections: 91 accessions were collected outside of Ethiopia; 68 accessions do not have any information on their origin.

Holdings by country of collection:

Lathyrus aphaca (2)*:* Greece (2)
L. articulatus (3)*:* Greece (3)
L. cicera (2): United Kingdom (1), Greece (1)
L. clymenum (1)*:* United Kingdom (1)
L. crassipes (1)*:* Argentina (1)
L. ochrus (15)*:* Greece (11), United Kingdom (4)
L. sativus (110)*:* Afghanistan (10), Australia (1), Canada (4), Czech Republic (6), Germany (10), Greece (12), Hungary (3), Iran (7), Poland (2), Portugal (2), Slovakia (1), Tunisia (2), Turkey (6), United Kingdom (44)
L. tingitanus (1): United Kingdom (1)
Lathyrus sp. (18): Afghanistan (1), Canada (1), Germany (1), Greece (4), United Kingdom (11)

Passport information

Passport descriptors: Accession number, genus, species, cultivar name, plant type, collector's name, collection mission code,

donor institute, donor country, country of collection, state of collection, district of collection, area of collection, exact site of collection, map reference, latitude, longitude, altitude, annual rainfall, temperature, slope, parent rock, soil name, soil colour, soil drainage, internal soil drainage, soil texture, soil pH, habitat, associated legumes, associated grasses, flowers, seeds, ripe seeds, leafiness, plant height, plant spread, plant morphology, longevity, plant density, relative abundance, herbarium specimen, status of conservation.

Donor institute(s): Estacao de Melhoramento de Plantas, Elvas, Portugal; International Center for Agricultural Research in the Dry Areas, P.O. Box 5466, Aleppo, Syria; International Livestock Centre for Africa, P.O. Box 5689, Addis Ababa, Ethiopia; CSIRO, Division of Plant Industry, P.O. Box 1600, Canberra, ACT 2601, Australia; L.C. Nungesser KG Saaten Darmstadt, P.O. Box 110846, D-W 1600 Darmstadt, Germany; Indian Agricultural Research Institute, Pusa Campus, New Delhi 110012, India.

Characterization and evaluation information

Evaluation status: Besides basic characterization during initial seed increase at ILRI Debre Zeit station, no further evaluation has been carried out. Basic characterization includes descriptors such as: beginning of flowering, beginning of seed maturation, plant type, height, longevity, special susceptibility to pests and diseases, special sensitivity to soil conditions.

Site(s) of characterization: ILRI Debre Zeit Station.

Longitude: 38°59' East; Latitude: 8°47' North, 1950 masl.; Soil types: Vertisol or Alfisol; Soil pH: 6.3-7.1; Seed production: under irrigation.

Documentation status: ILRI passport data have been documented in catalogs as well as within the SINGER network, where they have been made available on the Internet.

ILRI is presently developing a database on evaluation results. At present - unless data have been published - they are only available upon request, either in form of hard copies or in electronic format.

Promising accessions: At ILRI "best bet" forage accessions have been identified for different ecosystems, such as sub-humid, semi-arid tropics, and tropical highlands; *Lathyrus* accessions for forage have not been included in those lists.

Utilization of genetic resources

Utilization of germplasm: ILRI keeps a database on seed dispatch, which has been integrated into SINGER; however, it does not keep track of the special history of individual germplasm accessions that may be used within breeding programs or directly released as a cultivar, except if germplasm has been distributed through the evaluation networks.

Seed conservation/regeneration information

Responsibility for conservation: ILRI Forage Genetic Resources Genebank

Maintenance of collection: Seeds at 5-8% moisture; in sealed aluminium collection and foiled bags stored at 8°C with no humidity control.

Duration of storage: For 10-20 years. Base collection: seeds at 5-8% moisture; in sealed aluminium foiled bags stored at -20°C.

Moisture content at harvest: Variable

Moisture content at storage: 5-8%

Amount of seed in storage: Approximately 300 g, according to thousand-seed weight.

Frequency of regeneration: After every 20 years because of decrease in germination, if seed has not run out of stock earlier due to dispatch.

Availability of germplasm: Yes, if the recipient signs the ILRI Material Transfer Agreement (MTA)

Quarantine regulation: Yes. For import to a country from ILRI (Ethiopia), the recipient needs to sign the ILRI-MTA and needs to request the Import Permit of the importing country if required; ILRI will then request the Phytosanitory Certificate and Export Permit from the Ethiopian authorities. For export from a country to ILRI (Ethiopia), ILRI needs to request the Import Permit from the Ethiopian authorities; usually a seed shipment needs to go accompanied with a Phytosanitary Certificate of the exporting country.

***Lathyrus* species reported from the country/region:**

According to Flora of Ethiopia (1989): *L. aphaca* L., *L. odoratus* L., *L. pratensis* L., *L. sativus* L. and *L. sphaericus* Retz.

Contact persons details

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FRANCE

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Curator/person in-charge

Prof. Daniel Combes

Details of holdings

Lathyrus cicera (776), *L. heterophyllus* (80); *L. latifolius* (308); *L. sativus* (2345); *L. sylvestris* (649); *L. tuberosus* (229).

Duplicate conservation site(s): GEVES Le Magnereau, France

Indigenous collections: *L. heterophyllus* (76), *L. latifolius* (242), *L. sativus* (562), *L. sylvestris* (478), *L. tuberosus* (109)

Holding by province/state of collection:

L. heterophyllus (76): Aquitaine (1), Bourgogne (2), Franche comté (7), Provence Alpes Cote d'Azure (65) and Rhone Alpes (1)

L. latifolius (242)*:* Alsace (2), Aquitaine (11), Bourgogne (1), Centre (21), Ile de France (36), Languedoc Roussillon (51), Limousin (4), Midi Pyreneese (2), Nord Pas de Calais (36), Pays de la Loire (15), Provence Alpees Cote d'Azur (62), Rhone Alpes (1)

L. sativus (562)*:* Aquitaine (552), Centre (1), Ille de France (6), Midi Pyrenees (2), Pais de la Loire (1)

L. sylvestris (478)*:* Alsace (2), Aquitaine (243), Bourgogne (1), Centre (1), Franche Comte (9), Ile de France (5), Midi Pyreneese (172), Nord Pas de Calais (31), Pays de la Loire (2), Provence Alpes Cote d'Azur (11), Rhone Alpes (1)

L. tuberosus (109): Auvergne (10), Centre (28), Franche Comte (1), Ille de Franche (65), Nord Pas de Calais (5)

Exotic collections: *L. cicera* (776), *L. heterophyllus* (4), *L. latifolius* (66), *L. sativus* (1783), *L. sylvestris* (171), *L. tuberosus* (120)

Holding by country of collection: *L. cicera* (776): Australia (2), Greece (111), India (1), Iraq (4), Italy (4), Libya (1), Portugal (120), Spain (319), Switzerland (1), Syria (80), Tunisia (13), Turkey (1), Union of Soviet Socialist Republics (1), United State of America (118)

L. heterophyllus (4)*:* Belgium (1), Spain (1), Switzerland (1), United Kingdom (1)

L. latifolius (66): Belgium (3), Canada (1), Germany (7), Hungary (6), Italy (1), New Zealand (1), Rome (4), Spain (4), Switzerland (30), Tunisia (2), Union of Soviet Socialist Republics (1), United Kingdom (3), United State of America (3)

L. sativus (1783)*:* Afghanistan (8), Albania (3), Algeria (2), Australia (4), Bangladesh (2), Belgium (3), Benin (1), Bulgaria (15), Canada (1), Cyprus (44), Czechoslovakia (58), Ethiopia (194), Germany (346), Greece (208), Hungary (8), India (165), Indonesia (23), Iraq (3), Israel (5), Italy (100), Morocco (2), Nepal (76), Pakistan (1), Peru (2), Poland (10), Portugal (133), Romania (2), Spain (108), Syria (2), Tajikistan (1), Tunisia (189), Turkey (20), Ukraine (8), United Kingdom (1), United State of America (1), Union of Soviet Socialist Republics (34)

L. sylvestris (171)*:* Andorra (4), Belgium (1), Canada (3), Czechoslovakia (3), Denmark (8), Finland (1), German Democratic Republic (2), Hungary (4), Italy (4), Poland (3), Portugal (4), Spain (102), Switzerland (20), Union of Soviet Socialist Republic (1), United Kingdom (8), United State of America (2), Yugoslavia (1)

L. tuberosus (120)*:* Czechoslovakia (4), Denmark (9), Germany (25), Hungary (67), Italy (6), United Kingdom (4), Union of Soviet Socialist Republics (3), Yugoslavia (2).

Passport information

Passport descriptors:

ECP Number, institute holding accession, accession number, year of accession, country of collection, collecting institute, collector's number, date of collection, donor institute, donor identification number, internal disponibility of seeds, external disponibility of seeds, name of subspecies, name of cultivar or variety, administrative subdivision, nearest town or village, general habitat, specific habitat, grassland habitat, altitude (elevation above sea level in meters), degrees and minutes suffixed by N or S, degrees and minutes suffixed by E or W.

Donor institute(s):

Fernando Franco Jubete, Departamento de Ciencias y Tecnologia, Agrarias, Avda. de Madrid, 57, Universidad de Valladolid E-34004, Valencia, Spain

LEM/IBEAS Campus Universitaire, Ave. de l'Universite, F-64000 PAU, France;

Greek Gene Bank, P.B. Box 10514, GR54110 Thessaloniki, Greece; ICARDA, P.O. Box 5466, Aleppo, Syria;

Royal Botanical Gardens, Wakehurst Place Ardingly, Hayward's Heath, West Sussex, RHI/RH17 6th Ken, United Kingdom;

Instituto Nacional De Investigacion Agraria, Centro De Recursos Fitogenticos, Madrid, Spain;

Zentral Institute Fur Genetik Und Gatersleben, Kulturpflanzen Forschung, Germany.

Characterization and evaluation information

Documentation status: Database on Internet: http://www.univ-pau.fr/lathyrus. This can be sent, on request, on floppy disk, foxpro2 or access version. Eventually a paper version exists.

Seed conservation/regeneration information

Responsibility for conservation: Laboratoire d'Ecologie Moleculaire IBEAS Campus Universitaire Ave. Universite, F-64000 PAU

Maintenance of collection: Base collection, active collection, working collection

Amount of seed in storage: Variable

Availability of germplasm: Collections available for free exchange depends on the quantity of seed.

Quarantine regulation: No special procedure necessary for exportation outside France.

***Lathyrus* species reported from the country/region:** In addition to species kept in collection many species exist in France, particularly Mediterranean species.

Contact persons details

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Curator/person in-charge

Konrad Bachmann

Details of holdings

Lathyrus amphicarpos (2), *L. angulatus* (2), *L. annuus* (2), *L. aphaca* (11), *L. articulatus* (9), *L. aureus* (2), *L. cicera* (61), *L. cirrhosus* (1), *L. clymenum* (19), *L. davidii* (3), *L. digitatus* (1), *L. gorgoni* (2), *L. hierosolymitanus* (1), *L. hirsutus* (8), *L. inconspicuus* (3), *L. komarovii* (1), *L. latifolius* (4), *L. laxiflorus* (1), *L. mulkak* (1), *L. neurolobus* (2), *L. niger* (1), *L. nissolia* (2), *L. ochrus* (46), *L. odoratus* (4), *L. pannonicus* (1), *L. paranensis* (1), *L. pratensis* (3), *L. pseudocicera* (1), *L. rotundifolius* (4), *L. sativus* (205), *L. sphaericus* (2), *L. sylvestris* (5), *L. tingitanus* (9), *L. tuberosus* (4), *L. vernus* (2), *Lathyrus* sp. (19)

Duplicate conservation site: For cases of joint expeditions, material is duplicated in the countries of collection.

Indigenous collections: 4 accessions

Exotic collection: 441 accessions

Holdings by country of collections: Afghanistan (1), Albania (9), Argentina (1), Armenia (2), Bulgaria (2), Canada (1), Canary Islands (1), Czechoslovakia (41), Denmark (2), Egypt (1), Ethiopia (2), France (2), Georgia (5), Germany (4), Great Britain (2), Greece (123), GTM Guatemala (1), Hungary (5), India (5), Iran (8), Israel (5), Italy (86), Japan (1), Kazakhstan (2), Libya (1), Morocco (1), North Korea (1), Peru (1), Poland (2), Portugal (9), former Soviet Union (11), Spain (18), Tajikistan (1), Tunisia (3), Turkey (6), Ukraine (6), Uruguay (1), unknown (68)

Characterization and evaluation information

Evaluation status: *Lathyrus* is not very important crop in Germany. Some organic plant growers requested seeds and information about low ODAP content recently. Some observations were made during regeneration of the material. These data for *Lathyrus* are not yet computerized. Mainly the following characters are

observed: plant height, flowering time, harvesting time, colour of the flowers, colour of seeds.

Documentation status: Passport data fully computerized. Documentation based on Microsoft Foxpro database. Passport data available for searching, and downloading via Internet (http://fox-serv.ipk-gatersleben.de). Information about germplasm available for distribution: Index Seminum (regularly every two years). Individual requests are answered by genebank, documentation group (H. Knüpffer). More detailed passport data can be printed on request. DBF files and various other formats can be sent to users on diskette or via Email. Computerization of existing manual records of field characterization/ evaluation is in progress.

Seed conservation/regeneration information

Responsibility for conservation: Institute fur pflanzengenetik und kulturpflanzenforschung (IPK)

Maintenance of collection: Base, Active, Working collection. There is no physical separation between base and active collection.

Duration of storage: 10-15 years

Moisture content at harvest: 9-12%

Moisture content at storage: 8-10%

Germination at storage: 90-100%

Amount of seed in storage: 0.5 kg

Frequency of regeneration: Depending on germinability and amount of remaining seeds.

Availability of germplasm: Free to *bona fide* users.

Quarantine regulation: National quarantine regulations of institutions sending and receiving seeds.

Contact persons details

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Curator/person in-charge

L. Horvath

Details of holdings

307 total accessions including 76 landraces, 170 cultivars and 61 wild relatives: *Lathyrus aphaca* (5), *L. articulatus* (1), *L. cicera* (55), *L. clymenum* (2), *L. hirsutus* (4), *L. nissolia* (5), *L. ochrus* (2), *L. odoratus* (2), *L. pratensis* (1), *L. sativus* (228), *L. tingitanus* (2)

Indigenous collections: 101 accessions

Exotic collections: 206 accessions

Holdings by country of collection: Australia (10), Belgium (9), Bulgaria (13), Czechoslovakia (3), France (10), Germany (27), Iran (1), Israel (1), Italy (2), Netherlands (3), Poland (8), Portugal (10), Romania (6), Switzerland (1), Syria (54), United Kingdom (1), Former USSR (45), unknown (2)

Passport information

Passport descriptors: Multi-Crop Passport Descriptors (IPGRI/FAO)

Characterization and evaluation Information

Documentation status: Passport data complete and computerized. Available for users on diskettes in dBase or MS Excel format or via Internet (http://www.rcat.hu). Institutes germplasm catalogue is in press.

Seed conservation/regeneration information

Responsibility for conservation: Institute for Agrobotany, Genetic Resources Department

Maintenance of collection: Active collection (Medium-term seed storage at 0°C),

Base collection (Long-term seed storage at -20°C). Seeds in sealed glass bottles of 370 and 500 ml capacity.

Moisture content at storage: 5-7%

Germination at storage: 96%

Amount of seed in storage: 200-250 g

Frequency of regeneration: When the viability of a batch falls below 80%

Availability of germplasm: Freely available for research purpose. Germplasm catalogue periodically issued.

Quarantine regulation: Phytosanitary certificate required

General information

Area under cultivation: 20-30 ha

Average production (t/ha): 1-5 t/ha

Uses (Current/potential): Cultivated for fodder and food

Contact persons details

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Curator/person in-charge

Dr D.P. Patel

Details of holdings

Lathyrus sativus (146)

Duplicate conservation site(s): Indira Gandhi Krishi Vishwa Vidyalaya, Raipur and National Bureau of Plant Genetic Resources (NBPGR), New Delhi.

Indigenous collections: 146 collections

Holdings by province/state of collection: Eastern Maharashtra (93), Madhya Pradesh (30), Orissa (16), Bihar (7)

Future priority areas of collection: Trait specific collection from West Asia and Europe, where *Lathyrus* is cultivated. Collection of germplasm having low BOAA content is the future priority. Survey and collecting of *Lathyrus* from Bundelkhand and Ruhelkhand of Madhya Pradesh and Uttar Pradesh in India.

Passport information

Passport descriptors: Accession number, place of collection, date of collection, *taluqa,* district, elevation.

Characterization and evaluation information

Evaluation status: The germplasm collection was characterized for 19 agro-botanical and economic characters.

Site(s) of characterization: NBPGR, Regional Station, Dr P.D.K.V. Campus, Akola. Latitude: 20°04' E; Longitude: 77°03' N; Altitude: 281 M; Soil texture: Black cotton soil; Sowing month: November; Harvest month: March; Field spacing: 50cm between rows 15 cm between plants; Average climate: Mild-winter; two irrigations are required.

Documentation status: Data on 19 descriptors are documented in dBase-III. Data are available in the form of computer print out.

Promising accessions: High yielding accessions include: IC 1205009, IC 120530, IC 120531, IC 120526, IC 120512, IC 120525 and IC 120517.

Utilization of genetic resources

Cultivars for high seed yield: IC 1205009, IC 120530, IC 120531, IC 120526, IC 120512, IC 120525 and IC 120517

Seed conservation/regeneration information

Responsibility for conservation: All the evaluated germplasm lines have been stored in long-term storage at National Genebank, NBPGR, New Delhi.

Maintenance of collection: Base, Active and Working collection

Duration of storage: Long-term

Moisture content of storage: 6-8%

Germination at storage: 98%

Amount of seed in storage: 100 g per accession

Frequency of regeneration: Every third year

Availability of germplasm: Yes, all the collections are available for free exchange

Quarantine regulation: Import permit is required and phytosanitary certificate is issued from NBPGR, New Delhi

General information

Uses (current/potential): As seed and fodder

Contact persons details

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Curator/person in-charge

Dr G.P. Dixit

Details of holdings

Lathyrus sativus (124)

Duplicate conservation site(s): Indira Gandhi Agricultural University, Raipur, Madhya Pradesh and National Bureau of Plant Genetic Resources (NBPGR), New Delhi.

Indigenous collections: 84 accessions

Exotic collections: 40 accessions

Future priority areas of collection: Madhya Pradesh, Maharashtra, Bihar, West Bengal

Passport information

Passport descriptors: Passport descriptor details are available from Department of Plant Breeding and Genetics, Indira Gandhi Agricultural University, Raipur, Madhya Pradesh.

Characterization and evaluation information

Evaluation status: All the accessions were evaluated for two years and the information is available on request

Site(s) of characterization: Indian Institute of Pulses Research, Kanpur

Soil texture: Sandy loam; Normal sowing month: November; Normal harvest month: April; Field spacing: 30 cm x 10 cm; Average climate: Semi-arid to sub-humid; Average rainfall: 1000 mm

Documentation status: Data documentation is under progress

Promising accessions: Higher number of Pods/plant: Bio R-231, DL-2165, IC-1204546 and RLK-1280

High Yield/plant: Bio L-212, IC-120446, DL-258, JRL-47, Pusa-434 and KH-1

High 100-seed weight: RLK-568, RLK-538, Sel-505 and Bio L-208

Low ODAP content: Bio 202, Bio R-231, Bio L-212, Bio L-203 and Bio L-208

Utilization of genetic resources

Utilization of germplasm: Some of the germplasm being used in the hybridization programme by plant breeders for developing low ODAP and high yielding genotypes.

Cultivars for high seed yield: Bio L-212, IC-120446, DL-258, JRL-47 and Pusa 434

Cultivars with low ODAP content: Bio 202, Bio R-231, Bio L-212, Bio L-203 and Bio L-208

Seed conservation/regeneration information

Responsibility for conservation: National Bureau of Plant Genetic Resources, New Delhi

Maintenance of collection: Base: National Bureau of Plant Genetic Resources, New Delhi

Active: IGAU, Raipur and Indian Institute of Pulses Research, Kanpur

Duration of storage: Short-term storage

Moisture content at storage: 6-8%

Germination at storage: 98%

Amount of seed in storage: 100 g

Frequency of regeneration: Every third year

Availability of germplasm: Within country: Free
Outside country: Through NBPGR

Quarantine regulation: Yes, import permit and phytosanitary certificates are required for germplasm exchange. The details can be obtained from NBPGR.

***Lathyrus* species reported from the country/region:** *Lathyrus sativus*

General information

Area under cultivation: 0.8 m ha

Average production: 0.67 t/ha

Uses (current/potential): *Dal*, vegetable, fodder

Contact persons details

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Fax: 91 771 2424532

Curator/person in-charge

R.N. Sharma

Details of holdings

Lathyrus aphaca (2), *L. cicera* (1), *L. ochrus* (14), *L. odoratus* (2), *L. sativus* (2561)

Duplicate conservation site(s): National Bureau of Plant Genetic Resources, New Delhi and NBPGR Regional Station, Akola

Indigenous collections: 2453 accessions

Holdings by province/ state of collection: Bihar (11), Madhya Pradesh (2245), Maharashtra (146), New Delhi (27), Uttar Pradesh (23), West Bengal (1).

Exotic collections: 127 accessions: *L. cicera* (1), *L. ochrus* (14), *L. sativus* (112)

Holdings by country of collection:
L. cicera (1)*:* United States of America (1)
L. ochrus (14)*:* Cyprus (7), Germany (1), Greece (6)
L. sativus (112)*:* Bangladesh(3), Canada (6), Cyprus (3), Ethiopia (14), France (7), Germany (3), Greece (1), Italy (65), Poland (1), Syria (3), Tunisia (1), Turkey (4), United States of America (1)

Future priority areas of collection: Jabalpur, Rewa, Bhopal divisions of Madhya Pradesh and areas of West Bengal, Bihar, Orissa and Eastern Uttar Pradesh.

Passport information

Passport descriptors: Days to 50% flowering, days to maturity, plant height (cm), number of branches/plant, number of pods/plant, pod length (cm), pod width (cm), number of seeds/plant, seed index (g), biological yield (g), seed yield/plant, ODAP content in dry seeds (%), flower colour, thrips score, pigmentation on stem.

Characterization and evaluation information

Evaluation status: 1187 accessions have been evaluated for days to 50% flowering, days to maturity, plant height (cm), number of branches/plant, number of pods/plant,

pod length (cm), pod width (cm), number of seeds/ plant, seed index (g), biological yield (g), seed yield/ plant, ODAP content in dry seeds (%), flower colour, thrips score, pigmentation on stem.

Site(s) of characterization: Department of Plant Breeding and Genetics, Indira Gandhi Agricultural University, Raipur (M.P.) 492012, India.

Latitude: 21°16′N; Longitude: 81°36' E; Elevation: 389 masl; Normal sowing month: October; Field spacing: 30 cm row to row and 10 cm plant to plant.

Documentation status: 1187 accessions were characterized and a catalogue was published.

Promising accessions: **Flowering < 50 days:** EC-209041, EC-209059, EC-209076, EC-209095, IC-120479, RLK-1, RLK-10, RLK-102, RLK-1045, RLK-106, RLK-108, RLK-1100, RLK-119, RLK-120, RLK-99, RLK-236, RLK-287, RLK-30, RLK-35, RLK-454, RLK-498, RLK-51, RLK-514, RLK-524, RLK-527, RLK-53, RLK-54, RLK-543, RLK-550, RLK-981, RLK-70, RLK-71, RLK-712, RLK-715, RLK-74, RLK-75, RLK-763, RLK-766, RLK-79, RLK-8, RLK-801, RLK-804, RLK-84, RLK-85, RLK-86, RLK-98, RLK-126, RLK-127, RLK-130, RLK-131, RLK-133, RLK-134, RLK-144, RLK-17, RLK-19, RLK-2, RLK-22, RLK-990, RLK-578, RLK-58, RLK-613, RLK-956, RLK-616, RLK-617, RLK-656, RLK-668, RLK-67, RLK-671, RLK-687, RLK-7, RLK-869, RLK-898, RLK-900, RLK-902, RLK-904, RLK-101, RLK-91 and RLK-916

Days to maturity < 95 days: RLK-111, RLK-171, RLK-172, RLK-183, RLK-236, RLK-343, RLK-436, RLK-529, RLK-551, RLK-898, RLK-556, RLK-603, RLK-616, RLK-628, RLK-635, RLK-636, RLK-656, RLK-661, RLK-902, RLK-666, RLK-668, RLK-747, RLK-761, RLK-766, RLK-768, RLK-769, RLK-770, RLK-801, RLK-954, RLK-802, RLK-803, RLK-804, RLK-806, RLK-807, RLK-809, RLK-813, RLK-821, RLK-828, IC-120438, IC-120446, IC-120447, IC-120448 and IC-120450

Pods/plant > 50: RLK-49, RLK-92, RLK-111, RLK-149, RLK-326, RLK-331, RLK-342, RLK-393, RLK-487, RLK-658 and RLK-929

Fruiting branches > 15: EC-168350, EC-209063, EC-209081, RLK-49, RLK-1008, RLK-1011, RLK-1031, RLK-1038, RLK-1055, RLK-1077, RLK-1090, RLK-1104, RLK-310, RLK-321, RLK-326, RLK-331, RLK-342, RLK-343, RLK-344, RLK-37, RLK-39, RLK-393, RLK-467, RLK-470, RLK-806, RLK-807, RLK-819,

RLK-821, RLK-835, RLK-852, RLK-853, RLK-863, RLK-876, RLK-879, RLK-913, RLK-92, RLK-111, RLK-130, RLK-149, RLK-189, RLK-204, RLK-206, RLK-775, RLK-595, RLK-597, RLK-603, RLK-614, RLK-637, RLK-757, RLK-786, RLK-968, RLK-990, RLK-23, RLK-283, RLK-212 and RLK-788

Pod length > 3.5 cm: EC-209032, EC-209070, IC-120435, IC-120436, IC-120438, IC-120449, RLK-1056, RLK-1061, RLK-149, RLK-204, RLK-315, RLK-321, RLK-324, RLK-325, RLK-326, RLK-333, RLK-716, RLK-718, RLK-787, RLK-803, RLK-82, RLK-844, RLK-866, RLK-911, RLK-912, RLK-943, RLK-945, RLK-343, RLK-413, RLK-467, RLK-522, RLK-525, RLK-597, RLK-615, RLK-626, RLK-630, RLK-642, RLK-643, RLK-648, RLK-674, RLK-687, RLK-699, RLK-704, RLK-968, RLK-982, RLK-992 and RLK-958

Pod width > 1.0 cm: RLK-975, RLK-976, RLK-982, RLK-999, RLK-1032, RLK-1038, RLK-1040, RLK-1053, RLK-1061, RLK-1104, RLK-118, RLK-128, RLK-144, RLK-149, RLK-199, RLK-212, RLK-280, RLK-286, RLK-324, RLK-33, RLK-331, RLK-344, RLK-348, RLK-365, RLK-371, RLK-375, RLK-376, RLK-393, RLK-432, RLK-434, RLK-436, RLK-470, RLK-480, RLK-487, RLK-49, RLK-494, RLK-50, RLK-500, RLK-51, RLK-514, RLK-516, RLK-519, RLK-522, RLK-527, RLK-55, RLK-58, RLK-593, RLK-597, RLK-598, RLK-60, RLK-613, RLK-617, RLK-618, RLK-619, RLK-620, RLK-626, RLK-631, RLK-637, RLK-643, RLK-646, RLK-647, RLK-664, RLK-669, RLK-670, RLK-687, RLK-695, RLK-709, RLK-711, RLK-712 and RLK-716

Seeds/pod > 4: RLK-9, RLK-16, RLK-30, RLK-33, RLK-58, RLK-72, RLK-83, RLK-97, RLK-118, RLK-188, RLK-192, RLK-211, RLK-216, RLK-217, RLK-261, RLK-262, RLK-273, RLK-274, RLK-280, RLK-281, RLK-289, RLK-292, RLK-299, RLK-313, RLK-394, RLK-396, RLK-449, RLK-462, RLK-478, RLK-480, RLK-495, RLK-496, RLK-501, RLK-629, RLK-676, RLK-705, RLK-706, RLK-732, RLK-760, RLK-782, RLK-791, RLK-799, RLK-805, RLK-810, RLK-814, RLK-816, RLK-819, RLK-821, RLK-835, RLK-863, RLK-864, RLK-866, RLK-886, RLK-895, RLK-993, RLK-1007, RLK-1024, RLK-195, RLK-206, RLK-209, RLK-275, RLK-285, RLK-327, RLK-470, RLK-513, RLK-532, RLK-547, RLK-751, RLK-272, RLK-310, RLK-321, RLK-71, RLK-390 and EC-209059

Seeds/plant > 100: RLK-1008, RLK-1009, RLK-1023, RLK-1038, RLK-1047, RLK-107, RLK-1081, RLK-1085,

RLK-1087, RLK-1090, RLK-1143, RLK-111, RLK-130, RLK-149, RLK-150, RLK-16, RLK-188, RLK-189, RLK-204, RLK-212, RLK-240, RLK-252, RLK-257, RLK-263, RLK-269, RLK-273, RLK-482, RLK-290, RLK-297, RLK-300, RLK-326, RLK-331, RLK-332, RLK-344, RLK-359, RLK-365, RLK-37, RLK-375, RLK-383, RLK-393, RLK-797, RLK-487, RLK-49, RLK-498, RLK-511, RLK-529, RLK-614, RLK-658, RLK-663, RLK-694, RLK-712, RLK-72, RLK-775, RLK-968, RLK-802, RLK-803, RLK-819, RLK-821, RLK-83, RLK-835, RLK-863, RLK-9, RLK-912, RLK-913, RLK-92, RLK-929, RLK-958, EC-209034 and EC-209060

Seed index > 10 g: RLK-1, RLK-124, RLK-143, RLK-148, RLK-153, RLK-269, RLK-517, RLK-555, RLK-581, RLK-95, EC-209035, EC-209039, EC-209041, EC-204041, EC-209044, EC-209045, EC-209049, EC-209059, EC-209060, EC-209063, EC-209064, EC-209071, EC-209072, EC-209080, EC-209081, EC-209095, EC-188335, EC-16835, EC-168350, EC-168365, EC-200322, EC-208929, EC-209017, EC-209019, EC-209023, EC-209023, EC-209025, EC-209026 and EC-209032

Bio-yield > 19 g: RLK-107, RLK-1031, RLK-1032, RLK-821, RLK-819, RLK-37, RLK-249, RLK-1030, RLK-498, RLK-300, RLK-73, RLK-49, RLK-1038, RLK-658, RLK-907, RLK-331, RLK-365, RLK-674, RLK-204, RLK-375, RLK-71, RLK-82, RLK-393, RLK-775, RLK-130, RLK-1047, RLK-929, RLK-1085, RLK-1104, RLK-149, RLK-1029, RLK-487 and RLK-482

Seed yield > 10 g: RLK-1, RLK-124, RLK-143, RLK-148, RLK-153, RLK-269, RLK-517, RLK-555, EC-168365, EC-209080, EC-209081, EC-209095, EC-209039, EC-209041, EC-209042, EC-209045, EC-029049, EC-209059, EC-209060, EC-209063, EC-209064, EC-209071, EC-209072, EC-209018, EC-209023, EC-209024, EC-209025, EC-209026, EC-209032, EC-138335, EC-16835, RLK-95, EC-200322, EC-208929, RLK-581, EC-209044, EC-209017 and EC-168350

ODAP < 0.2 per cent: RLK-1010, RLK-1074, RLK-117, RLK-17, RLK-209, RLK-225, RLK-240, RLK-244, RLK-248, RLK-249, RLK-251, RLK-253, RLK-259, RLK-264, RLK-278, RLK-279, RLK-280, RLK-282, RLK-283, RLK-288, RLK-289, RLK-292, RLK-297, RLK-299, RLK-32, RLK-52, RLK-532, RLK-74, RLK-903, RLK-925, RLK-932, RLK-241, RLK-268, RLK-290 and RLK-818

No pigmentation on stem: RLK-1037, RLK-1038, RLK-1040, RLK-1041, RLK-1042, RLK-1043, RLK-1044, RLK-1046, RLK-1047, RLK-1048, RLK-1049, RLK-1050, RLK-1051, RLK-1059, RLK-1060, RLK-1061, RLK-1062, RLK-1068, RLK-1069, RLK-1070, RLK-1071, RLK-1077, RLK-1078, RLK-1079, RLK-1082, RLK-1083, RLK-1084, RLK-1085, RLK-1086, RLK-118, RLK-12, RLK-121, RLK-150, RLK-160, RLK-17, RLK-19, RLK-20, RLK-23, RLK-24, RLK-25, RLK-254, RLK-258, RLK-27, RLK-3, RLK-311, RLK-33, RLK-34, RLK-35, RLK-36, RLK-38, RLK-39, RLK-42, RLK-43, RLK-44, RLK-452, RLK-453, RLK-454, RLK-459, RLK-531, RLK-532, RLK-534, RLK-535, RLK-539, RLK-541, RLK-542, RLK-543, RLK-545, RLK-454, RLK-547, RLK-548, RLK-550, RLK-555, RLK-556, RLK-559, RLK-56, RLK-560, RLK-565, RLK-567, RLK-568, RLK-570, RLK-575, RLK-576, RLK-577, RLK-578, RLK-580, RLK-583, RLK-584, RLK-619, RLK-62, RLK-620, RLK-621, RLK-65, RLK-67, RLK-618, RLK-68, RLK-70, RLK-71, RLK-713, RLK-714, RLK-716, RLK-72, RLK-80, RLK-81, RLK-82, RLK-851, RLK-87, RLK-88, RLK-92, RLK-94, RLK-99, RLK-1105, RLK-1106, RLK-519, RLK-520, RLK-1108, RLK-46, RLK-47, RLK-48, RLK-49, RLK-521, RLK-523, RLK-526, RLK-528, RLK-29, RLK-530, RLK-585, RLK-592, RLK-593, RLK-596, RLK-597, RLK-598, RLK-60, RLK-600, RLK-61, RLK-1087, RLK-1088, RLK-1089, RLK-1096, RLK-1097, RLK-1098, RLK-1102, RLK-1107 and RLK-1109

Utilization of genetic resources

Cultivars for high seed yield: RLS-1, RLS-2, JRL-115

Cultivars with low ODAP content: RLS-6

Seed conservation/regeneration information

Responsibility for conservation: Working collection: Department of Plant Breeding and Genetics, Indira Gandhi Agricultural University, Raipur (M.P.)

Active collection: National Bureau of Plant Genetic Resources, (NBPGR), Pusa Campus, New Delhi

Moisture content at harvest: 8-10%

Moisture content at storage: 6-8%

Germination at storage: 98%

Amount of seed in storage: 100 g per accession

Frequency of regeneration: Every third year due to loss of seed viability

Availability of germplasm: Available only through NBPGR, New Delhi

Quarantine regulation: NBPGR, New Delhi is responsible for quarantine regulations

General information

Area under cultivation: 675, 000 hectare in Madhya Pradesh province of India.

Under local landraces: 675,000 hectare

Average production: 450 kg per ha

Uses (current/potential): *Dal,* Gram flour

Contact persons details

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Website: http://www.ncartt.gov.jo

Curator/person in-charge

Maha Q. Syouf and Ziad T. Nouh

Details of holdings

Lathyrus aphaca, L. cicera, L. gorgoni, L. hierosolymitanus, L. pseudocicera and *L. sativus*

Duplicate conservation site(s): International Centre for Agricultural Research in the Dry Areas (ICARDA), Syria

Indigenous collections: 36 accessions

Holding by province/ state of collection:

L. aphaca (15)*:* Amman (1), Balqa'a (8), Irbid (6)
L. cicera (1): Ma'an (1)
L. gorgoni (1)*:* Irbid (1)
L. hierosolymitanus (8)*:* Amman (2), Balqa'a (2), Irbid (4)
L. inconspicuus (3)*:* Balqa'a (2), Mafreq (1)
L. pseudocicera (6)*:* Amman (2), Balqa'a (2), Irbid (1), Mafreq (1)
L. sativus (1)*:* Tafilah (1)
Lathyrus sp. (1): Irbid (1)

Seed conservation/regeneration information

Responsibility for conservation: NCARTT/ICARDA

Maintenance of collection: Base collection, active collection, working collection

Amount of seed in storage: 400 g

Availability of germplasm: Yes, but only few collections

General information

Uses (Current/potential): Vegetable and fodder

Any other information: All information available at International Centre for Agricultural Research in the Dry Areas, Aleppo, Syria.

Contact persons details

Director General
National Centre for Agricultural Research and Technology Transfer (NCARTT)
Baqa'a 19381, Amman
Jordan

NEPAL

National Agriculture Research Institute (NARI)
Agriculture Botany Division,
Khumaltar, Lalitpur, Kathmandu

Telephone: 977 1 5521614/15
Fax: 977 15521197, 5523653

Curator/person in-charge:

C.R. Yadav

Details of holdings

Lathyrus sativus: 149 accessions

Duplicate conservation site(s): 90 accessions of *Lathyrus* are conserved at International Center for Agricultural Research in the Dry Areas (ICARDA), Syria and Centre for Legumes in Mediterranean Agriculture (CLIMA), Australia

Indigenous collections: 144 accessions

Holdings by province/ state of collection: Banke (10), Bardiya (2), Bara (8), Chitwan (5), Dang (3), Dhanusha (14), Jhapa (7), Kailali (1), Kapilvastu (6), Kanchanpur (3), Rupandehi (10), Mahottari (9), Morang (13), Nawalparasi (8), Parsa (5), Rauthat (5), Saptari (5), Sarlahi (6), Siraha (13), Sunsari (5), Udaipur (1), unknown (5)

Exotic collections: 5 accessions

Holdings by country of collection: Bangladesh (1), India (3), Former USSR (1)

Passport information

Passport descriptors: Information available on genus, species, cultivar name, origin, uses, collecting year, collecting site, collecting institute, altitude.

Characterization and evaluation information

Evaluation status: Characterization and evaluation are available from two sites viz., Rampur and Parwanipur for 13 traits: flowering, maturity, flower colour, anthocyanin pigmentation, growth habit, plant type, leaf width, plant height, number of pods/plant, number of seeds/pod, 100 grain weight, grain yield (kg/ha) and seed coat colour, using IPGRI descriptors.

Site(s) of characterization: Rampur:
Latitude: 27°40′N; Longitude: 80°19′E; Elevation: 228 m; Soil texture: Loamy; Normal sowing month:

October/November; Normal harvest month: March/April; Field spacing: 50 cm between rows; Temperature range: 7.9 - 31.2°C; Rainfall range: 6.9 - 81.8 mm

Parwanipur:
Latitude: 27°04'N; Longitude: 84°58'E, Elevation: 115 m; Soil texture: Loamy; Normal sowing month: October/November; Normal harvest month: March/April; Field spacing: 50 cm between rows, Temperature range: 8.5-31.8°C; Rainfall range: 6.2 - 67.8 mm

Documentation status: The data on *Lathyrus* germplasm are being documented using Dbase-V programme. It can be made available to the users only as computer print out.

Promising accessions: Following promising accessions were identified for various traits which are of direct importance to growers/breeders: 1041, 1047, 1053, 1054, 1055, 1056, 1057, 1059, 1060, 1061, 1062, 1063, 1065, 1068, 1082, 1092, 1096 and 1099

Utilization of genetic resources

Cultivars for high seed yield: No varieties released so far because of higher neurotoxin i.e. β-N-oxalyl amino alanine (BOAA) content which causes lathyrism.

Seed conservation/regeneration information

Responsibility for conservation: Grain Legume Research Programme and Agriculture Botany Division are responsible for conservation/maintenance of germplasm.

Maintenance of collection: Base collection, active collection, working collection

Duration of storage: Active collection for 4-5 years

Availability of germplasm: Exchange of germplasm is based on Material Transfer Agreement (MTA).

Quarantine regulation: Phytosanitary certificate is required. Available through Plant Quarantine Division, Department of Agriculture.

***Lathyrus* species reported:** *L. aphaca, L. odoratus and L. sativus*

General information

Area under cultivation: 34,240 ha

Average production: 0.531 t/ha

Uses (current/potential): *Dal* (pulses), fresh and processed green leafy vegetable and fodder

Contact persons details

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PAKISTAN

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Curator/person in-charge

Muhammad Sidiq Bhatti

Details of holdings

Lathyrus spp. 130 accessions

Duplicate conservation site(s): International Centre for Agricultural Research in the Dry Areas (ICARDA)

Indigenous collection: 55 accessions

Holding by province/ state of collection: North West Frontiers Province (1), Northern areas (5), Punjab (10), Sindh (39)

L. odoratus (23): Northern areas (3), North West Frontiers Province (1), Punjab (2), Sindh (17)

L. sativus (11): Punjab (2), Sindh (9)

L. setifolius (1): Punjab (1)

Lathyrus sp. (20): Northern Areas (2), Punjab (5), Sindh (13)

Exotic collections: 75 accessions

Holding by country of collection: Collections at International Centre for Agricultural Research in the Dry Areas, Syria (57) and at Plant Genetic Resources - Canada (18)

ICARDA collections:

L. cicera (9): India (1), Syria (8)

L. ochrus (10): India (1), Iran (1), Syria (8)

L. sativus (35): Afghanistan (10), India (4), Iran (9), Syria (4), Turkey (8)

Lathyrus sp. (3): Afghanistan (1), Iran (1), Turkey (1)

Plant Genetic Resources – Canada collections (18): *L. articulatus* (1), *L. cicera* (1), *L. clymenum* (1), *L. ochrus* (1), *L. sativus* (11), *L. szowitsii* (1), *L. tingitanus* (1), *Lathyrus* sp. (1)

Passport information

Passport descriptors: Accession number, genus, species, collecting or donor organization name, collector or donor number, origin, year

Characterization and evaluation information

Evaluation status: Data evaluated and following descriptors were used:

Accession number, genus/species, growth habit, flower colour, tendril, leaf shape, days to maturity.

Documentation information: Yes. Documentation stored in Dbase-IV/Foxpro. Crop germplasm catalogue is freely available to the users.

Seed conservation/regeneration information

Responsibility for conservation: Plant Genetic Resources Institute/Seed Preservation and Genebank Laboratory.

Moisture content at harvest: 15%

Moisture content at storage: 7-8%

Germination at storage: 95%

Amount of seed in storage: 500 g

Availability of germplasm: On mutual exchange basis

Quarantine regulation: None

Contact persons details

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SSO(PGRI), Park Road,
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Website: http://www.vir.nw.ru/

Curator/person in-charge

Burlyaeva Marina Olegovna

Details of holdings

1240 accessions (489 wild species, 89 Russian landraces, 630 foreign landraces, 11 Russian breeding lines, 21 foreign breeding lines): *L. aphaca* L., *L. aureus* (Stev.) Brandza, *L. cicera* L., *L. davidii* Hance, *L. gmelinii* Fritsch, *L. hirsutus* L., *L. incurvus* Roth, *L. laxiflorus* (Desf) O. Kuntz, *L. litvinovii* Lljin, *L. maritimus* Bigel, *L. miniatus* Bieb. ex Stev., *L. niger* Bemh., *L. nissolia* L., *L. palustris* L., *L. pisiformis* L., *L. pratensis* L., *L. roseus* Stev., *L. sativus* L., *L. sphaericus* Retz., *L. sylvestris* L., *L. tuberosus* L., *L. vernus* (L.) Bemh.

Duplicate conservation site: State Seed Storage Facility

Indigenous collections: 589 accessions

Exotic collections: 651 accessions

Future priority areas of collection:

Areas with endemic species:
Altai region: *L. frolovii* Rupr., *L. krylovii Serg., L. ledebouri* Trautv.,

Far East, shores Bruce Bay: *L. subalpinus* (Herb.) G. Beck

Daghestan, Beschtau mountain: *L. miniatus* Bleb. ex Stev. Ural mountain ridge - *L. litvinovii* lljin.

Europe: Ladoga-Ilmen region: *L. laevigatus* (Waldst.) Gren., *L. linifolius* (Reichard) Bassler, *L. maritimus* Bigel, *L. pallescens* (Bieb.) C. Koch., *L. palustris* L., *L. pisiformis* L., *L. pratensis* L., *L. sylvestris* L., *L. vernus* (L.) Bemh.

Black Sea coast: *L. incurvus* (Roth) Roth, *L. niger* L. Bemh., *L. nissolia* L., *L. pallescens*, *L. palustris, L. pannonicus* (Jacq) Garcke, *L. pisiformis*, *L. pratensis*, *L. sativus* L., *L. sylvestris, L. tuberosus* L., *L. vernus*

Volga-Kama region: *L. gmelinii* Fritsch, *L. humilis* (Ser.) Spreng., *L. palustris*, *L. pisiformis*, *L. pratensis*, *L. sativus*, *L. sylvestris*, *L. tuberosus*, *L. vernus*

Zavoljski region : *L. incurvus*, *L. niger*, *L. pallescens*, *L. palustris*, *L. pannonicus*, *L. pisiformis*, *L. pratensis*, *L. sylvestris, L. tuberosus*, *L. vernus*

Caucasus: Transcaucasus: *L. aphaca*, *L. aureus*, *L. cicera*, *L. cyaneus*, *L. hirsutus*, *L. incurvus*, *L. laxiflorus*, *L. miniatus*, *L. niger*, *L. nissolia*, *L. palustris*, *L. pallescens*, *L. pannonicus*, *L. pisiformis*, *L. pratensis*, *L. roseus*, *L. sativus*, *L. sphaericus*, *L. sylvestris*, *L. tuberosus*, *L. vernus*,.

West Siberia: Ob river region: *L. gmelinii, L. humilis, L. palustris, L. pannonicus, L. pilosus, L. pisiformis, L. pratensis, L. tuberosus, L. vernus*

Verhne-Tobolsk region: *L. gmelinii, L. litvinovii, L. palustris, L. pisiformis, L. pratensis, L. tuberosus, L. vernus*

Altai region: *L. frolovii, L. gmelinii, L. humilis, L. krylovii, L. ledebouri, L. palustris, L. pannonicus, L. pisiformis, L. pratensis, L. tuberosus, L. vernus*

East Siberia- Dauriya: *L. gmelinii*, *L. humilis, L. komarovii, L. pilosus*, *L. pratensis*, *L. quinquenervius* and *L. sativus*

Far East- Ussuriysk region: *L. davidii*, *L. humilis*, *L. maritimus*, *L. pilosus*, *L. quinquenervius*, *L. subalpinus*.

Arctic, Arctic Siberia, Arctic Europe: Nijnekolimsk region, Chucot, Anadir - *L. maritimus*, *L. pilosus*.

Passport information

Passport descriptors:

Crop name, Accession number, Genus, Species, Subtaxa, Accession name, Country of origin, Country of doner, Form on life, Status of simple. Passport descriptors database is available on "VIR Website" http:// www.vir.nw.ru/data/dbf.htm

Characterization and evaluation information

Evaluation status:

"Descriptor for the genus *Lathyrus* L.", St. Petersburg, N.I. Vavilov Research Institute of Plant Industry, 1975 was used for characterization and evaluation.

Site of characterization:

Ekateminskaya experimental station VIR, the Tambov region:

Latitude: 43°N; Longitude: 55°E; Elevation: 200 m; Soil texture: typical chemozem soil; Normal sowing month: April; Normal harvest month: August - September; Field spacing: distance between plants: 15 cm, between rows: 30 or 45 cm; Average climate during growing season: temperature range in July +22°C, in January -11°C, Annual rainfall: 469 mm.

Pushskinskaya experimental station, VIR, Leningrad region:

Latitude: 60°N; Longitude: 33°E; Elevation 200 m; Soil texture: turfy-podzolic soil; Normal sowing month: May; Normal harvest month: August - September; Field spacing (distance between plants 15 cm, between rows 30 cm); Average climate during growing season: temperature range in July + 18°C, in January – 8°C, annual rainfall: 600 mm.

Ustimovskaya experimental station, Ukrain, Poltava region:

Latitude: 49°N; Longitude: 33°E; Elevation 200 masl; Soil texture: massive less humus chemozem; Normal sowing month: April; Normal harvest month: August - September; Field spacing: distance between plants 15 cm; between rows 30 or 45 cm; Average climate during growing season: temperature range in July +22°C, in January -8°C, annual rainfall : 460 mm.

Documentation information: Passport Database is available on "VIR Website" http://www. vir.nw.ru/data/dbf.htm

Catalogues of introduction and evaluation data are in working notebooks

Promising accessions: High protein varieties: K VIR: 287, 783, 802, 849, 922, 970, 1160, 1185, 1187, 1253 and 1298

Fungus disease resistant varieties (rust fungi - *Uromyces pici* Pers; *Ascochyta orobi* Sacl.): K VIR: 703, 955, 984, 1307, 1209, 1247, 1253 and1300

High yielding varieties: K VIR: 12, 21, 287, 1249, 1251, 1253, 1298, 1307, 1392, 1394, 1511 and 1522

Utilization of genetic resources

Utilization of germplasm: VIR accessions used for development to improve cultivars. Cultivars released for general cultivation: Kormovaya-31, Poltavskaya-2, Stepnaya-287, Stepnaya-12, Stepnaya-21, Stepnaya-34, Krasnogradskaya-1, Krasnogradskaya-2, Krasnogradskaya-4, Rasnogradskaya-5, Krasnogradskaya okruglaya-2, Krasnodarskaya-55, Chakinskaya-5, Chakinskaya-18, Chakinskaya-308, Chakinskaya-3915, Kubanskaya-492, Dneprovskaya, Gorochovidnaya, Krupnolistnaya and Golubka

Seed conservation/regeneration information

Responsibility for conservation: N.I. Vavilov Research Institute of Plant Industry and State Seed Storage Facility Collections.

Maintenance of collection: Base and Working.

Moisture content at storage: 5-6%.

Germination at storage: 95%.

Amount of seed in storage: 5000 seeds.

Frequency of regeneration: Working collection regenerated in 7-8 years. Collection stored in State Seed Storage Facility regenerated when viability of seed is lower than 95%.

Availability of germplasm: Collection is available for free exchange

Quarantine regulation: Seed Exchange needs a special Quarantine Certificate

***Lathyrus* species reported from the country/region:** *L. aphaca* L., *L. aureus* (Stev.) Brand-za, *L. cicera* L., *L. cyaneus* (Stev.) C. Koch, *L. davidii* Hance, *L. frolovii* Rupr., *L. gmelinii* Fritsch, *L. hirsutus* L., *L. humilis* (Ser.) Spreng., *L. incurvus* (Roth) Roth, *L. krylovii* Serg., *L. laevigatus* (Waldst.) Gren., *L. laxiflorus* (Desf) O. Kuntz, *L. ledebouri* Trautv., *L. linifolius* (Reichard) Bassler, *L. litvinovii* lljln, *L. maritimus* Bigel, *L. miniatus* Bieb. ex Stev., *L. niger* (L.) Bemh., *L. nissolia* L., *L. pallescens* (Bieb.) C. Koch., *L. palustris* L., *L. pannonicus* (Jacq) Garcke, *L. pilosus* Cham., *L. pisiformis* L., *L. pratensis* L., *L. quinquenervius* (Miq.) Litv. ex Kom. *L. roseus* Stev., *L. sativus* L., *L. sphaericus* Retz., *L. subalpinus* (Herb.) G. Beck, *L. sylvestris* L., *L. tuberosus* L., *L. vernus* (L.) Bemh.

General information

Average production: 98-101 t/ha depending on the region

Uses: As grain and forage

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Curator/person in-charge:

Celia de la Cuadra
Lucia de la Rosa

Details of holdings

Total accessions: 307; Total species: 14
Lathyrus amphicarpos (2), *L. annuus* (4), *L. aphaca* (1), *L. cicera* (174), *L. clymenum* (13), *L. hirsutus* (1), *L. latifolius* (1), *L. nissolia* (1), *L. ochrus* (7), *L. pratensis* (2), *L. sativus* (93), *L. setifolius* (1), *L. sphaericus* (1), *L. tingitanus* (6)

Indigenous collections: 275 accessions

Holdings by province/ state of collection: Andalucia (27), Baleares (12), Canarias (8), Cantabria (9), Catalura (3), Castilla-leon (143), Castilla-la Mancha (49), Extremadura (8), Galicia (1), Madrid (5), Murcia (3), Navarra (1), Valencia (6)

Exotic collections: 32 accessions

Holding by country of collection: Peru (8), unknown (24)

Future priority areas of collecting: The CRF made expeditions multicultural. The future priority areas of collecting are Almeria (Andalucia) and Murcia

Passport information

Passport descriptors: Designation of the base Genebank: country and institution code, accession number, acquisition number, acquisition year. Designation of the active genebank: donor institution, donor identification number, identification code, identification number of associated gene bank 1, identification number of associated gene bank 2, genus, species, subtaxa, common name, originator in case of breeding material, breeding method, collectors number, date of collection, country.

Characterization and evaluation information

Evaluation status: Preliminary characterization of *L. sativus* and *L. cicera* using CRF descriptors

Site of characterization: CRF. Finca "La Canaleja", Autovia de Aragón km 36.200 Alcala de Henares (Madrid-Spain).

Soil texture: Sandy loam; Normal sowing month: October-November; Normal harvest month: June; Field spacing: 5 cm between plant and 35 cm between rows; Average temperature range during growing station (October-June): Max. 18.219°C, Min. 3.592°C and Mean 10.539°C; Annual rainfall average: 469 mm, mainly in October, November, April and May; Relative humidity during growing station: Max. 93.55%, Min. 43.40% and Mean 70.75%; EVT potential Soil class: 877.4 mm (Penmann method); Order: Alfisol, Suborder: Xeralf, Group: Haploxeralf; Climate of characterization site: Mediterranean temperate.

Documentation status: Available as computer print out and in electronic format

Seed conservation/regeneration information

Responsibility for conservation: Centro de Recursos Fitogéneticos (CRF)

Maintenance of collection: Base collection and Active collection

Duration of storage: Unlimited

Moisture content at harvest: 10%

Moisture content at storage: 6-7%

Germination at storage: >85%

Amount of seed in storage: 2000 seeds

Frequency of regeneration: Every 10 years germination tests are being made. If the germination rate decreases at 85% of initial germination, a regeneration of the accession is made

Availability of germplasm: The collection is available for free exchange

Quarantine regulation: No specific permits required for germplasm exchange

***Lathyrus* species reported from the country/region:** *L. amphicarpos*, *L. angulatus* L., *L. annuus* L., *L. aphaca* L., *L. articulatus* L., *L. bauhinii* Genty, *L. cicera* L., *L. cirrhosus* Ser., *L. clymenum* L., *L. filiformis* (Lam.) Gay, L. *heterophyllus* L., *L. hirsutus* L., *L. inconspicuus* L., *L. japonicus* Willd., *L. laevigatus* (Waldst. et Kit.) Gren., *L. latifolius* L., *L. montanus* Bernh., *L. niger* (L.)

Bernh., *L. nissolia* L., *L. ochrus* (L.) DC., *L. palustris* L., *L. pannonicus* (Jacq.) Garcke, *L. pratensis* L., *L. saxatilis* (Vent.) Vis., *L. sativus L.*, *L. setifolius* L., *L. sphaericus* Retz., *L. sylvestris* L., *L. tingitanus* L., L. *tremolsianus* Pau, *L. tuberosus* L., *L. vernus* (L.) Bernh.

(Source: Garcia-Rollan, M. 1985. Claves de la Flora de España).

General information

Area under cultivation: *L. sativus*: 400 ha

Average production: 0.38 t/ha

Uses: Forages and seed

Contact persons details

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Curator/person in-charge: Charles J. Simon

Details of holdings

Lathyrus annuus (5), *L. aphaca* (33), *L. basalticus* (1), *L. blepharicarpus* (1), *L. cassius* (1), *L. chloranthus* (1), *L. chrysanthus* (1), *L. cicera* (33), *L. cirrhosus* (1), *L. clymenum* (21), *L. davidii* (1), *L. gorgoni* (1), *L. grimesii* (3), *L. heterophyllus* (1), *L. hierosolymitanus* (4), *L. hirsutus* (19), *L. inconspicuus* (29), *L. incurvus* (1), *L. japonicus* (7), *L. japonicus* ssp. *japonicus* (1), *L. japonicus* ssp. *maritimus* (1), *L. laevigatus* (1), *L. latifolius* (11), *L. marmoratus* (1), *L. nervosus* (1), *L. neurolobus* (1), *L. nevadensis* (1), *L. nissolia* (3), *L. ochrus* (25), *L. odoratus* (29), *L. polymorphus* ssp. *polymorphus* (1), *L. pratensis (25), L. pseudocicera* (1), *L. sativus* (242), *L. saxatilis* (1), *L. sphaericus* (2), *L. subandinus* (1), *L. sylvestris* (24), *L. szowitsii* (1), *L. tingitanus* (4), *L. tuberosus* (13), *Lathyrus* sp. (115)

Duplicate conservation site(s): None

Indigenous collections: 48 accessions

Holdings by province/state of collection: Alabama (3), Arkansas (1), California (3), Colorado (1), Idaho (2), Kansas (1), Maryland (9), Michigan (2), Minnesota (1), Nebraska (4), New York (2), Oregon (9), Pennsylvania (1), Utah (1), Washington (4), Wyoming (1), unknown (3)

Exotic collections: 481 accessions.

Holdings by country of collections: Afghanistan (24), Albania (5), Algeria (1), Australia (18), Bangladesh (5), Belgium (4), Bolivia (1), Brazil (2), Bulgaria (7), Canada (21), China (4), Cyprus (39), Czechoslovakia (5), Egypt (1), Ethiopia (28), Former Soviet Union Caucasus (8), Former Soviet Union (21), France (4), Germany (2), Greece (10), Guatemala (1), Hungary (14), India (21), Iran (23), Israel (12), Italy (9), Jordan (1), Kazakhstan (2), Libya (1), Mongolia (1), Morocco (4), Nepal (4), Netherlands (3), New Zealand (1), Norway (2), Pakistan (27), Poland (3), Portugal (16), Romania

(2), Russian Federation (5), Slovakia (2), South Africa (1), Spain (7), Sudan (1), Sweden (2), Syria (12), Tajikistan (2), Tunisia (4), Turkey (59), Uruguay (1), Uzbekistan (11), Yugoslavia (12), unknown (5)

Future priority areas of collecting: NPGS has an ongoing program for explorations, but at this time no specific interest for collecting *Lathyrus*

Passport information

Passport descriptors: The prescribed passport descriptions for the NPGS are: source number (collector and/or donor), latitude, longitude, elevation, quantity collected, collection form (i.e. seed, seedling, cutting), number of plants sampled, locality description (relative to local landmarks), habitat description (site soil type, slope, precipitation, surrounding flora, sunlight exposure), comments (direct and indirect). The NGPS website has hypertext links to names and addresses of living collectors and donors, when they are known, for each accession.

The USDA *Lathyrus* collection are modesty utilized collection relative to collections of others genera. Very little breeding work was done on this species in the country. Distribution of this collection is directed almost entirely to people interested in taxonomy programs. Following are the counts of descriptor data for *Lathyrus*: 100 seed weight, maximum dehiscence, minimum dehiscence, flower colour, maximum height, minimum height, maximum leaf number, minimum leaf number, maximum leaf size, minimum leaf size, maturity, maximum pod length, minimum pod length, maximum seed production, maximum seedling vigour, minimum seedling vigour, maximum survival and Root-knot Nematode resistance. The Website defines these descriptors.

Characterization and evaluation information

Documentation status: A database management unit (DBMU) that authors and maintains a computer inventory application called the Germplasm Resources Information Network (GRIN). The most complete and most easily used access to documentation can be found on the internet at the URL listed above. For people without internet access, an alternative is something called PC-GRIN which is a stand-alone desktop database program based on a resident kernal of MS

Foxpro. A client interested in a specific species, genus, or group of genera can request a copy of PC-GRIN free of charge. The complete content of the master database for the requested taxa will be put on disk at the DBMU, and is sent to the client, with a manual on how to use it.

Promising accessions: The only indications of special characteristics of accessions would be found in the narrative for the accession. This would be information received along with the accession. There are comment fields in the database that are linked to descriptors, which may have narrative observations noted during evaluation, but since evaluation on *Lathyrus* is presently dormant, little will be found there.

Utilization of genetic resources

Utilization of germplasm: For germplasm sent domestically, there are regional representatives across the US that send questionnaires to clients periodically, and sometimes these questionnaires are actually filled out and returned.

Seed conservation/regeneration information

Responsibility for conservation: The regeneration and maintenance for *Lathyrus* accessions are being done at Western Regional Plant Introduction Station, Pullman.

Maintenance of collection: The accessions are maintained at 4°C with 25% Relative humidity in Pullman seed storage facility. In addition to inventory at Pullman, 1500-3000 seeds are sent for each accession, when possible, for the base collection for National Seed Storage Laboratory (NSSL) at Fort Collins, Colorado, where germinability tests are performed and long-term storage is done at -20°C.

Moisture content at harvest: The summer in Pullman are dry, so the moisture content on the vines at harvest is quite low. Vines are harvested into mesh begs and are hung for several weeks in a sheaf building to assure upon threshing the seed will be quite dry.

Germination at storage: Results of germination tests are very rarely lower than 90% for *Lathyrus*

Amount of seed in storage: Active collection - Approximately 500 g of seed for each accession

Base collection: 1500-3000 seeds for each accession

Frequency of regeneration: Because *Lathyrus* seed stores well in their seed storage facilities, and utilization of this collection is modest, very little regeneration on the collection is being done

Availability of germplasm: All accessions which have sufficient quantity of seed are freely available to any person with a *bona fide* research or development interest

Quarantine regulation: Because there is almost no commercial *Lathyrus* production in this country, the quarantine restrictions that we observe for *Lathyrus* seed coming into this country are not very strict. APHIS has three level of restriction for seeds coming into this country. Many annual species and grasses are free to come into America with no restriction i.e., they don't need a permit and need not be processed through the quarantine office.

For seed that we send out to other countries, the rules set by the recipient country are observed strictly.

***Lathyrus* species reported from the country/region:** Several *Lathyrus* species that occur naturally have been recorded. Twenty three *Lathyrus* species have been reported from Northwestern US, of which 7 came from Europe and Asia. The European immigrants are: *L. aphaca, L. hirsutus, L. latifolius, L. odoratus, L. pratensis* and *L. tingitanus. L. pilosus* came from the Eastern US, and *L. sphaericus* came from Eurasia. True natives in this region are *delnorticus, hirsutus, holochlorus, japonicus, jepsonii, lanszwertii, latifolius, nevadensis, palustris, pauciflorus, polyphyllus, sulphureus, tracyi* and *vestitus.*

True natives of Southwestern US are: *L. arizonicus, L. brachycalyx, L. eucosmus, L. graminifolius, L. jepsonii, L. laxiflorus, L. leucanthus, L. pauciflorus, L. polymorphus, L. splendens, L. sulphureus, L. vestitus* and *L. zionis.* The European species *L. odoratus* and *L. tingitanus* are also found here.

Rocky Mountains and neighbouring region have: *L. arizonicus, L. bijugatus, L. brachycalyx, L. eucosmus, L. lanszwertii, L. leucanthus, L. nevadensis, L. ochroleucus, L. paciflorus, L. rigidus* and *L. zionis* along with the *L. latifolius, L. odoratus* and *L. ubiquitous* from Europe. A new species recently found in nothern Nevada called *L. grimesii* is now *in situ* accession in the collection.

Collection from the central plains contains: *L. ochroleucus, L. palustris, L. pusillus* and L. *venosus* as well as the usual European species.

From the Northwestern US: *L. japonicus, L. latifolius, L. ochroleucus, L. odoratus, L. pratensis, L. palustris, L. tuberosus and L. venosus* have been collected.

L. hirsutus, L. myrtifolius, L. palustris, L. pusillus, and *L. venosus* have been collected from the Southeastern US.

General information

Area under cultivation: There is nearly no commercial production of grain *Lathyrus* in this country. As an ornamental crop *L. odoratus* is a common vine in many yards and *L. latifolius* is sometimes found as well.

Uses (current/potential): Ornamental and green manure

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ACRONYMS

APHIS	Animal and Plant Health Inspection Service
ATCFC	Australian Tropical Crops and Forages Collections
ATFCC	Australian Temperate Field Crops Collection
BARI	Bangladesh Agricultural Research Institute
BOAA	β-N-Oxalyl Amino Acid
CBD	Convention on Biological Diversity
CGIAR	Consultative Group on International Agricultural Research
CLIMA	Centre for Legume in Mediterranean Agriculture
CoP	Conference of the Parties
CRF	Centro de Recursos Fitogneticos
CSIRO	Commonwealth Scientific and Industrial Research Organization
DBMU	Database Management Unit
DOPI	Department of Primary Industry
FAO	Food and Agricultural Organization of the United Nations
GD	Genetic Diversity
GE	Genetic Erosion
GPA	Global Plan of Action
GRIN	Germplasm Resources Information Network
ICARDA	International Center for Agriculture Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDRC	International Development Research Centre
IGAU	Indira Gandhi Agricultural University
ILRI	International Livestock Research Institute
INA	Institut National Agronomique
IPGRI	International Plant Genetic Resources Institute
IPK	Leibniz Institute of Plant Genetics and Crop Plant Research
LGRN	Lathyrus Genetic Resources Network
MTA	Material Transfer Agreement
NARI	Nepal Agricultural Research Institute
NCARTT	National Center for Agricultural Research and Technology Transfer
NBPGR	National Bureau of Plant Genetic Resources

NPGS	National Plant Germplasm System
NSSL	National Seed Storage Laboratory
ODAP	β-N-Oxalyl-L-α,β–Diaminopropionic Acid
PGR	Plant Genetic Resources
PGRC	Plant Genetic Resources Centre
PGRFA	Plant Genetic Resources for Food and Agriculture
PGRI	Plant Genetic Resources Institute
SINGER	System-wide Information Network for Genetic Resources
USDA	United States Department of Agriculture
VIDA	Victoria Institute for Dryland Agriculture
VIR	N.I. Vavilov Research Institute of Plant Industry
WADA	Western Australian Department of Agriculture
WSSD	World Submit on Sustainable Development

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