



PLANT FACT SHEET

Lupinus mutabilis Sweet

GENUS *Lupinus* FAMILY Fabaceae

COMMON NAMES Andean lupin

EDIBLE PARTS AND USES

Edible parts: Seeds, Vegetable

The seeds are soaked overnight and the water discarded, then the beans cooked.

CAUTION: The seeds contain poisonous alkaloids which are bitter, before soaking and washing. Varieties free of alkaloid are available.

Up to 15% of lupin flour has been added to bread flour.

The seeds are used in soups, stews and made into flour.

DESCRIPTION

An erect annual herb. It grows to 1.5 m tall. It has a thick taproot. It can keep growing from year to year. The stems are branched, woody and mostly without hairs. The leaves have leaflets arranged like fingers on a hand. There are 7-9 leaflets. These are oblong and about 6 cm long by 1.4 cm wide. They are hairy underneath. The flowers are large and have a smell. They are about 2 cm long. The standard is white and blue with a yellow mark in the centre. Many flowers (50-70%) fall off without forming pods. The fruit is a pod. It is finely hairy and does not split open before falling in cultivated varieties. The pods are oblong but pointed at both ends. There can be 130 pods on a plant. The seeds bulge towards the centre. They are 8-10 mm long and 6-8 mm wide. The colour can vary from black to light grey.

HABITAT

A tropical plant. In Papua New Guinea it grows in high altitude regions at about 2,600 m. It has cold resistance. In the Andes they grow from 2,000 to 3,850 m altitude. It does not do well under high humidity and cannot tolerate drought at flowering. It requires 350-800 mm rainfall. It can grow in arid places.

PRODUCTION

Cultivation

Plants are grown from seed. Rates of 100-120 kg per hectare are used. The seed is broadcast.

Harvesting and Seed Production

The growing cycle varies between 150 and 360 days. Average yields in the Andes are 300-600 kg per hectare although yields from 3,500 kg to 7,000 kg are possible.

NOTES

Cooked seeds are 20% protein. There are about 200 *Lupinus* species.

REFERENCES

- Ambasta, S.P. (Ed.), 2000, The Useful Plants of India. CSIR India. p 341
Andean Ethnobotanical Collections.
- Bremness, L., 1994, Herbs. Collins Eyewitness Handbooks. Harper Collins. p 185
- Brickell, C. (Ed.), 1999, The Royal Horticultural Society A-Z Encyclopedia of Garden Plants. Convent Garden Books. p 636
- Brit. fl. gard. 2: t. 130. 1825
- Castillo, R. O., 1995, Plant Genetic Resources in the Andes: Impact, Conservation, and Management. Crop Science 35:355-360
- Facciola, S., 1998, Cornucopia 2: a Source Book of Edible Plants. Kampong Publications, p 107
- Franquemont, C., et al, 1990, The Ethnobotany of Chinchero, an Andean Community in Southern Peru. Fieldiana Botany No. 24 p 81
- Gori, B., et al, 2022, Understanding the diversity and biogeography of Colombian edible plants. Scientific Reports 12:7835
- Hernandez Bermejo, J.E., and Leon, J. (Eds.), 1994, Neglected Crops. 1492 from a different perspective. FAO Plant Production and Protection Series No 26. FAO, Rome. p18, 139
- ILDIS Legumes of the World <http://www.ildis.org/Legume/WebINFOODSUpdatedFGU-list.xls>
- Kays, S. J., and Dias, J. C. S., 1995, Common Names of Commercially Cultivated Vegetables of the World in 15 languages. Economic Botany, Vol. 49, No. 2, pp. 115-152
- Kermath, B. M., et al, 2014, Food Plants in the Americas: A survey of the domesticated, cultivated and wild plants used for Human food in North, Central and South America and the Caribbean. On line draft. p 500
- Kiple, K.F. & Ornelas, K.C., (eds), 2000, The Cambridge World History of Food. CUP p 1718
- Lazarides, M. & Hince, B., 1993, Handbook of Economic Plants of Australia, CSIRO. p 153
- Macbride, J. F., 1942, Flora of Peru. Leguminosae. Field Museum Natural History. Chicago. p 493
- Macmillan, H.F. (Revised Barlow, H.S., et al) 1991, Tropical Planting and Gardening. Sixth edition. Malayan Nature Society. Kuala Lumpur. p 325
- Plants for a Future database, The Field, Penpol, Lostwithiel, Cornwall, PL22 0NG, UK.
<http://www.scs.leeds.ac.uk/pfaf/>
- Royal Botanic Gardens, Kew (1999). Survey of Economic Plants for Arid and Semi-Arid Lands (SEPASAL) database. Published on the Internet; <http://www.rbgekew.org.uk/ceb/sepasal/internet> [Accessed 29th April 2011]
- Small, E., 2009, Top 100 Food Plants. The world's most important culinary crops. NRC Research Press. p 331
- Smith, P.M., 1979, Lupin, in Simmonds, N.W., (ed), Crop Plant Evolution. Longmans. London. p 312
- Tapia, M. E., The role of under-utilised plant species with regard to increased food security and improved health of poor people, in mountain regions. IIAP-PNUD/Peru
- Terra, G.J.A., 1973, Tropical Vegetables. Communication 54e Royal Tropical Institute, Amsterdam, p 57
- Torre, de la, L., et al, 2008, Enciclopedia de las Plantas Útiles del Ecuador. Herbario QCA. Pontificia Universidad Católica del Ecuador. p 350
- Ulian, T., et al, 2020, Unlocking plant resources to support food security and promote sustainable agriculture. Plants, People, Planet. 2020;2:421-445.
- Universidad Nacional de Lujan. <http://www.unlu.edu.ar/~argenfood>
- USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). [Online Database] National Germplasm Resources Laboratory, Beltsville, Maryland. Available: www.ars-grin.gov/cgi-bin/npgs/html/econ.pl (10 April 2000)
- Vandebroek, I. & Sanca S., Food Medicines in the Bolivian Andes. Book chapter Eating and Healing p 273
- van Wyk, B., 2005, Food Plants of the World. An illustrated guide. Timber press. p 233
- Verdcourt, B., 1979, Manual of New Guinea Legumes. Botany Bulletin No 11, Division of Botany, Lae, Papua New Guinea. p 589
- Wikipedia
- Wiersema, J. H. & Leon, B., 2013, World Economic Plants. A Standard Reference CRC Press. 2nd Ed. p 419
- World Checklist of Useful Plant Species 2020. Royal Botanic Gardens, Kew

PROVIDED BY Food Plants International

French, B.R. & Maynard, A.R. Food Plants International Database. Food Plants International

LICENCE CC BY-NC-SA 3.0

ONLINE FACT SHEET <https://www.echocommunity.org/en/resources/15162f8b-424c-403e-8da8-003029dc28ba>