

LIMA BEAN

Butter Bean, Sieva Bean, Haba Bean, Madagascar bean

Phaseolus lunatus

Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Phaseolus lunatus is a vining (indeterminate) or bush-type (pseudo-determinate) legume from Central and South America. Vining types are vigorous, perennial, and reach 2-6 m in length. Bush-type cultivars are annuals and reach heights of 0.25-1 m. Leaves are trifoliate, present alternately on the stem, and range from pubescent to glabrous. Inflorescence can reach 15 cm in length and bear up to 25 white-to-violet flowers. Pod lengths are 5-12 cm and contain 2-4 seeds each. Pod and seed shape, size, and color are highly variable and dependent upon cultivar.

Uses

P. lunatus seeds and young pods are a common edible pulse globally. Vining cultivars, such as 'Seven Year Lima,' can exhibit vigorous growth, serving well as green manure cover crops. Biomass can be utilized as fresh forage for livestock, or preserved as silage or hay.

Common Names

- Haitian Creole
 - Pwa Souche
- French
 - Pois Souche
- Korean
 - 리마 콩
- Malay
 - kacang China
 - kekara

Cultivation

- **Elevation** – up to 2800 m
- **Rainfall** – 400-4300 mm
- **Soil Types** – 4.5-8.4 pH; well-drained soils
- **Temperature Range** – 13-34°C
- **Day Length Sensitivity** – cultivar dependent: some are insensitive, and some cultivars require day lengths less than 12 hours to flower
- **Light** – prefers full sun

Planting is usually done at the beginning of the rainy season. However, lima bean requires a dry period for seeds to mature. Heavy rainfall during flowering period may reduce fertilization of flowers. Well-adapted to lowland tropics, especially the highly leached, infertile soils of the more humid regions, but prefers well-drained, well-aerated neutral (pH 6-7) soils.

Seeds should be directly sown in the field at spacings of 20-30 cm within-row and 60-100 cm between-row. Vining cultivars should be allowed greater space if no trellis structures are provided.

Harvesting and Seed Production

Annual, bush-type cultivars mature and are ready to harvest 60-110 days after planting. Perennial, vining cultivars mature and are ready to harvest 240-330 days after planting; they can be grown as annuals, with biomass cut and left in place or used as fodder. Young pods and fresh seeds can be harvest earlier. Harvest yields are generally greater for vining types than for bush cultivars. Fodder can be harvested through regular pruning of vining cultivars.

Pests and Diseases

Common pests and diseases of *P. lunatus* include web blight and bacterial blight (*Rhizoctonia solani*; *Xanthomonas campestris*), Fusarium root rot (*Fusarium solani*), and white flies and aphids, each transmitting pestilent viruses. Root-knot nematodes can cause significant yield loss.

Cooking and Nutrition

Young seeds and pods can be cooked in stir-frys and soups. Mature seeds should be reconstituted and can be utilized in soups, stews, or dry seeds can be made into flour for pastries and porridges. As with most beans, adequate cooking is necessary to eliminate antinutrients.

References

AVRDC. Know You IVs: Lima Bean. IV Leaflet No. 3. AVRDC, The World Vegetable Center. Available: http://203.64.245.173/iv_sea/publications/limabean.pdf.

Baudoin, J.P., 2006. *Phaseolus lunatus* L. Record from PROTA4U. Brink, M. & Belay, G. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources

végétales de l'Afrique tropicale), Wageningen, Netherlands. <https://www.prota4u.org/database/protav8.asp?g=pe&p=Phaseolus+lunatus+L..> Accessed 16 October 2019.

Ecocrop. 1993-2007. *Phaseolus lunatus*. Food and Agriculture Organization, Rome, Italy. ecocrop.fao.org/ecocrop/srv/en/dataSheet?id=1666. Accessed 16 October 2019.

Heuzé V., Tran G., Sauvant D., Bastianelli D., Lebas F., 2015. *Lima bean (Phaseolus lunatus)*. Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. <https://www.feedipedia.org/node/267>. Accessed 16 October 2019.