GRASS PEA

Indian Vetch, Chickling Pea, Indian Pea

Lathyrus sativus Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Originating in the Eastern Mediterranean, this leguminous plant was domesticated 8,000 years ago and now grows mostly in Ethiopia, India, China, and surrounding countries. Grass pea can be grown as an annual crop in poor, dry or flooded soil, in arid and semi-arid regions, at high temperatures or in areas subject to frost. Grass Pea is the least preferred among the common food legumes, but is attractive to resource-poor farmers because of its adaptation to harsh conditions such as drought and waterlogging. Therefore, Grass Pea is a useful crop for dry and poor soils and a rescue crop when other crops have failed. In Asia it is broadcast in flooded rice fields two weeks before harvest to serve as a second, soil-enriching crop. In some temperate regions, Grass Pea is sown after rye, or on fallow land.

Uses

Grass Pea is extremely drought tolerant making it a valuable food for cattle when other crops have failed. Grass Pea is valued as a nitrogen-fixing forage that produces a crop of leaves and pods with as little as 6.25 cm (2.5 in) of annual rainfall. The dry peas can only be eaten by humans in very moderate amounts. (See toxicity warning below.) Varieties that are low or nearly toxin-free have been developed but are still in the process of multiplication and distribution. When fed alone, fresh young plants are reported to be harmful to horses; however, cattle, rabbits, and sheep can consume large amounts without ill effects.

Cultivation

- Cultivation: Grass Pea grows well in the subtropics as a winter crop; tolerates waterlogging and moderate salinity. Grass Pea effectively nodulates with *Rhizobium leguminosarum*.
- Rainfall: 400-650 mm per year (16-26 in)
- Temperature: 10-25° C (50-75° F)
- Soil type: any
- Altitude: 1700-2700 m (5600-8900 ft)

Harvesting and Seed Production

After 86-127 days, blue, purple, pink or red flowers produce oblong, flat, pods, 4-7 mm diameter containing 3-5 brown and white mottled seeds. When leaves turn yellow and the pods turn grey, plants should be cut and left in the field or on the threshing floor to dry for 7-8 days. The dried peas can be separated from the pods by beating with sticks or letting cattle walk on them, then dried more before storage. The chaff can be fed to cattle or used as mulch. Though Grass Pea plants are self-pollinating, to maintain the purity of low-toxin varieties, the seeds should be isolated from older varieties during threshing and storage. Grass Pea's yield per acre is 3 times more than soybeans and 2X that of wheat.

Pests and Diseases

This crop is resistant to most pests (except thrips) probably due to the amino acid that gives it such great tolerance for extremes in climate. Downy and powdery mildew can be a problem in SE Asia. In Ethiopia a large number of accessions and breeding lines introduced from ICARDA are resistant to powdery mildew.

Cooking and Nutrition

Pods are boiled and salted for snacks, tender leaves and pods cooked as vegetables, and dry seeds can be roasted, ground into flour or cooked for dahl and porridge. The neurotoxin contained in the seed can cause paralysis of the legs, (lathyrism) in adults and death in children. 90% of the toxins in the older varieties of dry Grass Peas can be removed by boiling or baking, though some nutritional benefit may be lost by extended cooking. Only the low-toxin varieties can be consumed in large quantity. Dry Grass Peas contain lysine and 28% protein, twice as much as wheat.

References

Heuzé V., Tran G., Hassoun P., Lessire M., Lebas F., 2016. *Grass pea (Lathyrus sativus)*. Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. https://www.feedipedia.org/node/285 *Last updated on April 19, 2016, 15:36*

http://ecocrop.fao.org/ecocrop/srv/en/cropView?id=7164

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