

HORSE GRAM

Madras Gram, Kulthi Bean

Macrotyloma uniflorum

Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Horse gram is a dense, low-growing, nitrogen-fixing, annual crop grown for forage and human consumption. It is usually sown as an intercrop but can also be used as a green manure or cover crop. It will tolerate drought conditions, poor soil, and some salinity.

Uses

At all stages of its growth the stems, leaves and young pods of Horse Gram can be used as a fodder plant for animals. Horse Gram is sown as a green manure or cover crop. As a legume, it fixes atmospheric nitrogen in a form usable by plants, therefore reducing the need for nitrogen fertilizer. The protein content of the seeds in the red-seeded variety is as high as 25% and 18% in the foliage of mature plants. The seeds are used for their medicinal properties as a diuretic and astringent. The rapidly growing vines form a dense mat from 30-60 cm high and prevent soil erosion.

Common Names

- Spanish
 - Frijol kulthi
 - gramo de Madrás

Cultivation

- Elevation: 0-1,500 m (5,000 ft)
- Light: full-sun
- Rainfall: 380-900 mm (15-35 in); drought-hardy
- Temperature: 20-30° C (68-86° F); frost sensitive
- Soil: a wide range of soils with pH 5-7.5; does not tolerate water-logging.

Horse Gram is a valuable crop for sloping land that is poor in mineral content either in hot, moist areas or semi-arid. It will tolerate some salinity but not water-logged soil. The plant needs short days to flower. In higher rainfall areas it is grown on residual moisture in the dry season, (e.g. after a rice crop). Most Horse Gram cultivars are short-day plants.

Harvesting and Seed Production

In 40-50 days, Horse Gram can be pastured; in 120-180 days the seed is mature. The black-seeded types form seeds in a shorter amount of time. Pods are formed from the ground to the tips of the vines. When the leaves shrivel and pods are light brown, the plants can be uprooted, dried in the field or under cover and threshed to remove the pods. The yield from one acre can be 270-400 kg (600-900 lbs) of seed.

Pests and Diseases

This plant is mostly pest-free though occasionally some rust and leaf spot will appear but they do no significant damage.

Cooking and Nutrition

In all cases the mature seeds of the Horse Gram should be cooked before humans or cattle consume them. They can be boiled and fried or after boiling can be pounded, fermented and used as a sauce like soy sauce. Mature whole or ground seeds of Horse Gram are eaten poached, boiled, or fried. Sprouted seeds are widely consumed in India. In Myanmar the seeds are boiled, pounded with salt and fermented into a product similar to soya bean sauce.

References

<http://ecocrop.fao.org/ecocrop/srv/en/cropView?id=1399>

http://www.tropicalforages.info/key/forages/Media/Html/entities/macrotyloma_uniflorum.htm