

Green Manures No. TGM2

Jackbean, *Canavalia ensiformis*

Green manures are plants which are grown mainly for the benefit of the soil. They can be grown as part of a rotation or in an intercropping system to build soil fertility, or as a cover crop to protect bare soil from erosion. Full details on the benefits and practice of using green manures can be found in HDRA's booklet 'Green manures/Cover crops'.

Canavalia ensiformis is also known as swordbean, horsebean and gotani bean



Growing conditions

- Annual rainfall: Jackbean tolerates a wide range of rainfall, from 650mm to 2,000mm, that is evenly distributed throughout the year. It tolerates drought and survives salinity and waterlogging.
- Altitude: It grows best at altitudes up to 1,800 metres.
- Temperature: It grows best between 15° C to 30° C.
- Soil type: Jackbean can grow in a soil type from pH 4.5 to 8.0, although it does better in a soil with a pH of 5 to 6. It can tolerate a wide range of soils.

Nitrogen fixation

Jackbean is a legume. This means that it has nodules on its roots which contain bacteria. These bacteria take nitrogen from the air. This is known as nitrogen fixation. The plant uses this to grow and when the legume is dug into the soil, the extra nitrogen is made available to the next crop.

Cultivation

Sow jackbean at a rate of 40 to 60 seeds per hectare, 2cm deep and in rows 70cm apart. The application of nitrogen is said to lower yields.

Growth form

Jackbean is a climbing perennial plant which will also grow as an annual. If it is allowed to climb it will produce more foliage.

Recommended application

If jackbean is sown as an annual cover crop, it is best to sow during the rainy season and dig in any time up to flowering.

If it is grown as a perennial intercrop, the plants need a strong durable support such as cacao, coffee, sugarcane, maize, millet or sorghum.

Human food

Young pods and beans of jackbean are eaten as a vegetable. The dried seeds may be eaten but only after much preparation and cooking as they contain a mild poison. Seed coats are not to be eaten.

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HDRA - the organic organisation, Ryton Organic Gardens Coventry, CV8 3LG, UK
Tel: +44 (0)24 7630 3517 Fax: +44 (0)24 7663 9229 Email: ove-enquiry@hdra.org.uk
Website: <http://www.hdra.org.uk>

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