



Promoting “Velvet Bean” or *Mucuna pruriens* as a Cover Crop in Perennial Systems and Fallows

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Why use mucuna as a cover crop?

Mucuna pruriens, widely known as “velvet bean” is a leguminous cover crop with good potential to regenerate soil health. It is a tropical legume widely used as a forage, fallow crop, soil cover and green manure crop due to its rapid growth rate.

Mucuna is deep-rooted and improves nutrient recycling and fixes atmospheric nitrogen. Its roots and vegetation cover protect the soil from erosion, thus improving soil fertility and health. It reduces weed growth and associated costs and

prevents extremes in soil moisture and temperature. At the landscape scale, it improves water quality in rivers and wells.

Dry biomass yields of 0.9-38 and 1.4-41 tonnes/ha under intercrop and sole crop conditions, respectively, have been recorded in eastern and central Africa (ECA). *Mucuna* performs well under moderate banana and coffee shade and during the dry season months.

When to establish mucuna?

- Plant mucuna as an intercrop at the onset of the rainy season and allow it to grow throughout the year.
- If you need to intercrop your perennials with other food crops in the rainy season, mucuna can be sowed at the end of the rainy season (ideally one month before the end of the rainy season) and allow it to establish and provide cover in the dry season.



Figure 1. *Mucuna* monocrop (A) and *Mucuna* cover crop under banana (B).
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Land preparation

Carry out minimum tillage before planting.

Plant spacing

For sole mucuna cropping, leave 25 cm between plants and 100 cm between rows, or 50 cm between plants and 100 cm between rows. When intercropping mucuna, plant at intervals of 25 cm between plants and 50 cm between rows. Plant two seeds per planting hole. Mucuna seeds are large and should be planted at a depth of 3–7 cm.

Weed management

Plants can be weeded by hand one and two months after planting.

Harvesting

- Grain harvest for seed is collected when the pods are mature and dry, at around 8 to 10 months after planting.
- At grain harvest, foliage residues are not palatable to livestock and can be retained as mulch.
- The succulent green foliage and vines can be incorporated into the soil as green manure or made into compost.

Nitrogen: Can fix 41–76 kg of N/ha.

Nutrition/ health benefits: Mucuna is edible and the mature seeds contain 314.4 g/kg of crude protein. Mucuna supports the immune system and balances blood sugar levels.

Forages: Mucuna can be used as a tropical forage for cattle, goats and other small ruminants.



📷 Mucuna as a cover crop in a coffee field. Bioversity International/G. Blomme

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Recommended reading

Blomme G; Ntamwira J; Ocimati W. (2022). *Mucuna pruriens*, *Crotalaria juncea*, and chickpea (*Cicer arietinum*) have the potential for improving productivity of banana-based systems in Eastern Democratic Republic of Congo. *Legume Science*, 4(4), e145.



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