

How do I grow *Mucuna*?

To grow *Mucuna*, prepare the soil ridges 90 cm apart as normal, and plant one *Mucuna* seed every 15 to 30 cm apart on the ridge early in the rainy season. Exact spacing is not critical since *Mucuna* will quickly cover the area between the seedlings. Since *Mucuna* has a large seed, it takes 1-2 weeks to emerge, but then will begin to grow very quickly. One weeding should be done at 2 weeks after planting, but often a second weeding is unnecessary once the plants start to vine around each other. *Mucuna* will often grow up adjacent plants (including maize), so you should leave a 1-2 m gap between *Mucuna* seeds and other fields.

Mucuna will take about 6 months to mature. Once the leaves have fallen, check the pods. They are ripe when they have turned brown and split easily when twisted. The pods should be harvested and dried at the household until they begin to shatter by themselves.

Isn't kalongonda itchy to handle?

Kalongonda is NOT itchy. There is another variety of *Mucuna* called "Chitedze", which has stinging hairs. Also many of the types found wild in southern Africa are itchy.

Mucuna improves maize yields

Make sure that the thick layer of leaves and stems left in the field is incorporated when farmers remake their ridges. If the residue is burnt, the farmer will lose a lot of the soil fertility benefit of the *Mucuna* crop. A healthy *Mucuna* crop can leave over 100 kg N/ha in the field for the next maize crop and produce over 2000 kg/ha of seed. There is no other annual legume in Malawi which can produce such high seed yields and large amounts of N at the same time. To improve the following crop the most, the *Mucuna* can be incorporated into the soil when it is still green, at the end of the rainy season. However, this is rarely practicable for smallholders in Malawi.

Can I intercrop *Mucuna* with maize?

We do not recommend *Mucuna* intercropping because *Mucuna* is very competitive with maize if it is planted at the same time - it grows around and up the maize, making it fall over and difficult to harvest. If farmers want to intercrop *Mucuna*, they should wait to plant it straight after the second weeding, 6 weeks after maize planting. Plant the *Mucuna* at 1-2 seeds between each maize station.

How can I prepare *Mucuna* seed to eat?

While *Mucuna* grows very well and can produce a large seed yield, **the seed can be dangerous to eat if not prepared correctly.** *Mucuna* contains the toxin L-Dopa, which must be removed before the seed is eaten. In southern Malawi, farmers use *Mucuna* as a food crop, but farmers elsewhere may not be familiar with it. If your farmers show interest in testing *Mucuna* as a food crop, then it is vital that the *Mucuna* is prepared properly. It is very important that the seed be well cooked before it is eaten.



Maize after *Mucuna* (right), compared with maize after maize (left) at Bembeke, Malawi.
Mucuna is in the foreground

Two ways to prepare *Mucuna*

The first is the traditional recipe from southern Malawi:

1. Wash the dried *Mucuna* seed with water.
2. Put the seed in a pot and add enough water to cover the *Mucuna*. Boil until the seed coat cracks, adding water when necessary.
3. Peel off the outer seed coat one by one, and wash every seed thoroughly.
4. Put back in the pot for a second time, and add enough water to cover the *Mucuna*. Boil for approximately one hour. The *Mucuna* will foam while boiling.
5. Remove from the fire and discard the water. The *Mucuna* softens just like beans when it is ready.
6. Add fresh water, and boil again. The water will turn black after a few minutes. Discard this black water, and add new water.
7. Keep repeating step 6, discarding and adding fresh water frequently, until it takes 1.5 hours before the fresh water changes colour. This may take up to 8 hours.
8. You can be sure the *Mucuna* is ready by splitting a seed in the middle. If the centre is yellow or creamy in colour, repeat step 6. The *Mucuna* is ready when the centre is clear (the whole seed is the same colour).
9. When the *Mucuna* is ready for eating, the colour is clear and the taste is like nsima. Eat as is, or add salt or sugar to taste.

If farmers complain that the previous recipe takes too much wood or water, they can try a different recipe used in West Africa that is less expensive.

1. Crack the dried *Mucuna* seed into several pieces.
2. Soak the seed in water overnight and throw away the water.
3. Boil the seed for 20 min, and let it cool to room temperature.
4. After cooling, throw away the water and put in fresh water.
5. Soak overnight again and throw away the water.
6. Dry the boiled seed in the sun.
7. After drying, pound into flour.
8. Combine the *Mucuna* flour in a 1:3 ratio with maize flour (that is 100 g of *Mucuna* for every 300 g of maize flour) and make nsima as you normally would.



A good crop of *Mucuna* in central Malawi

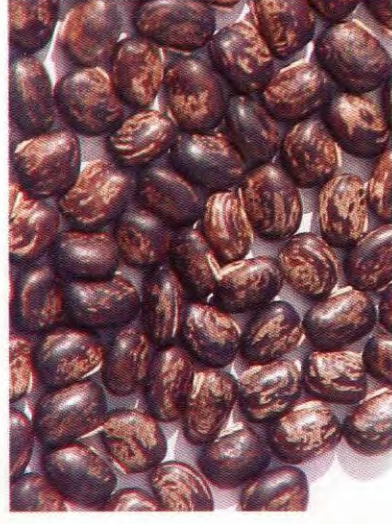
Where can I get seed and more information about *Mucuna*?

In Malawi, please contact the Crops Officer at your nearest RDP or ADD.

Another source of information is DARTS, Chitedze Agricultural Research Station, Lilongwe.

MUCUNA (Kalongonda)

The best legume for soil fertility in Malawi



Mucuna seed

Why *Mucuna*?

Mucuna pruriens (velvet bean or kalongonda) is a legume, which gets most of its nitrogen (N) from the air and adds N to the soil from the leaves and stems that fall during the season. The more N added to the soil, the better subsequent maize crops will grow. *Mucuna* is the best annual legume tried in Malawi for producing both biomass for soil improvement and seed yield. A healthy *Mucuna* crop will grow vigorously, producing over 10 tonnes/ha of biomass above ground. It requires no more than one weeding and produces a thick layer of organic mulch. If incorporated in the soil, the biomass left from *Mucuna* can more than double maize yields in the next season without fertilisers. *Mucuna* can produce more seed than unfertilised maize. *Mucuna* seed is used for human consumption in southern Malawi, but care must be taken with its preparation. The seed can be cooked, or planted in subsequent seasons on fields where soil fertility needs to be improved.

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