

Desmodium for livestock feed

Desmodium is a legume commonly used as a protein supplement in dairy cattle. Many Kenyan farmers grow it to cut animal production costs.



Figure 1: Greenleaf desmodium.
Photo credit: ILRI/Leah Gichuki.



Figure 2: Silverleaf desmodium.
Photo credit: Harry Rose.

Why do farmers plant *Desmodium* legume?

- It can be established in form of splits and therefore planting materials are easily available within the farmers' networks.
- Once fully established, *Desmodium* forms a complete ground cover that suppresses weeds.
- It helps control soil erosion, fixes nitrogen, improves soil fertility and increases yields of intercrops while reducing the use of nitrogen fertilizers.
- The legume can be intercropped with Napier grass, fodder trees, Rhodes grass, bananas, avocados etc. Particularly, it can be intercropped with Napier grass and maize to help control stemborer and weeds such as Striga under the 'push and pull' technology.

How to establish *Desmodium*?

Desmodium can be established using seeds or cuttings. *Desmodium* establish well with the addition of Rhizobia bacteria, which live in their roots and fix nitrogen from the air and make it available to growing plants. If farmers cannot find the bacteria, they mix a handful of soil from another *Desmodium* plot. Apply phosphate fertilizer (TSP) or DAP before planting and mix well with the soil. Farmyard manure or bio-slurry can also be used as an alternative.

Seeds: Drill seeds into shallow furrows (10 mm) spaced a foot apart (30 cm) then cover with little soil and press lightly. For broadcasting, spread the seeds evenly over the finely prepared seedbed. In both cases, they require adequate rain to germinate well.

Cuttings: *Desmodium* can also be established cheaply using cuttings. Cuttings should be from mature freshly harvested vines at least 2 feet long with soil still attached to their tillers. Make furrows a foot apart (30 cm) and 10 cm deep; and plant a foot (30 cm) apart with two internodes under the ground. Press lightly to increase contact with the soil.

Benefits of using seeds	Hindrance of using seeds
• Less bulk to transport to the farm. • A small amount of seeds can cover a bigger planting area. • Helps to overcome soil-borne diseases.	• Land must be prepared to fine tilt which requires more labour. • Seeds are relatively expensive. • Planting with seeds requires skills because the seeds are small and require more dedication and time to grow. • <i>Desmodium</i> commonly takes longer to establish than other tropical legumes.

Benefits of using cuttings	Hindrances of using cuttings
• They are easy to establish. • They can be shared between farmers hence cheaper.	• A large amount is required to cover an acre of land. • They are bulky to transport to the planting plots.

Harvesting and feeding *Desmodium* to livestock

- When grown alone, harvesting is done 4 months after planting and subsequent cutting is recommended after every 3 months intervals, cutting at 10 cm or higher above soil level.
- When intercropped with other grasses e.g. Napier grass, cut the first harvest at least four 4 months after the *Desmodium* is established, or when the Napier grass is 6–8 weeks old after first establishment (it should be 1–1.5 m high). Thereafter, cut the *Desmodium* and Napier together at an interval of 4–10 weeks.
- The common wisdom and practice among farmers in the region is to wilt *Desmodium* for a few hours before feeding animals.
- *Desmodium* can be fed directly to the dairy animals either alone or mixed with other feeds such as maize stover or Napier grass. Excess *Desmodium* may be cut, dried, and baled into hay, and used as a protein supplement. It can also be mixed with grass when making hay.

