

Short Management Guide

Sida hermaphrodita



Novel Pathways of Biomass Production: Assessing the Potential of *Sida hermaphrodita* and Valuable Timber Trees

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Why *Sida*?

- *Sida* or Virginia mallow is a perennial crop that forms up to 4m high shoots
- Labour saving: plant once, harvest many times
- Management with standard agricultural machinery
- Can be used as chips for direct combustion, substrate for biogas, and fodder for ruminants
- Ecological value: Promotion of pollinating insects
- Erosion protection via permanent crop



Establishment

As with other permanent crops, good soil preparation and maintenance of the freshly planted field is crucial for successful crop establishment.

- Soil preparation: ploughing; preparation of seedbed or planting bed; mechanical or chemical weeding in spring
- Planting or drill sowing: from mid-May onwards
- Planting density: 4 plants per m²

Sida seeds can be obtained from various traders. However, the germination rate of these seeds varies between 20 and 80%, so it is difficult to establish a closed population.

It is therefore advisable to plant seedlings. These can also be obtained from different suppliers, or they can be grown on one's own behalf from seeds. In both cases, however, a significant increase in financial and labour costs is to be expected, compared with sowing seeds.

According to new investigations, mechanical roughening of the seed surfaces can greatly improve their germination rate, rendering the sowing option much more attractive.

Important:

Careless weed control during the first few months greatly reduced the growth of *Sida* plants, which initially possess only a low competitive ability. Since *Sida* is susceptible to the use of herbicides, mechanical working techniques should be used.

As with other plants, fertilizing can increase the growth of *Sida*, and in particular, promotes rapid closure of the stand during the initial years.

The supply of nutrients should be adjusted to the appropriate level using soil analyses to identify requirements.

Growth requirements

Sida has relatively few site requirements. Generally, warmer climates and better soils will lead to greater the growth. Exclusion criteria are:

- Stagnant water or very dry soils
- Areas that were previously covered with crops which are susceptible to the pathogen *Sclerotinia sclerotiorum* (especially rape).

Management

Once the *Sida* plantation has been properly established after two or three years, there remains comparably little work to be done. After harvesting and before the re-growth of the plants, if needed, it should be possible to drive across the field with a tractor to apply fertilizer or perform some other maintenance measures.



Utilization

The biomass chips produced can be burnt directly and are often used in combination with wood chips. However, there are other possible uses, for example in fibre products, chipboards, or as a peat substitute. Moreover, as mentioned earlier, *Sida* can also be used as a substrate for biogas and as fodder.



Harvest

From the second year onwards, the annual harvest of biomass for direct combustion is best undertaken between January and March. Harvesting can be conducted with standard and readily available harvesting machines such as forage harvesters.

Because at this time, *Sida* only has a low moisture content below 30%, it can be burnt and stored without problem. Harvesting should not be performed from April onwards, as the plants will by then already be sprouting again.



Further Information:

- Haller J, Fritz M (2015): Bioenergie-Dauerkulturen. Auswahl ökologischer Alternativen. Straubing: Technologie- und Förderzentrum.
- Hartmann A, et al. (2018). Dauerkulturen. Aufzeigen der bayernweiten Eignung. Straubing: Technologie- und Förderzentrum.
- Borkowska H, Molas B (2006). Energiepflanze mit hohem Potenzial. Erneuerbare Energien 2006(7), 76-77.
- 3N Kompetenzzentrum für Erneuerbare Energien. www.3-n.info

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