

Cover Crop Series

Sunn Hemp – Fibre, Fodder, Fixer and Fuel

Sunn Hemp (*Crotalaria juncea*) originated in India where it has been cultivated for hundreds of years, for its fibre. Increasingly however it is being used as a nitrogen fixer and soil improver both in tropical and cooler climates. It has been used as a cover crop and for “green manure” in Australia for the last five years.

According to *Feedipedia*, an online encyclopaedia on animal feed facilitated by various French government and non-government organisations and FAO (Food and Agriculture Organisation of the United Nations), *Crotalaria juncea* can fix about 50-60 kg N/ha within 60-90 days of cultivation although this is in tropical climates. Under similar conditions it provides 60 kg N/ha to the soil when it is used as green manure. Sunn hemp has the potential to improve soil properties, to build organic matter and sequester carbon in the soil. It can also be used for soil reclamation ([Sarkar et al., 2015](#)). It tolerates extreme heat and provides excellent fodder for cattle.

Sunn hemp repels many plant-parasitic nematodes especially root-knot nematodes and its vigorous growth and dense canopy, help with weed control ([Maroyi, 2011](#); [Orwa et al., 2009](#); [Cook et al., 2005](#)).

There is also increasing interest in the use of sunn hemp as a biofuel.

Sunn Hemp with less sun

According to Victorian company, AGF Seeds, who import a variety called Freyr Sunn Hemp, there are some advantages to growing the plant in a temperate climate.

Much higher night temperatures are required for it to generate viable seed so the species will not spread as a weed. High in protein, Sunn Hemp provides similar biomass to clover.

Sunn Hemp is a great companion plant for tillage radish, but as a nitrogen fixer in Australia the seed has to be inoculated.

AGF Seeds is continuing trial work to understand the plant’s full potential in these southern regions. The two farmers trialling Sunn Hemp through the Climate Resilient Farms Project will also contribute to this knowledge base.



Fibre Provider

In the 1960s in India, sunn hemp was cultivated on about 200,000 ha. The cultivation of sunn hemp steadily decreased with the use of synthetic fibres and represented no more than 31,000 ha in 2008 (Sarkar et al., 2015). The late 2000s saw a renewed interest for the plant as a multipurpose legume. India is the first sunn hemp fibre producer (23% of worldwide production), having the largest cultivation area (27% in area). Other important producers are Bangladesh and Brazil (Sarkar et al., 2015).



According to the *New Agriculturalist*, sunn hemp fibre has greater tensile strength and is more durable under exposure than jute. It is also stronger when wet, is fairly resistant to mildew, moisture and micro-organisms in salt water, and is currently used in twine, rug yarn, cigarette and tissue papers, fishing nets, sacking, canvas and cordage.

According to *Feedipedia*, sunn hemp fibre is gaining interest as an environmentally friendly alternative to synthetic fibres.

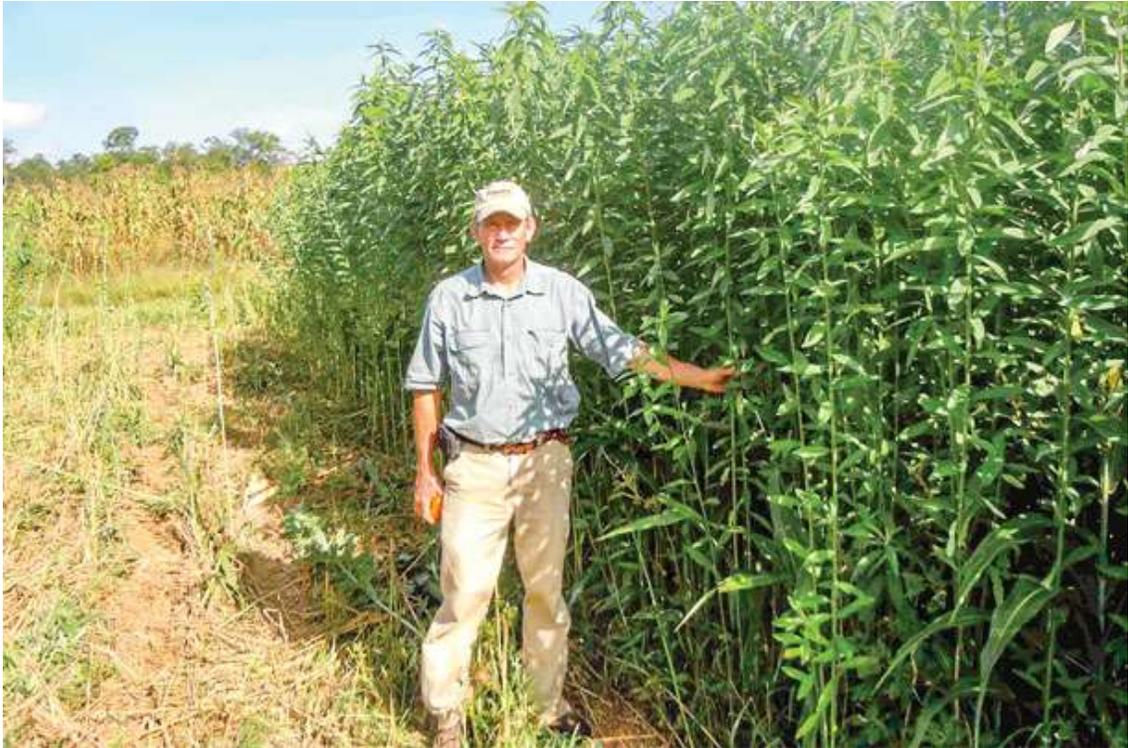
What's in a name?

Sunn hemp has many, many common names including these English ones - Indian hemp, Benares hemp, Madras hemp, sunn, sunn crotalaria.

Despite its name, Sunn hemp (*Crotalaria juncea*) is not related to Cannabis (*Cannabis sativa*). The only similarity between the two is that they both produce fibre. Sunn Hemp is actually a legume.

The genus name means "rattle", referencing the sound produced by the seeds in the pods at maturity, while "juncea" was given by Linnaeus for the resemblance of Sunn hemp to Spanish broom (*Spartium junceaum* L). (Orwa et al., 2009).





Sunn Hemp growing in Alabama where it can grow to nearly 2.5 metres in 60 days. In southern Victoria it is unlikely to grow higher than waist height.



Close up of Sunn Hemp flower.

