

Sunn Hemp

(Crotalaria juncea L.)

Sunn Hemp is an erect, branching, annual legume. It is a rapid, vigorous grower, achieving a height of over 4ft (1.2 m) in 60 days when growing under favorable conditions. It can attain a height of over 6 ft (1.8 m) in approximately 90 days.

The plants are generally unbranched from the ground to approximately 2 ft (60 cm). Above this height, many branches will develop if plants are not crowded. Branching begins higher and to a lesser extent if plant population is high, as for a green manure crop. The simple elliptical leaves are 2 1/2 cm to 5 in. (6 1/4 to 12 1/2 cm) long and 1/2 to 1 in. (1 1/4 to 2 1/2 cm) wide.

The flowers are bright yellow, and normally 18 to 20 of them will develop on terminal racemes. The papery, inflated seedpods are cylindrical, 1 to 1 1/4 in (2 1/2 to 3 cm) long and 1/4 to 1/2 in (1/2 to 1 1/4 cm) wide.

Seeds are dark slate green and about 1/4 in (1/2 cm) long. There are about 15,000 seeds per pound (30,000 to 35,000/kilogram). Seed germination is high. Seeds and forage of Sunn Hemp were nontoxic in laboratory tests and feeding trials. Other species of *Crotalaria* contain poisonous alkaloids and, under certain conditions, can be toxic to animals.

USE

Sunn Hemp is principally used as a green manure crop for soil improvement. It is an excellent, rapid growing green manure to be included in rotation with vegetable, ornamental, and other plants to add nitrogen and organic matter, to suppress weeds, and to reduce root-knot nematodes. To achieve maximum benefits, plantings should be made at regular intervals in a planned crop rotation scheme.

Sunn Hemp has added 134 to 147 lb of actual nitrogen per acre (150 to 165 kg/ha) to the soil when grown for 60 days and then incorporated in test plots. Organic matter yields of as much as 3 tons per acre (7 kg/ha) air-dry weight can be produced within 60 days if growing conditions are favorable. In addition, Sunn Hemp is resistant to root-knot nematodes (*Meloidogyne* spp.). Experiments have shown that the number of root-knot nematodes in the soil can be reduced, probably because Sunn Hemp is not a suitable host. Other possible, although as yet untried, uses for Sunn Hemp are as an annual source of papermaking fiber, cordage, and biomass for fuel.

Seed at the rate of 40 to 60 pure live seed per acre (45 to 67 kg/ha). If drilled, the seeding rate should be 30 to 50 lb/acre (34 to 56 kg/ha) in 6-in rows. The higher seeding rates should be used if the crop is to be incorporated in less than 60 days (30 to 45 days) or if severe weed competition is expected. High plant populations also tend to enhance stem succulence for easier incorporation, the seed should be inoculated with cowpea-type or "EL" inoculants to ensure effective nodulation as some soils may not contain the correct *Rhizobium* strains.

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