

In India, rice-wheat based cropping system is a major food production system. The practice of cereal based cropping system year after year may lead to depletion of soil fertility status, low productivity and high pest incidence. Usually land remains fallow during pre kharif/summer season in rice-wheat cropping pattern. Hence, crop like sunnhemp is very well fitted in rice-wheat based cropping system to make it more remunerative and to maintain soil fertility status.

Sunnhemp or sanai is an important bast fibre and green manuring crop of India. The crop is also used as green fodder in some areas. The fibre has high cellulose, low lignin and negligible ash content. These properties of fibre make it ideal for making tissue paper, cigarette paper, paper for currency, ropes, twines, fishing nets, canvas etc. The improved cultivation practices of sunnhemp fibre are as follows.

Package of practices of sunnhemp for quality fibre production

Production technology	
Climate	In northern India, it is grown in summer and in rainy season and evenly distributed rainfall of at least 400 mm
Soil	Well drained loamy soils or sandy loam soils with pH 6.0 to 7.5
Variety	SH-4, SUIIN-053 (Swastik), SUIIN-037(Ankur), JRJ-610 (Prankur), K-12 Black , K-12 yellow, SUIIN-03 (Kavita)
Time of sowing	Rainfed May-June, Irrigated. April -May
Spacing	Row to row 25-30 cm, Plant to Plant 5-7 cm Optimum plant population 5-6 lakh ha ⁻¹
Seed rate	25 Kg/ha
Seed Treatment	Carbendazim or Thiram 2-3g/ kg seed
Manures and Fertilizers	FYM @ 5ton/ha & NPK @20:40:40 (Kg/ha)
Weed management	One hand weeding at 20-30 DAS
Major Insect Pest and Disease	Hairy Caterpillar: Foliar application of Neem @ 3ml/lit Wilt : S.T. with Carbendazim @ 2g or Trichoderma viride @ 5g / kg seed
Water management	Irrigated condition: 4 - 5 irrigations at 15-20 days interval
Stage of harvesting	90-100 DAS
Yield	10 to 12 quintal fibre/ha

Sunnhemp based cropping systems

Sunnhemp based cropping systems involving cultivation of compatible crops is a viable option for increasing farm income by enhancing production and productivity. The most remunerative sunnhemp based cropping systems are as follows.

Cropping Pattern	Sowing time	Harvesting time
Sunnhemp (fibre)-Wheat	Mid June - Early October	Mid September - -Early March
Sunnhemp (fibre)-Potato	Mid June -Late September	Mid September -Early January
Sunnhemp (fibre) - Sunnhemp (seed) - Green gram/ Blackgram	Mid May -Early September -Mid February	Mid August -Late January -Late April
Sunnhemp (fibre)- Mustard-Fodder maize	Early June -Early September -Mid February	Late August -Early September -Late April
Sunnhemp (fibre)-Potato -Fodder maize	Late June -Early October -Mid February	Late September -Late January -Later April
Sunnhemp (fibre) -Paddy- Wheat/barley	Late April -Early August -Late November	Late July -Mid November -Early April

Flax

Flax is another fibre crop & popular for two purposes: one is as a fibre and another as oilseed (linseed). The 'Linen' obtained from flax fiber is one of the best raw materials for textile. Flax fiber is strong, non-lignified, soft, flexible, lustrous, shining, pale yellow color and possesses high water absorbency quality. At present India imports large amounts of flax fiber from European countries & hence much scope for area expansion of fibre flax in India. The scientific cultivation practices of flax are as follows.

Package of practices for quality fibre production of Flax

Production technology	
Climate	Cool humid climate temperature ranging from 10 ⁰ C to 27 ⁰ C, rainfall of 155-200 mm with high humidity (60-65%).

Scope and opportunities of Sunnhemp and Flax based cropping systems for enhancing yield and farm income

Soil	Sandy loam or loamy with pH varying from 5.5-7.0
Variety	JRF-2
Time of sowing	Second fortnight of October to first fortnight of November
Spacing	Row to row 15-25cm, 2-3 lines in one row
Seed rate	40 -50 Kg/ha
Seed Treatment	Carbendazim or Thiram 2-3g/ kg seed
Nutrient Management	NPK @60:40:40 (Kg/ha), Half dose of N and full dose P and K as basal application and remaining half dose of N topdressed 35 DAS
Weed management	Two hand weeding at 24 and 40-45 DAS
Major Diseases	Powdery mildew: Foliar application of Propiconazole @1ml/lit Wilt: S.T. with Carbendazim @ 2g/ kg seed
Water management	Two irrigations at 35 and 65 DAS
Stage of harvesting	120-125 DAS
Yield	10 to 12 quintal fibre/ha

Flax based cropping systems

In India, the profitable flax based cropping system for increasing yield and farm income as follows

Cropping pattern	Sowing time	Harvesting time
Paddy-Flax (fibre)- Cucurbits/Pulses/oilseeds	Mid July -Early November Mid March	Late October -Late February -Late June
Paddy-Flax (seed)- Cucurbits/oilseeds/ Pulses	Mid July -Early November -Early April	Late October -Late March -Mid June

The adaptation of these cropping patterns with good agricultural practices is more remunerative and maintains soil health for sustainable agriculture.

Published by

Dr. Gouranga Kar, Director
Central Research Institute for Jute and Allied Fibres

Compiled by

**K.V. Shivakumar, M.S. Behera, Sabyasachi Mitra, Vikas Mangal, Kajal Das,
Deshraj Meena and Sandip Roy**



**SUNNHEMP RESEARCH STATION
(CRIJAF)**

**Indian Council of Agricultural
Research**

Pratapgarh 230001 U.P.

