

Napier bajra hybrid

Common name: Sankar napier

Botanical name: Napier bajra hybrid (*Pennisetum glaucum* x *P. purpureum*.)

Hybrid napier is highly valued for its abundant herbage yield, palatability and good fodder quality. It contains 8.7-10.2 % crude protein, 28-30.5% crude fibre and 10-11.5 % ash on dry matter basis. It provides nutritious and palatable fodder all the year round. It grows faster and produces more herbage and the stems are hard. The oxalate content of some of the varieties may be high (>



3%). It can be mitigated if harvested at longer intervals (45-60 days). The grass is ideal for green fodder, silage and hay. It grows well at high temperatures and can withstand drought conditions for fairly long spell. It grows in areas with rainfall of over 1000 mm but it cannot tolerate the flooding /water logging. The optimum temperature is 31⁰ C for its growth but it performs well in areas having temperatures above 15⁰ C. It is a tropical grass which can withstand drought for a short spell and regenerate with rains.

Soils and its preparation

It can grow on wide range of soil with varied fertility status. Being exhaustive species, well drained clay loam soils are preferred for the crop. The crop can bear soils acidity to limited extent (pH-5.5). It is a long duration crop, hence periodical tillage activities like other crops are not possible after the crop occupies the field. Generally 2-3 ploughings followed by planking is required to obtain the fine tilth.

Varieties

Varieties	Area of cultivation	Green fodder yield (t/ha)
IGFRI Hybrid napier No. 3	North and Central zone	70-100
NB 21	Whole country	100-160
CO-1	South zone	300-350
CO-2	South zone	350-450
CO-3	South zone	400-450
Yashwant	Maharashtra	190-250
PBN 83	Punjab	125-170
APBN-1	Southern region	260-295

NB hybrid selection from IGFRI named as IGFRI-3, IGFRI-6, IGFRI-7 and IGFRI-10 are promising material for different parts of the country. These are suitable for different environment like IGFRI-3 for intercropping, IGFRI-7 for acid soil and IGFRI-10 for saline soil condition. Among all IGFRI series, IGFRI-10 has high yield potential (150-185 t/ha).

Planting time

The setting of seed does not occur in N-B hybrid; hence, propagation is possible only through vegetative cuttings. Planting can be done at any time of year except during winter months. February planting is most suitable in areas where assured irrigation facility is available. Under rainfed conditions July-August planting is preferred.

Seeds rate and planting method

It is propagated by stem cuttings with two buds or with rooted slips. About 35000 rooted slips or stem cuttings per /hectare are required in sole crop. In intercrop 20,000 rooted slips are sufficient to harvest better biomass. Stem cuttings are placed into the soil at an angle of 45⁰, so that one node is pushed into the soil and one remains above the soil surface. The rooted slips are prepared by uprooting a clump, dividing it into rooted tillers with small stem. These should be planted in to field with a spacing of 70 cm x 50 cm for sole cropping and 100 cm x 50 cm for intercropping. Just after planting, irrigation should be given for better establishment.

Cropping systems

Promising cropping systems	Green fodder (t/ha)
North region	
Napier bajra hybrid + Velvet bean- Berseem + Mustard (Sub temperate, humid, red soil)	122
Napier bajra hybrid + Berseem	211
Napier bajra hybrid + Lucerne	176
Central and western region	
Napier bajra hybrid + (Cowpea-Berseem) (Semi-arid, red soil)	255
Napier bajra hybrid + (Cowpea-Berseem) (Sub-humid, black soil)	176
Eastern region	
Napier bajra hybrid (Humid, acidic soil)	106
Southern region	
Napier bajra hybrid- Hedge lucerne	225

Nutrient management

It is a heavy feeder crop therefore it requires heavy amount of organic and inorganic fertilizers. 20-25 t FYM/ha should be well mixed in soil at the time of land preparation. At sowing time, a

basal dose of 60 kg N, 50 kg P₂O₅ and 40 kg K₂O/ha should be applied in bands prior to planting. 30 kg N/ha should be applied after each cut. About 240 kg N/ha is required to get higher green biomass from this crop.

Water management

The crop should be planted in well moist soil condition. During monsoon seasons, the irrigation is rarely needed in event of long monsoon failure. The crop needs regular irrigation at an interval of 15-18 days in March to May, at 10-12 days interval in summer months.

Weed management

Regular hand weeding/hoeing and ensures good aeration and crop growth as well as control weed growth.

Harvesting management

In NB hybrid, first cut at 60-65 days after planting and subsequent cuts are to be taken at 25-30 days interval. With proper management, at least 6-8 cuts can be taken annually. In order to encourage quicker regeneration from the basal buds, stubbles of 10-15 cm are to be left at the time of harvesting.