

SAFED MUSLI



Plant Profile

Family	:	<i>Liliaceae</i>
English name	:	Nil
Indian name	:	Musali (Sanskrit) Safed Musli (Hindi) Tiravanticam (Tamil) Dravanti (Kannada)
Species	:	<i>Chlorophytum borivilianum</i> Sant. & Fernandez <i>C. arundinaceum</i> , <i>C.tuberosum</i> , <i>C. malabaricum</i> , <i>C. attenuatum</i> , <i>C. breviscapum</i>
Distribution	:	South Africa and India

In India, it is mainly cultivated in Rajasthan, Gujarat and Madhya Pradesh. Presently, the roots fetch an attractive price, which is decided by the size of the tubers and its physical appearance. It is in large consistent demand in the world market and its annual demand is estimated to be about 300-500 tonnes.

MEDICINAL PROPERTIES AND USES

- The major components of safed musli are carbohydrates (41%), protein (8-9%), saponins (2-17%) and root fibres (4%).
- Saponin is the chief medicinal compound present in roots.
- The roots of safed musli are well known tonic. It has key application in the care of general debility by acting as an aphrodisiac. It has also been used in the treatment of rheumatism and the leaves for vegetable purpose in central India.

PRODUCTION TECHNOLOGY

Soil Suitability

- Since Musli is a tuber species, it needs a sandy loamy soil with neutral pH and organic matter in high quantity to yield better results.
- Heavy black soil is not suitable for cultivation of Musli.

Climate

The vegetative growth and fleshy root development is facilitated by warm and humid weather with sufficient amount of moisture during the growing period.

Varieties

- At present there are no named varieties available.
- However, some promising strains like RC-5, RC-15, CTI-1, CTI-17 and CTI-2 have been found good from the yield point of view.

For more details on planting material and availability please contact:

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Irrigation

- Safed Musli is cultivated during the rainy season, as it needs a regular supply of water even after the stage of fall of leaves.
- A good drainage system is required to avoid water-logging and to enable effective moisture-retention by the soil.
- Drip irrigation is ideal for cultivation of Musli.

Manuring

- Cow Dung: Cow dung is essential in the cultivation of Musli. Well dried, decomposed cow dung is to be applied over the soil in large quantities.
- Green Manure: Green manuring is vital to improve the fertility of the soil. Ideal sources of green manure are Sesbania, Crotalaria or Jammu and Pilli Pesara.
- Bone Meal: For a tuber species like Musli, application of bone meal provides phosphorus and the necessary micro-nutrients.

Ploughing

- Plough the field upto 1 to 1.5 ft depth & draw the cultivator.
- Broadcast green manure seeds and irrigate the crop if needed. Incorporate into field at peak flowering stage
- Spread well decomposed or compost evenly over the field, along with 50 kgs of single super phosphate
- Apply post-emergence weedicide (Glyphosate group) 7 days after emergence of weeds.
- Leave the land for 20 days for sowing

Preparation of beds

- Like any tuberous species, Musli is better cultivated on raised beds.
- There is a tractor attachment accessible for raising the beds.
- The beds are to be prepared along the slope of the land for proper surface water run-off.
- The beds are automatically raised with the implement to a height of 1 ½ ft at the center, tapering to sides with a width of 3 ½ ft and two beds are separated with 1 ½ ft width of trench.

When beds are raised, half way through, add 100 kgs of single super phosphate, 50kg of Murate of Potash, Bone meal 100 Kgs , Micro Nutrients as per requirement are to be applied per acre

- Then, the beds are to be raised to fullest height.
- Drip-lines are to be placed at the middle of each of the raised beds.
- The inline drippers are of 3 litres per hour capacity and placed 1.5 ft apart so as to wet the bed evenly.
- Irrigation to be given to beds before sowing of tubers.

Seed Selection & Treatment

Selection of Seed

- For sowing, the tubers or fingers of Musli are used.
- Seed is to obtained from the best-cultivated source
- Best seeds have considerable part of the disc or crown with them.
- Care should be taken not to cause damage to the tuber's Epidermal layer.

Best seed could weigh anything between 10 – 15 gms.

Spacing

10 inches x 12 inches
Qty of the seed needed for sowing is 450 kgs
(30,000 – 35,000 fingers are required per acre)

Treatment of Seed

The seed to be sown has to be treated with growth promoter and fungicide to avoid possible diseases after transplanting.

Seed should be treated with Humicil @ 5ml/Lt water. & Dithane-M 45@ 5gm/Lt water .

Sowing

- It should be made sure that the crown is at the upper side of the tuber and non-crown part at the down side(Tuber should be in slanting position).
- The seed is to be sown ½ inch deep in the soil and be covered by soil by hand so as not to cause any damage to it.

Inter-Cropping

- Musli could be cultivated as an inter-crop with Mango, Teak, Neem, paulownia etc with remarkable results.
- Musli could also be gainfully intercropped with papaya and banana

Growth of Seed

- Monsoon, starting with thunders, is responsible for sprouting of the tubers.

The plant emerges in about 10 days. Flowering begins on 15th day and the leafy part grows to its maximum by 70 days. It matures by 120 days as the leaf-fall starts. In 4-5 months, the tuber gets the cuticle layer on the fingers and there is an intake of material through soil to the tuber till 9 months.

Plant Protection

The leaf of Musli has to be protected from any disease and pests to harvest optimum yields. Musli, being in the form of tubers underneath the ground, is intrinsically strong to survive disasters like heavy showers. Care should, however, be taken to provide proper drainage to avoid damage to tubers by water-logging.

Major pests	:	Leaf eating caterpillar and white grub
Major diseases	:	Leaf blight and red spot

Schedule

1. To control leaf eating caterpillars, spray 0.2 per cent metacid aqueous solution at fortnightly intervals.
2. White grub can be easily controlled by the application of Aldrin @ 25 kg per hectare at the time of last ploughing during land preparation.
3. Spray Bavistin solution @ 1 g/l at 25 days interval (2 times) to control the diseases.

HARVESTING

The crop matures in about three months after planting. At maturity, the leaves become yellowish and ultimately dry up from the collar part and fall down. Thus, the crop should be harvested when leaves have dried which take place in the month of September - October.

Post Leaf Fall: After the leaf fall, the tubers should continue to be in the ground. They should not be plucked, as changes occur internally in the tuber that will increase its value. At the time of the leaf fall, the tubers are light in colour and, as they mature by time, they turn deep black. Each tuber is to be delicately lifted with the prescribed implements, to obtain maximum quantity of the tuber and to avoid any damage to the crown or disc of the tuber. Harvesting should be carried out in the month of March/April.

Cleaning of Tuber

As the tuber is dug out from the soil, naturally it contains a lot of mud. As such, the tuber has to be cleaned properly before it is peeled

Peeling

- After the separation of the material to be resown, only tubers without a crown are to be peeled.
- Peeling helps the tuber dry easily and various methods are in vogue for peeling.

Peeling is no specialized task. It can easily be done with a knife without any loss of quality or quantity. A person can peel up to 5 kg per day.

Drying

Once peeled, Musli should be dried of the moisture content. It takes 7 days for Musli to dry.

Packing

- After drying, Musli must be packed in poly bags to prevent entry of moisture. (From the stage of harvesting to packing, there is a natural loss of weight of Musli. Shorter and stouter the tuber, lesser is the loss of weight).

Yield

On an average, 2000 kg of fleshy roots per hectare can be obtained, which may yield up to 400 kg of dry safed musli.



Acknowledgement: We acknowledge M/s Nandan Agro Farms Ltd, Hyderabad for the whole information on cultivation practices of Musli. For more details on this crop please visit www.safedmusli.net