

Production Technology of Snake Gourd (*Trichosanthes cucumerina* L.)

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INTRODUCTION

The snake gourd (*Trichosanthes cucumerina*. L) is a creeping plant. It belongs family Cucurbitaceae and chromosome number(2n) is 22. It is originated from India. It bears elongated twisted fruits and is generally consumed as a vegetable. The plant is cultivated all across south and south-east Asian countries counting India, Nepal, Bangladesh, and China. The species is native to Australia, Africa and major parts of India. Growing well in Tropical countries, it produces greenish-white and whitish color fruits that develop into 100-150 cm in length and 60-75 cm in diameter (approx). Backed by agricultural research, varieties of hybrid snake gourds are now grown in India, which have high demand and being exported overseas. In India, a number of smaller species of snake gourd with high yield also grow in abundance.

Nutritional value of Snake gourd:

Sr. No	Nutrient component	Nutrient value per 100g edible portion	Sr. No	Nutrient component	Nutrient value per 100g edible portion
1.	Moisture (g)	94.6	8.	Calcium (mg)	26
2.	Carbohydrates (g)	3.3	9.	Phosphorus (mg)	20
3.	Protein (g)	0.5	10.	Iron (mg)	0.3
4.	Fiber (g)	0.8	11.	Niacin (mg)	0.3
5.	Fat (g)	0.3	12.	Riboflavin (mg)	0.06
6.	Thiamine (mg)	0.04	13.	Vitamin A (IU)	96
7.	Vitamin-C (mg)	0	14.	Energy (kcal)	18



Climate and Soil: Snake gourd prefers tropical and warm humid climate. The crop is susceptible to frost and cold. The optimum temperature for better growth and development of snake gourd is around 25-35⁰C. A loamy soil with p^H of 6.0-7.0 is ideal for its cultivation.

Important varieties: CO-1, MDU- 1, PKM-1, APAU SWETHA, BABY, MANUSREE.

Sowing time: Snake gourd is sown twice in a year, preferably February to March as a summer crop, while during June to July as a rainy season crop.

Seed rate: In general, about 4.0-6.0 kg seed is enough for sowing a hectare land area. However, Seed sowing in pits at a spacing of 2.0 m × 2.5 m requires about 1.5 kg seeds per hectare. In order to protect the seeds or seedlings, the seed should be treated with *Trichoderma viride* @ 4g, *Pseudomonas fluorescens* 10g or carbendazim 2 g/kg of seed.

Sowing/planting methods:

➤ **Shallow pit or flat bed method:** In case of shallow pit method of planting, pits of 60 x 60 x 45 cm size are dug at least 5 weeks before sowing seeds. The pits are then filled with a mixture of soil, compost (4-5 kg/pit) and recommended dose of nitrogen, phosphorus and potassium. Carbofuran @ 1.5 g/pit should also be thoroughly mixed before sowing seeds. After filling the pits, water is applied for

better germination of seed. Per pit, at least three or four seeds are sown at a depth of 2-3 cm. The recommended spacing of 1.5-2.5m x 60-120 cm should be adapted for better growth and development of snake gourd.

➤ **Sowing of seeds on raised beds or ridges:** In this method, usually channels of 40-50 cm width should be prepared either manually or mechanically with spacing of about 2.0-.2.5m between two channels. Seeds are then sown on both the edges of channel at least with a spacing of about 1 meter. In order to maintain the optimum plant population for higher fruit yield, at least 2 to 3 seeds per hill should be sown followed by light irrigation in between the channels for obtaining better growth and development. Using this method, 3500-4500 plants per hectare land area can be accommodated.

Nutritional requirement: Snake gourd responds well to both organic manure and fertilizers application. Farmyard manure should be applied @ 10-15 t/ha at the time of land preparation or applied in pits with soil at least two weeks before planting. Although snake gourd responds well to nutrients application, especially nitrogen but applying excessive nitrogen under frequent irrigation condition should be avoided, as it promotes excessive vegetative growth, especially in

heavy soils, which increases the male flower production proportionately than female flowers, thereby reduction in fruit yield.

Irrigation requirement: Snake gourd is treated as one of the moisture-sensitive crop, which suffers badly with both excess and moisture stress conditions. Irrigation should be restricted to the base of the plant or root zone without wetting the stems, leaves and developing fruits promotes decaying of vines and fruits. The critical stages of irrigation for snake gourd include immediately after seed sowing. Active vegetative growth stage, lowering and fruit setting stage as well as fruit development stage. Moisture stress during this stage of crop growth significantly reduces the fruit yield of snake gourd.

Intercultural operations:

- **Hoeing and weeding:** In general, in most of the cucurbits including snake gourd, it is essential to keep the held weed tree in order to obtain better growth and development of the crop. The snake gourd field should be free from weed flora during the initial growth stage by application of herbicides such as pre emergence application of either pendimethalin or Alachlor@ 1kg/ha, which will effectively control the weed flora under field conditions. Subsequently, it weeds pose problem in snake gourd crop, one manual weeding may be done in order to keep the weed population low.
- **Training of vines:** In general, the snake gourd prefers proper training for better growth and yield. The crop has the

potential to produce very long and large-sized fruits; hence, more prone to inflections when coming in contact with wet soils. In order to improve the fruit yield and quality, it is generally advocated to trail the vines on bowers or pedals. This crop is usually grown by training the vines over low trellises or bowers of 60 cm height, made up with bamboos and ropes or wires. The major advantages of training vines of snake gourd are lower incidence of diseases.

Use of plant growth substances: Being a monoecious cucurbit, the proportion of female flowers can be increased by spraying plant growth regulator, preferably after pruning the vines, either Ethrel @150 ppm or potassium naphthenate @ 0.1-0,2% at the two- and four-true leaf stage.

Harvesting: Depending upon the variety, season and cultural practices adopted, snake gourd starts fruiting 60 to 80 days after sowing seeds. The fruits should be harvested when they are still tender and about half to two-thirds of their full size, depending on the variety under cultivation.

Yield: In general the local cultivar yields about 6-10 fruits per vine while that of the improved cultivar is up to 50 fruits per vine in a cropping season. The average fruit weight varies from 300 to 1000 grams. Depending upon the variety, season and cultural practices adopted the average fruit yield varies from 100 to 250 quintals per hectare.