

## Recent Production Technology of Spine Gourd

Shailendra Kumar<sup>1\*</sup>, Marifa Gulzar<sup>2</sup>, Vipin<sup>3</sup> and Meinam Chanchan<sup>4</sup>

Important points of Spine Gourd	
Botanical name	<i>Momordica dioca</i>
Family	Cucurbitaceae
Chromosome number	2n = 2x = 28
Other name	Kartoli, Kantoli, Small bitter gourd, Teasal gourd
Propagation method	Tuberous roots

### Introduction

Spine gourd or teasal gourds; commonly known as “Kantola or Kakrol” is a popular nutritious vegetable that is cultivated all over India from ancient time. It is dioecious in nature. Generally, people confuse bitter gourd with this vegetable. Spine gourd has feature closely related to the bitter gourd but does not have the same taste. One can easily identify them as these gourd vegetables are round in shape and are also shorter in the length. This vegetable can grow well in a warmer season like in summer. They are cultivated over a wide range of soil but have good results in tropical and subtropical areas. Scientifically, the Botanical name of spine gourd or Kantola is “*Momordica dioica*” and they belong to the family of “Cucurbitaceae”.

This small, spiny fruit is always used as a vegetable for cooking. It may look spiny, but it is so soft to the touch that it won't hurt your fingers.



### Health Benefits of Spine Gourd:

Some health benefits of spine gourd vegetable are

- ❖ Spine gourd rich in protein and Vitamin C.
- ❖ Spine gourd seed oil is used as an illuminant.

**Shailendra Kumar<sup>1\*</sup>, Marifa Gulzar<sup>2</sup>, Vipin<sup>3</sup> and Meinam Chanchan<sup>4</sup>**

<sup>1</sup>Banaras Hindu University, Varanasi-221005, Uttar Pradesh, India

<sup>2</sup>Sher-e-Kashmir University of Agricultural Sciences and Technology, Shalimar Srinagar-190025, Kashmir, India

<sup>3</sup>Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, Ayodhya-224229, Uttar Pradesh, India

<sup>4</sup>Central Agricultural University, Iroisemba, Imphal-795004, Manipur, India

- ❖ Lowers the level of blood sugar in diabetic patients.
- ❖ Reduces the chances of cancer.
- ❖ Helps in anti-aging.
- ❖ Use of it is also helpful in improving the eyesight.
- ❖ Reduces excess sweating (Hyperhidrosis).
- ❖ High in fiber and anti-oxidants and thus very useful for easy digestion.
- ❖ Lactating mothers can eat this veggie to decrease the problem of vomiting in infants.
- ❖ Great source of phytonutrients and low in calories.
- ❖ Spine gourd also eliminates kidney stones from a body.
- ❖ Spine gourd is one of the best home remedies to cure piles.
- ❖ Using it in your diet is helpful in reducing the cough problem.
- ❖ Spine gourd contains nearly 72 mcg per 100 gm of folate which is helpful in reducing the chance of neural tube defect in the new born babies.
- ❖ Give relief in breathing problem.

### Spine Gourd Local Names in India:

Many people are looking for Kankoda (Kantola) in English or Telugu or Kakarakaya in English. Spine gourd is the English name of this vegetable. But it has various other names in particular language of the specific region.

Below are some of its names in the different language throughout India.

- ✚ Spine gourd or Teasel gourd (English)
- ✚ Kantola (Hindi)
- ✚ Meluku-pakal or Palu-pakal (Tamil)
- ✚ Katwal or Kankoda (Gujarati)
- ✚ Bhat korola or Kankrol (Bengali)
- ✚ Kartoli (Marathi)
- ✚ Avandhya or Bhat-kerela (Assamese)
- ✚ Adavikakara (Telugu)
- ✚ Bara -karela or kankera or kankoda (Rajasthani)
- ✚ Ben-pavel or Erimapasel (Malayalam)
- ✚ Karchi-balli (Kannada)
- ✚ Phagil (Konkani)

### Spine Gourd Cultivating States in

**India:** In India, this vegetable is cultivated widely as they can grow on a wide variety of soil. In market small size, fresh and healthy spine gourd has great demand. West Bengal and Karnataka are the two main commercially cultivating state. Indira Kankoda I (RMF 37) is one of the latest hybrid or improved variety of spine gourd. It can grow well in Uttar Pradesh, Orissa, Maharashtra, Jharkhand, Chhatisgarh and even many areas of Meghalaya are producing this vegetable for commercial purpose.

**Types of Spine Gourd:** In the market, there are two type of spine gourd available; small size and big size. Usually, the small size

spine gourd has more demand than the big size.

**Climate condition:** As mentioned earlier, this crop grows well in warmer season or in summer. Spine gourd farming can be operated over a wide range but have good results in the tropical and subtropical region. An optimum temperature of 27 to 33°C is considered as the best temperature for better development of spine gourd plant. Take care that good sunshine provided to this crop is more beneficial to the better growth and a good yield in this farming.

**Soil requirement:** It had been observed that spine gourd can grow well over a wide variety of soil. So, one can easily grow them in soil ranging from sandy, loamy to clay soil. Soils with good drainage power and good organic matter are supposed to be the soil for its farming. For spine gourd farming, the pH of soil ranging from 5.5–7.0 is considered as the best for it cultivation. However, you can manage pH of your soil by addition of some organic matter like to raise pH, you can use the lime stone or to reduce the pH, you can use the Gypsum.

**Propagation:** In any commercial crop, systematic and proper propagation lead to a good result in crop production. For spine gourds farming, propagation is mainly done by tuberous roots (5 lakh/ha), seeds (3-4 kg/ha) and with the help of tubers. Spine gourd is

dioecious in nature about 10% of male plants should be planted for good fruit set.

**Land preparation:** Prepare a land by leveling it with the help of local plow or tractor. And bring the soil in very fine tilth form. Usually, 2 or 3 ploughings of soil are sufficient to bring the soil in very fine tilth. It is advisable to add about 15 tonnes or some more traditional manure at the time of the last plough to the uppermost soil. It will help in raising the fertility power of your soil. Since a good land preparation for any commercial farming leads to good result.

**Sowing time and spacing:** In India, Spine gourd or Kantola farming can be done in summer and also in monsoon. Basically, as a summer crop, in tropical season, spine gourds are sown from Jan-Feb. And as monsoon crop, it is sown in the month of July to Aug. Sow seed 2 cm deep inside the prepared bed, 2-3 seeds per bed is a good idea for Kantola farming. However, keep proper spacing to obtain a good result in any commercial crop. Row to Row distance about 2 m and Planting plant 70 to 85 cm apart from each other is supposed to be the best spacing for commercial spine gourd farming. Spacing and density of any crop are sometimes also responsible for the amount of yield.

**Irrigation management:** Timely and proper irrigation in spine gourd farming helps to raise the production. After sowing of seed,

water should be done immediately. After that, give water on the basis requirement of spine gourd. But, give water as they need and irrigation requirements also vary from region to region and climate condition. In summer, frequent watering is necessary and there is no need of water in monsoon. However, give water if required. Always avoid over watering, it will lead to a bad result and sometimes complete loss of crop.

**Training:** As this vegetable plant is vine type plant so requires a support for good vegetative growth. So, train that vine plant by giving support to them. Use bower system or stake system to give support to those vine plant.

**Manures and fertilizers application:** In spine gourd farming, application of manure and fertilizer in proper dose to the plants is the key factors to increase the yield.

Apply about 15 to 22 tonnes/ha of ordinary manure like cow dung manure. Apply it at land preparation time or at last plough. To achieve maximum yield, soil should have sufficient nutrition and also have a good fertile power. However, in spine gourd farming, application of N, P, K with a ratio of 120:80:80 kg per hectare before sowing seed or planting with the help of tubers on the field is considered as the best soil treatment. Phosphorous and Potassium should be applied at the single time and apply nitrogen in two

equal doses; half at a flowering time and the remaining at vining.

**Weed control:** Since weed in any commercial crop lead to low yield as it reduces the good growth of the crop, removal of weed in Spine gourd farming should be done on the regular basis like at an interval of seven days. Hand Hoeing method or Manual weeding method can be used.

**Major insect pest and diseases:** Nematodes & fruit flies are the common pest that is found in the spine gourd farming. Mechanical ways like the fly catcher are used to control the fruit flies. However, Organic liquid pesticides have a good result to control them. Nematodes can be controlled by using neem cake at land preparation time in the soil. Also, to prevent this, intercropping should be followed.

Downy mildew, anthracnose, powdery mildew, mosaic and angular leaf spot are some common disease that is found in the Spine gourd cultivation. For controlling the disease, always remove and destroy the infected plant to control the viral disease. Use of Fungicides is the best way to control these diseases. A proper seed treatment is also another factor as it controls all type of seed borne disease.

**Harvesting:** After about two to three month, Spine gourd will be ready to use for vegetable purpose and fresh, healthy and small sized spine gourd has great demand in the

market of. After a year, they are ready to harvest at about a month later, pick them as possible and earn a lot. In the market, there is a greater demand for the quality spine gourd. Care must be taken while harvesting. Usually, picking at the tender stage is a good thing to get good profit. If you want to harvest of spine gourd for seed and not for the vegetable purpose then give some time to become mature. When they become mature, their colour change from green to yellow and pulp became red. There are variously improved varieties that have large no. of seed content.

**Yield:** If spine gourd seeds are once sown in the field, tubers sprout at the onset of monsoon every year. A good green yield can be harvested every year and up to five-six years from the same tubers or plants. However, one can easily achieve a production of 75 to 100 quintals per hectare.

