

Organic Farming of Cyclanthera pedata (Ram Karela)

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Organic farming is an agricultural system that uses fertilizers of organic origin such as compost manure, green manure and bone meal and emphasizes techniques such as crop rotation and companion planting. The principles of organic farming are health, ecology, fairness and care. To produce high quality food in sufficient quantity. To maintain and increase the long-term fertility of the soil. To encourage and enhance the biological cycle of microbes, soil plants and other organisms in farming. To prevent the side effects of chemical fertilizers and chemical drugs. British botanist Sir Albert Howard is called the father of modern organic farming.

Benefits of organic farming

Reducing dependence on chemical fertilizers reduces costs. Crop productivity increases. Due to increased demand for organic products in the market, farmers' income also increases. The use of organic fertilizer improves the quality of the land. The main objective of organic farming is to conserve and recharge the soil environment and restore its biological, physical and chemical form.

Organic farming of Ram bitter gourd (*Cyclanthera pedata*)

■ As soon as the rainy season ends, the hill bitter gourd which grows on vines in the mountains starts growing, which is also called Ram bitter gourd. It is not as bitter as the common bitter gourd. Ramkarela is grown in abundance in the hilly areas of Uttarakhand between August and

November, its vine does not require much care. No one knows why this vegetable was named Ram Karela, but it is believed that Lord Rama consumed this vegetable during his exile, since then it came to be called Ram Karela.

■ Apart from Uttarakhand, it is also found and eaten in South America. In Peru it is called Kaiva. Ram Karela is rich in medicinal properties along with nutrition. It contains fiber, protein, iron along with anti-oxidant elements. It can also be treated for tonsillitis by boiling it in milk. Its juice keeps the cholesterol level in the blood normal apart from high blood pressure. It is also effective in the treatment of artery disease, circulatory problems and sugar. The scientific name of Ram Karela is *Cyclanthera pedata*.

■ Ram Bitter gourd is an annual plant which usually grows up to 4-5 m. Its stems are slender, climbing in nature and climb on other vegetation by means of long tendrils. Its leaves can be up to 24 cm long, which are palmate or claw shaped in shape. Its flowers can be small, green or white in colour and are borne in clusters. Its plants are monoecious. Male and female flowers are found on the same plant. They are pollinated by insects. Its fruits are about 6-15 cm long and up to 6 cm wide, light green oval curved and almost hollow. The skin of the fruit is smooth or sometimes covered with soft thorns. 10-12 black seeds are found inside the fruit. It is usually grown for its edible fruits. Young fruits are also eaten raw.



Fig 1 : Ramkarela Fruit

Possibility of cultivation of bitter gourd in hilly areas

- It is grown in abundance in hilly areas. Naturally, the seeds inside its fruits get mixed in the soil in the months of March and April when the fruit bursts. These give rise to new plants in the rainy season. In India, it is found in almost all the mountainous states of the Himalayas up to a height of 3000 meters. It grows in abundance in Uttarakhand at an altitude of 1500 to 2000 meters. In order to make more profit from which crop in less space, farmers in mountainous areas can become financially strong by growing off-season and more profitable crops, especially vegetables.

- Farmers can earn more profit by cultivating sweet bitter gourd, which is found in abundance in hilly areas. They can plant sweet bitter gourd saplings in the vegetable garden or courtyard of their house and harvest from the same vine for a long time. There are great possibilities of successful farming in mountainous areas. It is a suitable crop for hilly states as its plants are

generally moderately tolerant to frost and are also free from diseases and pests. They do not require any special care. Therefore, this vegetable is also found in the wild form.

Method of cultivation of Ram bitter gourd

- Due to less cultivable land in mountainous areas, farmers have to work wisely to earn more profit from less space. This vegetable can be sown in hilly areas from April to July.

- For the cultivation of Ram bitter gourd, the field should be plowed well first and organic manure of cow dung should be added.

- Sowing of Ram bitter gourd

Properties and uses of Ram bitter gourd

- Ram bitter gourd fruits are a good source of potassium, magnesium and phosphorus. The mineral composition of these fruits is similar to

other vegetables of this family, such as watermelon, cucumber and pumpkin. Its fruits are rich in potassium (152 mg/100 g), calcium (14.0 mg/100 g), phosphorus (14.0 mg/100 g) and magnesium (8.4 mg/100 g). The amount of sodium in Ram bitter gourd is very low (0.91 mg/100 g). It can be used as a nutritional supplement considering the high amount of potassium, calcium, phosphorus and magnesium. Its fruits are also used to reduce inflammation, cholesterol and sugar levels in the body. Its fruits usually give high antioxidants. Tea made from its seeds can be used to treat high blood

pressure. Powder of dried seeds is used in intestinal treatment. Other plant parts can be used to treat gastrointestinal problems, high blood pressure, tonsillitis and diabetes.

■ It contains flavonoids, it has been found that they also have antioxidant properties. Its consumption reduces heart disease. Using its fruit as a vegetable keeps the gall bladder process balanced and it also controls the amount of sugar in the body.