Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 02, Issue: 02 (MAR-APR, 2022)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Production Technology of Cucumber

(*D. C. Meena[1] and Priyanka Katara[2])
[1]Assistant Professor, School of Agriculture, Suresh Gyan Vihar University, Jaipur
[2]Research Scholar, College of Horticulture & Forestry, Jhalawar (AU, Kota)
*dcmeena1989@gmail.com

Common Name: Khira (Hindi), Keera (Teugu), Vellarikkai (Tamil), Kakdi (Urdu)
Botanical Name: *Cucumis Sativus* L.
Family: - Cucurbitaceae
Chromosome Number: - 2n=2X=14
Origin: - India

Introduction

Cucumber popularly known as 'Khira' is one of the most important cucurbit vegetables and is an important summer vegetable crop cultivated throughout India. Cucumber plant has a climbing or trailing habit. In phase of maximum temperature and light produce more male flower while it's opposite weather the number of female flower more produce. The tender cucumber can be eaten raw or with salt in salad. Cucumber juice is often recommended as a source of silicon to improve complexion and health of the skin. Fruit have cooling effect and are used by patients suffering from jaundice, constipation and indigestion. Cucumber seeds can be used in oil extraction. The seed oil antipyretic properties. Cucumber is characterized by the presence of bitter principle called cucurbitacin, which are the cyclic triterpenes.

Cucumbers taste great and cholesterol-free, fat-free and sodium- free. 100 grams of fruit contain 96.3 gm moisture, 0.3 gm minerals, 0.4gm fibre, 0.4gm protein, 10 mg calcium, 0.6 mg iron, 423 mg chloride and 0.4 mg ascorbic acid (Selvakumar, 2014). They are a rich source of water that contains about 90 to 96 per cent of water.

Climate

Cucumber is warm season crop. Seed germination is best when temperature ranges between 25-30ºC. It requires a day temperature of 30ºC and high temperature of 20ºC for optimum plant growth. A daily average temperature below 20ºC and above 32ºC in not suitable for cucumber cultivation at higher temperature female flower production is reduced considerably resulting in reduced yields. (Fagaria *et al.*, 2006).

Soil

A well drained light loamy sand type is preferred for cucumber. The most suitable pH range is between 6.0 - 7.0. Sandy soils are preferred for early maturely.

Varieties

Pusa Uday, Himangi, Sheetal, Balam Khira, Pusa Sanyog, Priya, Stimora, Poinsett, Japanese Long green, Phule Priyanka, Swarna Poorna (Selvakumar, 2014).

Sowing Season

Cucumber is cultivated both as summer and rainy season crop.

Summer crop: January to February
Rainy season crop: June to July
In hills of Meghalaya the seeds are sown in April.

Seed Rate

Approximately 2.5-3.5 kg seed will be required for sowing one hectare. (Salunkhe and Kadam, 1998).

Land Preparation and Method of Sowing & Spacing

Land should be prepared well enough to remove any weed from previous crops. Giving 3 to 4 ploughings will get the soil to fine tilth stage and form long channels at 1.5M apart. To make the soil rich in organic matter, supplementing with garden manure or well decomposed farm yard manure like cow dung is advised. When it comes to sowing methods, cucumber seeds are usually sown by dibbling method at a row to row distance of 1.5 to 2.5 meter and plant-to-plant spacing of 60cm to 90cm. Two to three seeds should be sown in each pit. (Fagaria *et al.*, 2006).

Methods of Planting: Mostly in cucurbits, in situ method of sowing is followed. But in certain areas of Northern India and hills where the main objective is to get early fruit harvest, the seedlings are raised in polythene tubes and plantation is done in the field when the conditions are favorable without disturbing the soil ball. Transplanting is done at 2 true leaves stage.

1) **Furrow method:** Furrows are made at 1 to 1.5 m in cucumber. The sowing is usually done on the top of the sides of furrows and the vines are allowed to trail on the ground especially in summer season.
2) **Bed method:** In some regions, bed system is in fashion where the seeds are shown on the periphery of beds. The width of the bed is almost double to the row to row spacing.
3) **Hill method or raised beds or raised point:** The hills are spaced at a distance of 0.5-0.75m and 2-3 seeds are sown per hill, after germination retain only one or two plants per hill. This method facilitates proper drainage especially in heavy rainfall regions.
4) **Pit Method**: Generally, it is followed in southern India. The pit is lower than the normal bed surface. Training is done by Pargolla or Pandal system. (Fagaria *et al.*, 2006).

Irrigation

Sowing is done on the pre-irrigated furrows on top of the ridge on both sides of the beds. Subsequently irrigation is applied second or third day of sowing. The crop is to be irrigated at every 3rd to 5th days. Flowering and fruiting period are very critical any stress during the period will adversely affect yield. The crop cannot withstand water stagnation even for a short period. In areas where water is a limiting factor adopt drip irrigation. (Singh, 2011).

Training and Pruning

Vines are trained on bamboo with the rope or wire for high production and quality. Cucumber can be trained in bower system**.** The height of Bower should be about 1.5 m and spacing is kept as 2 m x 1 m between row to row and plant to plant respectively. Japanese long green and hybrids like Pusa samyog are suitable for bower system.

Pruning of secondary shoots up to 10 nodes increase the fruit production. Field should be kept weed free throughout cropping season. First weeding may be given 15 to 20 days after sowing. Two more weeding's are given at 25 to 30 day interval.

Manure and Fertilizers

25 to 50 q per ha of FYM is to be mixed with soil or applied to the pit besides that about 100 kg N, 50 kg each of P and K per ha need to be applied. Half of Nitrogen, entire P and K are

applied in the pits or at the time of sowing. Remaining quantity of nitrogen is applied at 30 days after sowing.

Harvesting

Harvesting can be done @ 40 to 45 days after sowing. On an average of 8 to 10 harvests can be done. Timely picking of cucumber is more important for better quality for fruit.

Yield

8 to 10 t/ha in 80 to 90 days for salad and the average yield is about 60 to 15 quintals/ha.

Plant Protection

Disease and their Control

Bacterial wilt: It is caused by *Erwinia tracheiphila*. It affects the vascular tissues of the plant which result in immediate wilting.

Treatment: Spraying of foliar insecticides is done to cure the bacterial wilt.

Powdery mildew: This disease is caused by fungus *Sphaerotheca fuligenea*, The symptoms are appearance of white powdery spots on upper surface of leaves which causes leaf withering.

Treatment: Application of carbendazim@2gm in 1ltr of water will help to cure powdery mildew. It can also be controlled by fungicidal sprays of Chlorothalonil, benomyl or dinocap.

Mosaic: The symptoms are stunted growth of plant, leaves turn down and fruit knobs become light yellow in color.

Treatment: Application of Diazinon is done to cure mosaic disease. Use of Immidachloprid-17.8%SL @7ml in 10ltr of water is done to cure disease. (Sherf and Macnab, 1986).

Pest and their Control

Fruit fly: It is serious pest found in cucumber. Females fly lay eggs below epidermis of young fruits. Later on maggots feed on pulp afterward fruits starts rotting and get drop.

Treatment: Foliar application of Neem oil @3.0%is given to cure the crop from fruit fly pest.

Red pumpkin beetle: The grubs feed on the roots and underground portion of host plants and fruits touching the soil, infested parts start rotting due to secondary infection by saprophytic fungi.

Treatment: deep ploughing soon after the crop exposes and kills grubs and pupae. Spray Malathion @ 2 ml /liter, dusting with 5% Malathion, apply Furadan 3G (Granule).

References

1. Sherf, A.F. and Macnab, A. A. (1986). Vegetable Diseases and Their Control. *John Wiley and Sons*, New York.
2. Selvakumar, R. (2014). A Textbook of Glaustas Olericulture. New Vishal Publishers, New Delhi.
3. Singh, D. (2011). Vegetable Science, New Vishal Publications, New Delhi. Pp232-341.
4. Fagaria, M. S.; Choudhary, B.R. and Dhaka, R.S (2006). Vegetable Crops production technology Vol.-II, Kalyani Publishers, New Delhi, pp166-183.
5. Salunkhe, D. K. and Kadam, S. S. (1998). Handbook of vegetable science and technology: production, composition, storage and processing. New York: Marcel Dekker. pp245-255.