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AGROTECHNOLOGIES OF CULTIVATION OF FIRST-GENERATION HYBRIDS OF CUCUMBER (CUCUMIS SATIVUS L.) IN UNHEATED GREENHOUSES UNDER UZBEK CONDITIONS

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Abstract:

this article provides information on the biology of cucumbers, their importance, varieties grown for greenhouses and optimal planting periods, planting schemes, and cultivation technologies.

Keywords: greenhouse, varieties, planting dates, seedlings and agrotechnologies

Cucumber (Cucumis sativus L.) is an annual herbaceous plant belonging to the Cucurbitaceae family. It is a liana that lays on the ground, spreads out, or climbs up by clinging to the surrounding objects (with curls) when its stems develop 4-5 leaves. The main stem is branched, pointed, hairy, and grows horizontally. Its length, depending on the variety and growing conditions, reaches from 50-80 cm to 2 m, sometimes even more. Secondary stems grow from the lateral stems emerging from leaf axils on the main stem. After several (7-10) leaves, curls are formed on the stem.

The root system grows mainly in the plowed layer of 20-25 cm of soil. The tap root and some lateral roots can reach up to 1 m. The lateral radius of the roots is about 1.5. When the main and lateral stems of the plant touch the wet soil, additional roots grow from their joints.

Depending on the variety, the leaves can be heart-shaped, pointed heart-shaped and heart-shaped.

The flowers are unisex, consisting of male and female flowers, yellow in color, male flowers are located in leaf axils and form a shield-shaped inflorescence, female flowers are in leaf axils, more one, rarely two or three, are placed on the side stems. Female flowers have a node below and are covered with thick hair.

The fruit is a pumpkin. The unripe fruit is eaten fresh with salt and vinegar. Depending on the age, the names of the commercial fruit change: a two-three-day-old node is called a "tube", a technically mature one is called a "blue barra", and a fully ripe one is called a "seed". Fruits are spherical in shape, but mostly ovoid, pod-shaped or cylindrical.

The seeds are oblong-elliptical, white or yellow in color. The absolute weight of 1000 seeds is 16-40 g. It maintains normal fertility for 5-6 years.

Cucumber is a popular vegetable crop and is widely grown. Its unripe barra fruits are eaten fresh, salted, and preserved, adding flavor to food and helping digestion. Its biochemical composition: 95.0-96.0% water, 4.0-4.5% dry matter, 0.8-1.0% protein, 0.10-0.11% oils, 1, 5-2.5% sugar, 0.7-0.8% fiber, 0.4-0.5% ash, 8-28 mg.% vitamin "C", 0.03-0.2 mg.% Contains vitamins A, V1, V2, RR. Ash contains a lot of potassium, phosphorus and calcium. In addition, cucumber contains various trace elements, mineral salts and enzymes, and is an important tool for improving metabolism and neutralization. It is one of the dietary products that cannot be replaced in the diet of people with diabetes. The homeland of the cucumber crop is the famous tropical regions of India and Indo-China. Cucumbers were cultivated in those places until AD, and later spread to other countries. Cucumber was known in Russia in the 8th-9th centuries, and in the 16th century it became widespread in Europe and America.

Cucumber is heat demanding for a southern plant. However, due to the short growing season, it is extremely widespread - up to 630 north latitude. It is grown even beyond the Arctic Circle in frost-protected soil.

Cucumbers are widely grown in Japan, China, India, Asia and the USA, and less common in European countries. 2.4 million in the world. planted per hectare, 41.5 mln. tons of gross harvest, so 26.5 mln. tons are grown in China. In the Commonwealth of Independent States, the cultivated area of cucumbers is 200,000 hectares, and it occupies the last third place after cabbage and tomatoes. In Uzbekistan, it is planted on an area of more than 8-10 thousand hectares and is in the leading position.

Biological properties. Cucumber is a heat-loving plant. The seed germinates at a temperature of 12-130C. If the temperature is lower than this, the seed may rot without trying to germinate. At a comfortable temperature of 25-300C, the seeds germinate in 5-6 days, and in 7-10 days when planted in the field without cooling.

A favorable temperature for the growth of a cucumber plant should be around 25-320C. However, at a temperature of 6-80C, the growth and life activity of the plant stops, and further lowering of the temperature or long-term continuation of low temperature will cause irreparable changes. In such cases, the leaves turn yellow, the tubes fall out, and the unfit for consumption are wrinkled fruits. This is the reason why it produces less when it is planted late in the summer or in poorly heated greenhouses. When the temperature drops to 00C, the plant dies.

The soil for planting cucumbers should be rich in fertile humus, well-draining, and well-retaining moisture. Before planting cucumbers, 8-10 cm thick rotted manure is added to the ground and plowed well. Humus is added to the 25 cm layer of greenhouse soil (3:1 ratio). Cucumber cultivation requires warm soil with 20-30% organic nutrients. It is recommended that the pH (alkalinity of the soil) in the soil be within the norm of 5.5-6.5. YeS (concentration of salt in the soil and electrical conductivity) should be 2. Magnesium (Mg) deficiency is observed in plants as a result of insufficient acidity in the soil. When seedlings are transplanted, the soil temperature should not be below 16°C. For this, a ditch or ditch is dug at a depth of 3540 cm, and half-rotted manure is covered with a thickness of 10-15 cm. Plant growth slows down when the soil temperature is 12°C. During the entire vegetation period, it is recommended that the soil temperature be 18°C at night and 22°C during the day. A temperature below this indicator causes a decrease in productivity. Soil moisture should be 70-80%.

Peculiarities of growing cucumbers in unheated film greenhouses. Cucumbers are grown mainly in the spring-summer planting period in greenhouses with spring film and heated by the sun. Greenhouses of this type should be ready for use 10-15 days before planting seeds or seedlings.

As a result, good warming of the soil and air in the greenhouse is achieved. It is better to grow cucumbers in this way after preparing seedlings or greens. When growing cucumbers in spring film greenhouses, it is convenient to use its varieties and hybrids, which are stable in relation to daily temperature changes and do not require large costs. In such greenhouses, it is desirable to grow bee-pollinated, quick-ripening varieties of cucumbers. The methods of seed preparation and seedling cultivation for spring film greenhouses are the same as for winter greenhouses. If 25-30-day-old seedlings are used in film greenhouses, the expected result is achieved.

In spring greenhouses, mainly well-germinated, vigorous seedlings

should be planted. Seedlings should be transplanted in conditions where the soil temperature is not lower than 16-17 0C. In case of a sharp drop in temperature in spring film greenhouses, the efficiency of cucumber cultivation increases significantly when technical, calorifiers, heat generators and also biological heating methods are used**.**

For biological heating, a mixture of well-moistened cotton husks, manure and small straw is placed in a 20-30 cm thickness, and soil is poured on top. The best scheme for planting Manul-type hybrids is the tape method. The process of caring for cucumber plants in spring film greenhouses includes air temperature, soil and air humidity, watering, loosening of seeds, feeding, plant formation, removal of old leaves and branches freed from the crop, and soil spreading. When growing cucumbers in film greenhouses, its stems are tied to vertical crossbars. The plant is formed on a single stem and is not hooked until its main branch reaches the frame. Side branches of all varieties and hybrids are hung on hemp threads after 1-2 leaves. If the soil in the greenhouse is fertile and organic and mineral fertilizers were applied to it before planting, it will not be fed until the plant begins to bear fruit. If the soil fertility is low, plant feeding starts a week after planting. After the plant begins to bear fruit, it is fed once every 7-10 days. Plant feeding is stopped in the last month of the planting period. In mid-May, the film is collected from the greenhouse frames, but the harvest from the plant continues until the end of June.

Currently, very short (10-12 cm) varieties of hybrids are common. They are distinguished by their speed and the connection of several tubes in one joint. Among those planted in greenhouses, the following G1 hybrids are more common: in autumn-winter planting - Kuraj, Magnum, Amur; during the transitional planting period - Magnum, Orzu; in winter-spring planting - Orzu, Courage, Artist, Roki, Multistar. Of these, Kuraj F1 is not zoned, the rest are zoned.

Cultivation of seedlings: in accordance with the conditions of Uzbekistan, cucumber seedlings are prepared in the following way:

By planting seeds in pots;

The planting period is divided into 4 seasons:

Seedling preparation time:

1. Summer-autumn season: August
2. Autumn-winter season: September
3. Winter-spring season: January
4. Spring-summer season: May

For the summer-autumn and spring-summer season, the method of sowing seeds directly in the ground, and for the autumn-winter and winter-spring season, the planting method is suitable. In film greenhouses, seedlings are planted in the soil in rows, 70x35-40 cm in size, or in a double-row tape method. In this case, the distance between the tapes is 80-90 cm, the distance between the rows on the tape is 50-60 cm, and the distance between the rows is 20-25 cm. A bush of tomatoes produces one or two stems. Plant care activities in film greenhouses include keeping the temperature at 25-27 0 C during the day, 14-16 0 C at night and air humidity around 60-70% with the help of ventilation, timely watering and feeding, 3-4 It covers mitigation, pest and disease control, and more.

When caring for cucumber plants, special attention should be paid to keeping the temperature at the most comfortable level, that is, it should be 25-28°C on sunny days, 20-22°C on cloudy days, and 18-20°C at night.

It is not necessary to allow the temperature to fall below 18°C, because the lack of heat causes the plants to become weak and their resistance to diseases decreases.

If the temperature is lower than 15°C, the plant stops growing, and if it is higher than 45°C, they overheat and the fruit sets. Air humidity in greenhouses for cucumbers should not be less than 85-90 percent. Cucumbers are watered according to the time of the year, soil moisture should not fall below 85-90 percent. One of the main features of cucumber is that it grows quickly and produces a lot of blue mass. After the seedlings are planted in the main area, the plants are tied to the sori for a week, and every other week they are wrapped around the hanging hemp rope. Otherwise, the plants will grow bent and fall to the ground, and they will have a lot of whiskers. Delayed pruning of hemp leads to crooked growth of the plant and cracking of its branches, reducing the yield by 20 percent.

One of the most important agrotechnical activities that ensure the increase of productivity and its high level is the shaping of the plant. For good growth of cucumber and good development of the root system, fruits are picked up to the 4th-6th joint. Along with shaping, it is necessary to remove the whiskers of the cucumber, because many infections accumulate in the leaves surrounded by them.

It is very important to remove the crooked fruits from the plants in time, because their growth should not consume the plastic material produced during photosynthesis.

Humidification of plants is an effective method of growing cucumbers in a greenhouse, this event is carried out 2 times during the initial growth period of seedlings (the frames are closed for 1-2 hours in the spring, for 30-40 minutes in the summer. Air temperature It should not exceed 30° C. Then the frames are gradually opened).

The height of the greenhouse is very important for the cucumber crop.
In this case, the fruits on the top branch ripen evenly.

95% of cucumber fruit is water. Therefore, cucumber is a plant that requires a lot of water. Every 3-4 days, 8-10 l of water is needed for 1 m2.

In our conditions, two types of irrigation methods are used:

1. Drip irrigation.
2. Watering from a ditch.

The temperature of the irrigation water should be 23-24°C. After watering the plants 2-3 times during the growing season, it is necessary to loosen the rows between the rows at a depth of 15-16 cm.

Once a week, the cucumber layer is treated with fungicide to prevent disease. During the growth period, the nutrition of plants varies. The plant receives 10% of its nutrients from the time the sprouts sprout from the ground to flowering, 20% until the fruit begins to ripen, and the main part of the nutrients, i.e. 80%, during the period of ripening of the fruits.

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