

TECHNOLOGY OF GROWING CUCUMBER SEEDLINGS AND SELECTION OF VARIETY IN A GREENHOUSE

Kholikov Mukhridin Bakhromjon o'g'li
Senior Lecturer at the Department of
Fruit and Vegetable Growing, Fergana State University.
E-mail: muhridinkholikov995@gmail.com

Qobilova Shakhnoza Dilmurodjon qizi
Student of Fergana State University.

Ibroximova Mokhirakhon Khalimjon qizi
Student of Fergana State University

Abstract

This article analyzes scientifically based agrotechnological methods of growing cucumber (*Cucumis sativus* L.) seedlings in greenhouse conditions and the criteria for selecting high-yielding, stress- and disease-resistant varieties. The importance of substrate composition, biological properties of seeds, germination, optimal control of microclimate conditions (temperature, humidity, light) and mineral nutrition in the process of growing seedlings is highlighted.

Keywords: Greenhouse agrotechnology, cucumber, seedling cultivation, substrate, microclimate management, seed germination, variety selection, yield.

Introduction

Cucumber (*Cucumis sativus* L.) is an annual herbaceous plant belonging to the Cucurbitaceae family. 100 g of cucumber fruit contains 96 g of water, 0.6 g of protein, 0.1 g of fat, 2.2 g of carbohydrates, 0.03 mg of vitamin B1, 0.02 mg of vitamin B2, 0.3 mg of niacin, 12 mg of vitamin C, 12 mg of calcium, 0.3 mg of iron, 15 mg of manganese and 24 mg of phosphorus. In addition, 100 g of the product contains 12 kilocalories. The specific aroma of cucumbers is due to the presence of essential oils (10 mg per 1 kg of fruit), and the pleasant refreshing taste is due to the presence of organic acids (16–68 mg% of dry matter). Unripe cucumber fruits are consumed fresh, salted and canned. Cucumber stimulates appetite and is a good remedy for dehydration. It dissolves kidney stones, uric acid crystals, helps prevent atherosclerosis and obesity. In addition, cucumber is widely used in cosmetics.



Main part

Growing cucumber seedlings in a greenhouse and selecting varieties is one of the most important areas in vegetable growing. Cucumber is an annual herbaceous plant belonging to the Cucurbitaceae family, which is of great importance in ensuring the food security of the population. It contains water, protein, fat, carbohydrates, vitamins and minerals. Cucumbers are used not only as food, but also as a medicinal and cosmetic product. Growing cucumbers in a greenhouse allows you to get a high-quality harvest throughout the year. For planting cucumbers, fertile, rich in organic matter, high moisture capacity, non-saline and surface water areas are selected. The most favorable soil pH for plant development is considered to be 5.5–5.8. Cucumbers do not grow well in saline soil. Potatoes, cabbage, carrots and beets are the best predecessor crops for cucumbers in crop rotation. It is not recommended to plant after pumpkin and tomato crops, as diseases and pests may increase. It is recommended not to plant cucumbers in the same place for more than two years, and to replant after three years.

When choosing seeds, choose high-quality, disease-resistant, early-maturing varieties. Seeds are disinfected before planting. It is recommended to use a mixture of peat, humus and sand when preparing the substrate. The soil should be loose and air-permeable. Seeds are sown to a depth of 1.5–2 cm. The temperature is maintained around 25–28 °C. After germination, a balance of light and moisture is ensured. When 3–4 true leaves appear, the seedlings are transplanted into a greenhouse. The soil temperature should be 18–20 °C.

Cucumbers are considered a moisture-loving plant, but excess water leads to root rot. Drip irrigation is the most effective method of growing cucumbers. This method prevents excessive use of nitrogen, phosphorus and potassium fertilizers. Regular application of organic fertilizers and tying the main stem and regulating side branches increase yield. Compliance with preventive measures and the use of biological agents are important in the fight against diseases and pests.

Table 1 Recommended varieties for greenhouse planting

| Variety name | Features | Advantages |
|---------------------------------|--|---|
| Ranni-645 | Early ripening, suitable for greenhouses | It yields quickly, is marketable |
| Uzbekistan-740 | Local variety, suitable for the climate | Stable yield, durability |
| Zilol | Middle-aged | Tastes good, keeps well |
| Parad | Hybrid variety | High yield |
| Navruz | Local variety | Grows well in a greenhouse |
| Gollandiya F₁ | Hybrid | Disease resistant, marketable |
| Alibi F₁ | Hybrid | Fast-ripening, high-quality fruit |
| Regal F₁ | Hybrid | High yield |
| Superina F₁ | Hybrid | Fruits with the same shape are in high demand in the market |
| Marta F₁ | Parthenocarpic | Produces fruit without pollination |
| Jasorat | Local variety | Greenhouse-friendly, hardy |
| Visente | Hybrid | High yield |
| Enni F₁ | Parthenocarpic | Suitable for closed greenhouses |
| Oq Farishta | Middle-aged | Tastes good, marketable |
| Quyosh | Local variety | Grows well in a greenhouse |
| Kristal | Hybrid | High yield |



In greenhouses, cucumber varieties are divided into parthenocarpic, self-pollinated and hybrid groups. Parthenocarpic varieties produce without pollination and are suitable for closed greenhouses. Self-pollinated varieties produce with the help of bees, have a pleasant taste, and are often suitable for open ground. Hybrid varieties (F1) are resistant to diseases, ripen early and have high crop quality. Popular varieties include Amur F1, Zamindor F1 and Marvarid F1. Parthenocarpic hybrid varieties are best suited for closed greenhouses. With the preparation of high-quality seedlings, care and timely fertilization, a stable harvest can be obtained throughout the year.

Conclusion

The scientific organization of agrotechnical measures in the cultivation of cucumber seedlings in greenhouse conditions is the main factor in obtaining high-quality seedlings. In particular, high seed quality, proper selection of the substrate, optimal control of microclimate indicators, and balanced plant nutrition ensure rapid and healthy development of seedlings. At the same time, in the process of variety selection, special attention should be paid to their biologically and economically important characteristics, including yield, disease resistance, parthenocarpic properties, and compliance with market requirements. The results of the study confirm that an integrated approach, i.e., the combination of scientifically based agrotechnology and the right variety selection, is crucial for increasing the efficiency of cucumber cultivation in greenhouse conditions.

References

1. Khamidov, A. et al. "Fundamentals of Vegetable Growing". Tashkent: National Encyclopedia Publishing House of Uzbekistan, 2018.
2. Mirzaev, M. "Agrotechnics of Cucumber Growing". Tashkent: Agroilm, 2019.
3. Kurbanov, Sh. "Scientific Vegetable Growing". Samarkand: SamSU Publishing House, 2020.
4. Ministry of Agriculture of the Republic of Uzbekistan. "Cucumber Varieties and Recommendations for Their Cultivation". Tashkent, 2021.
5. FAO (Food and Agriculture Organization). "Cucumber Production Guidelines". Rome, 2020.
6. International Center for Agricultural Research (ICARDA). "Protected Cultivation of Cucumbers in Central Asia". 2022.
7. Juraev, B. "Technology of Vegetable Growing in a Greenhouse". Tashkent: Agronashr, 2023.
8. Farmers' Union of the Republic of Uzbekistan. "Methodological guide to growing cucumbers in greenhouses." Tashkent, 2024.

