

Cultivation Of Seedlings In Vegetable Farming

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Abstract: In the article, despite the high cost of growing seedlings in vegetable growing, the seedling method is economically justified, and it is widely used in vegetable growing, and in some cases it is impossible to grow vegetables. The methods and techniques of seedling cultivation, intellectually correct selection of methods of cultivation from seedlings or without seedlings are important for the economy of vegetable growing.

Keywords: Nursery, open and sheltered area, planting seedlings, cubes, trays, blocks and cassettes for growing seedlings.

Introduction

Method of growing seedlings and its importance. The essence of growing plants through seedlings is that they are grown in the first period of their life, in a small feeding area, with sufficient nutrients and moisture, in artificial climate conditions, and then transplanted into open or sheltered ground structures. consists of being transferred. A seedling is a young seedling (grass) that is intended for transplanting to a place of permanent growth, but whose fruit-bearing organs have not yet formed. It is grown in sheltered ground because it is not possible to grow it in the open field according to the thermal regime. More than half of open field vegetable crops and about 90 percent of protected land are planted with seedlings. It is advisable to use the seedling method at the end of the growing season in crops that require a large feeding area and, if necessary, for early harvest.

The seedling method has a number of advantages over the conventional method of sowing seeds directly into the ground. Seedlings are usually grown for 30-80 days. The achieved progress in plant development allows early harvest. Selling early harvest at higher prices provides additional income. Thanks to the advance, the seedling method allows you to extend the growing season. This increases plant productivity and makes it possible to grow heat-loving crops and enrich the variety of vegetables in the northern regions, where the growing season is long, but there is not enough heat, and there are no conditions to collect the harvest from seeds. The seedling method reduces the need for land at the beginning of the plant's life. Better provision of plants with food, moisture, heat, light and other factors, better protection of still weak seedlings from pests, diseases, and weeds, can reduce labor costs in the fight against them. In the seedling method, seed consumption is reduced by 3-7 times compared to planting in a permanent place. Cultivation of plants through seedlings in protected land conditions extends the product release period and provides an opportunity to economically use artificial lighting sources.

In horticulture, growth and development of plants grown from seedlings compared to similar plants grown without seedlings is called advance. Advancement should not be confused with the age of the plant, which is determined from the time it was planted in its permanent place, or the number of days from sprouting to its permanent place, or the number of leaves. The improvement is considered by comparing a plant planted as a seedling and taking root in a permanent place with a plant of the same type and variety grown without seedlings. The size of the advance is determined by the number of days that have passed from the day of planting or sowing of seeds to the collection of the first crop. The duration of development is always less than the duration of the seedling age, because crops grown without seedlings develop in well-lit conditions, the root system does not absorb the effects of damage, and is well adapted to open ground conditions.

But in the cultivation of seedlings, it is necessary to spend a lot of money and labor on the construction of facilities for growing the crop and its cultivation. When seedlings are transplanted, damage to their root system has a negative effect on its growth and development. In this case, a root system without tap roots, which does not go deep, develops, and the resistance of the plant to adverse conditions and diseases, especially viruses, decreases.

Despite the high cost, the seedling method is economically justified and is widely used in vegetable growing, and in some cases it is impossible to grow vegetables. The methods and techniques of seedling cultivation, intellectually correct selection of methods of cultivation from seedlings or without seedlings are important for the economy of vegetable growing.

Materials and Methods

Methods of growing seedlings. Seedlings were previously grown in biologically heated greenhouses and nurseries. Currently, seedlings for open ground are grown mainly in heated film greenhouses, and in homesteads and field yards in small film-heated greenhouses in film greenhouses. In the winter-spring rotation for protected land, seedlings are grown in the seedling section of heated winter glass or film greenhouses. Seedlings for other rotations are grown in facilities specially adapted for this purpose.

For all rotations of protected land in large greenhouse complexes of foreign countries, seedlings are grown directly on the soil (without mulch) in special greenhouses or seedling sections, which allows to save space and use mechanization. provides. In large vegetable farms, greenhouses (mainly with film), film devices and cold nurseries are being built to prepare seedlings for open ground. is cultivated.

The seedling is grown in two ways: transplanted and without transplanted. The transplanting method is used for plants whose roots are resistant to damage when transplanted to a permanent place (cabbage, tomato, pepper, common onion, leek, lettuce). It is advisable to use the method of growing seedlings without transplanting lawns (cucumber, patisson, melon, watermelon, eggplant) and crops grown in a small feeding area (lettuce, onion, etc.)

When growing by transplanting, the seed is sown thickly, and after it germinates, when 1-2 leaves are formed, it is planted in the soil of the building or in nutrient cubes and pots, giving a larger feeding area. Transplanting young grass is pikirovka (sparse transplanting), transplanted young sprouts are called grass, and the place where they are planted thickly is called a lawn. Grasses are planted on the ground in pre-marked ridges or grooves with a board or stake or a toothed marker (picking comes from the word "pika") (Fig 1)

Figure 1. The order of the process of planting a seedling.

The labor cost increases by 1.2-1.5 times when growing seedlings. It allows to save greenhouse space (2-3 weeks), weed out weak and diseased plants, and allow the formation of a mature root system during the preparation of lawns for planting. Seedlings of fairy crops are often grown by this method.

If the seedlings are grown without transplanting (without pricking), giving them enough feeding space or directly sowing the seeds in pots and cubes, and after germination of the seedlings, until they are planted in the open field or in the greenhouse grown there. Side and evening crops, as well as seedlings of pumpkins, are grown without pollination.

There are 2 main ways of growing seedlings: without a pot and with a pot. In potless cultivation, sowing or sowing of seeds is carried out directly on the site of the structure. It is easy and cheap to grow a seedling without a pot. But when the seedling is transplanted, most of the root remains in the soil, and when it is transplanted to another place, it is delayed in catching and growing. In the cultivation of seedlings without a canopy, the seeds are sown on the soil of the greenhouse with different types of greenhouse seeders. In greenhouses with a section of 6 meters, three 1.6-m-wide strips are taken and four 0.4-m-wide strips are made, or two 2.0-m-wide strips are made and 3 strips are left.

Potted seedlings are grown in nutrient cubes or 5, 6, 8, 10 cm pots. Nutrient cubes are made from food mixtures with different composition to existing components. New 5% mole manure or other sticky

substances are added to the mixture so that the tubers do not rot. They are made by pressing them on the IGT-10 machine, as well as by making a liquid mixture of peat and pouring it into molds, or by hydropeat methods. Peat blocks (plates), tablet and disc-shaped briquettes are produced in foreign factories. Seed or grass is planted in the hollow of the cubes. Seedlings are planted in a permanent place with nutrient cubes. Tuvaks are hollow containers that are filled with the same mixture used for food cubes, but do not add cow manure. Root canals are made of different materials, both penetrating and impermeable. The peat industry of foreign countries produces hollow bags made of a mixture of high peat and cellulose, with adhesives added to them, which lose their properties after a certain period of time after being planted in the field. They are made in the form of empty cups or cellular blocks. Such tubules quickly disintegrate in the soil and do not resist root growth (Fig. 2).

Figure 2. Cubes, trays, blocks and cassettes for growing seedlings.

a, b - hollow plastic bags with bottom and bottom; v – hollow peat pot; g – polyethylene bag; d - hollow peat block; ye – plastic block; j, z – peat cubes and tablets; i - peat slab (peat block).

In foreign countries, such blankets are made of special types of paper and plastic, and they easily disintegrate after the seedling is transplanted to a permanent place in the field. The automatic line that produces seedlings in paperpot paper trays is of particular interest. In this line, the costs of filling 1,000 pots with the substrate and compacting it, planting seeds and covering it with the substrate are 0.16 man-hours.

When planting by hand, polyethylene bags and sleeves, pots made of ceramic and polymer materials are sometimes used for growing seedlings. Cell blocks made of hard plastic in the form of trays or cassettes (40-70 cells) are also used. When planting, seedlings are removed from them with soil.

Plant pot seedlings have a strongly developed root system, they are fully preserved when transplanted, the nutrition of the planted seedling from the soil is improved due to the nutrients contained in the pot. Due to the absence of obstacles in the growth of seedlings, the tubers reach the harvest 12-14 days earlier. In this case, productivity increases by 20-30%. Pumpkin seedlings are usually grown for early harvest or for pumpkin-related crops that are not suitable for transplanting.

Petersburg vegetable growers use the container method of growing seedlings. Container service is carried out by 40×30×7 cm boxes. 40 cubes with a diameter of 5.5-6 cm are poured into the containers, or pulp (liquid mixture) is poured to cut the cubes later. The boxes are densely placed on the ground of the greenhouse, and a path is left every 2.5-3 m in width.

Containers with seedlings are removed from the greenhouse for conditioning 7-10 days before planting. The structures are emptied 7-10 days before planting, and the second rotation crops can be planted in time. It is easier to remove and transport seedlings. Seedlings are taken to the field without trying, the root system is well preserved. In addition, if planting is delayed for some reason, such seedlings will not wither.

It is also used to grow seedlings in film. Usually, the roots of seedlings grown in soil mixture or nutrient cubes penetrate the soil very quickly, when they are sorted, a certain part of the root is broken. If a film is

laid under the soil mixture or nutrient cubes, the seedling will form a strong and dense root system, and when planted in the open field, it will quickly take hold and better maintain its speed in its development.

Conclusion

In conclusion, despite the high cost of growing seedlings in vegetable growing, the seedling method is economically justified and it is widely used in vegetable growing, and in some cases it is not possible to grow vegetables. The methods and techniques of seedling cultivation, intellectually correct selection of methods of cultivation from seedlings or without seedlings are important for the economy of vegetable growing.

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