

Morphobiological Properties and Significance of Leeks

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Abstract:

The article provides information about the origin and botanical family of the leek.

The morphological structure of leeks differs sharply from other types of onions and its biological properties are described.

The chemical composition of leeks and how to use them for disease prevention are explained in detail. Information is provided on the characteristics of seed germination and the shelf life of these characteristics.

Keywords: False stem, onion, plant, morphology, biology, species, seeds, chemical composition.

Introduction.

The role and importance of the agricultural sector in ensuring food security of the population on a global scale is increasing every day. In particular, in our country there is an urgent issue of using available resources and opportunities to ensure a guaranteed supply of agricultural products to the population, further increasing productivity and interest, introducing scientific achievements and modern approaches to the field.

Respected President Shavkat Mirziyoyev, in his address to the Oliy Majlis on December 29, 2020, especially emphasized that the factor that gives the most rapid results in reducing poverty and increasing the incomes of rural residents is a sharp increase in productivity and efficiency in agriculture. In this process, the priority was to increase the income per hectare of land from the current average of 2 thousand dollars to at least 5 thousand dollars, as well as the introduction of the most advanced technologies, water-saving and biotechnologies, seeds, science and innovation in agriculture, it was determined that it was necessary widely implement achievements in this area.

Experiment methods. When conducting field experiments based on methodological manuals “Methodology for state variety testing of agricultural crops” (Moscow, 1975), B.J. Azimov, B.B. Azimov on “Methodology for conducting experiments in vegetable growing, rice growing and potato growing” was carried out at the training site Information consultation center (Extension center) at the Tashkent State Agrarian University. [1; 2; 3; 4; 5; 6; 7.].

Experiment results. Leek (lat. *Allium po'rrum*) - Allium family (Alliaceae), a species belonging to the onion family (*Allium*). In the first year of life, the plant forms a powerful, well-developed root system; the roots are thread-like and have thick branches. Damaged parts are quickly restored during transplantation. In the first year of growing season, a white cylindrical false bulb is formed in the lower part of closely spaced leaves. On the outside, the onion-shaped plant is covered with a dry grayish-white scaly layer. Pencil leaf blade - lanceolate, sheath with a long beak, flat, wide (3-6 cm), green, like onions, fan-shaped (alternate), waxy layer, from 40-60 cm to 90 cm long. These long leaves tightly clustered together, forming a white pseudobulb 10-12 cm high and 2-8 cm in diameter at the base and a pale green pseudostem up to 80 cm high and 8 cm in diameter. Leeks bloom in the second year of growth, a flowering stem (axis) up to 2 m high is formed and seeds are formed. On the stem of the axis, covered on the outside with a shell, there is a large spherical umbrella-shaped inflorescence consisting of more than 800 flowers.

The flowers are small, very fragrant, from white and pink to purple. They have few seeds and take a very long time to ripen, around November. Pollinated by self-pollination. The pollination threads are longer than the flower frame, the inner ones are three-lobed, the middle ones are half as long as the base. Blooms in June-July. The fruits ripen in August-September. The seeds are triangular, wrinkled, and resemble onion seeds in appearance. Fertility lasts 2-4 years. Leeks are a frost-resistant crop. The plant overwinters under snow in the middle zone, when it is mulched and covered with peat or wood shavings. Prefers moisture-loving, loamy, high-humus soils. Heavy clay and light soils, as well as wet and acidic soils, are not suitable for planting leeks. It grows from a seed. The seedling method is used in the central and northern regions. In the southern regions, the seedless method is preferred (sowing seeds in open ground).

The healing properties of leeks have been known in the past. Recommended for patients with gout, rheumatism, scurvy, kidney stones, obesity, mental and physical exhaustion. Leeks have a rich chemical composition. Contains water 83-87%, total carbohydrates 7.3-11.2%, of which sugar 0.5%, starch 0.3%, fiber 1.5%, proteins 2-3%, fats 0.2%, organic acids - 0.1%, vitamins (mg%), carotene A - 0.03; thiamine B1 - 0.06-0.1; riboflavin B2 - 0.04-0.06; VZ-0.1; B6-0.003; B9 folacin - 0.03; ascorbic acid C - 35-80; E-1.5-3; N-0.14; RR of niacin - 0.5; carotene - 0.7%. It also contains minerals (mg/100 g): sodium - 50, potassium - 225, calcium - 87, magnesium - 10, phosphorus - 58, iron - 1.0-2.4, zinc, manganese, copper, silicon and others, along with the main macro-microelements, there are nickel, cobalt, chromium, vanadium, molybdenum, titanium, sulfur, chlorine, sulfur essential oils, phytoncides, enzymes. Leeks have a property that no other vegetable crop has: during storage, the amount of ascorbic acid in the white part increases by one and a half times. If fresh onions are stored in the refrigerator for a week before use, the increase in vitamin C content will increase.



Figure 1. Yield of leek.

The bulk of the nutrients begin to accumulate 3-4 months after harvesting the leeks. At the same time, its productivity is twice as high, and it can retain its purchased qualities for up to 6 months. Practically not damaged by diseases and pests. Leeks are used for diets and cardiovascular diseases, since they have antiseptic and bactericidal properties; they are used for inflammation, colds, to improve vision in eye diseases, and for the prevention of cancer.

Conclusions.

1. Leeks are cold-loving, frost-hardy $-9-10^{\circ}\text{C}$, biennial, self-pollinating, false stem-forming, and have identified characteristics.
2. Leeks are a food crop that is important for human health, as it is rich in various vitamins, macro- and microelements, despite the fact that today it is not widespread in our country.

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