



MORPHOBIOLOGICAL CHARACTERISTICS OF SUGAR BEET VARIETIES AND HYBRIDS

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Abstract

Sugar beet is the only agricultural crop in our country that provides raw materials in the production of sugar, which is a valuable food for the population. Another source of plant raw materials in the world for its production is sugarcane, which grows mainly in Latin America. In the United States, Cuba, India, and Brazil, sugarcane production was also considered the only source of sugarcane in the country, where sugarcane production was launched in Ukraine, Russia, France, Germany, the Baltic states, Kazakhstan, and Kyrgyzstan.

Keywords: Sugar lavender (*Beta vulgaris*), sugar levels, sugar beet crops. Chemical composition, active substances.

Introduction

Sugar beet (*Beta vulgaris* L.) is a two-pallet plant belonging to the Amaranthaceae family. When the above category consists of one-year and two-year-old species, cultivated sugar beet is a two-year type of plant. Beta genus is a member of the Chenopodiaceae family, and the group to be grown includes sugar beets. (*Beta vulgaris saccharifera*), fodder beet (*Beta vulgaris crassa*), leafy beets (*Beta vulgaris cicla*) and garden beets (*Beta vulgaris rubra*) (Ninfale and Angelino, 2013, Trifunovich et al. 2015).

Growing period: Sugar beets are a two-year plant (like all root vegetables). In the first year of life, from 50 to 90 pieces of leaf rosette and root crops with nutrients are formed. In the second year, root crops planted form leaves from axillar buds and flower buds that are scattered at a height of 120-150 cm.

In the first year, the vegetation period is 150-170 days (Siberia is 100-130 days), and the second year is 100-130 days. Due to the reserves of nutrients, the development of plants in the second year of life is faster, which at the same time occurs water and nutritional due to the great demands for regimes.

In the first year, it is customary to distinguish the stages of the development of sugar beets:

- climbing and cultivating seedlings or fork phase-cotyledons to the surface of the soil;
- 1-5 pairs of real leaves, the first pair of real leaves, are formed 8-10 days after the seed is sown;
- cover the leaves;



- open the leaves.

Germ: When the seeds of sugar beet grow, the root and sub-core knee begin to grow first. They crack the seedlings and go outside. Cotyledons remain inside the fetus for some time, through which nutrients stored in the seed continue to feed the young nipple. Then the cotyledons reach the surface of the soil, quickly gaining green color and begin to provide the plant with products of photosynthesis, which is especially important in the initial period of growth. Any damage to the cotyledon leaves will cause significant damage to the future harvest. After the formation of 6-8 true leaves, the cotyledons quickly dry out.

The cotyledon phase or "forks" last for 6-8 days. Then real leaves appear from the central bud.

Development of leaves: At the beginning of summer, each new leaf appears every 2-3 days, and in the middle of summer - 1-2 days. During the spawning period, the plant can produce up to 60-90 leaves. The total area of the leaf surface reaches 3000-5000 cm², which is 3-5 times more than the soil area occupied by the plant itself. The speed and strength of growth of the leaves depends on the supply of water and nutrients of plants, primarily nitrogen.

Depending on the development of plants, the emerging leaves differ in size, shape and life expectancy. Medium-sized leaves that appear in the summer from 10 to 25 are considered the most fruitful. They develop rapidly, last from 60 to 70 days. The life expectancy of the first leaves is 20-25 days. The active photosynthetic activity of the leaf is about 25 days.

In the first half of summer, the growth of leaves will continue faster than their death, so the mass of the tops will increase. The largest development of the leaves is recorded in the second half of July and August, then their mass begins to decrease rapidly. The percentage of leaves during harvest is 30-60% of the mass of root crops. The optimal area of the surface of the sugar beet leaf is 40-50 thousand m²/. The death of the leaves occurs faster with a lack of moisture.

Development of the root system and Ildizmeva: In the first days of plant development, the primary root develops gradually. But at the fork stage, its length reaches 15-20 cm, and on the plane of the cotyledons begin to grow with lateral branches, which have a dense network of root feathers.

When the first real leaves appear, hypocotil and the main root begin to thicken, reaching a length of 30 cm, in this regard, thinning in thickened crops should be completed before the start of the formation of the root crop.

The development of the root and root system is associated with the formation of the leaves: the faster and more the leaves are formed, the faster the root will grow.

Development of sugar beets: In the first year of the growing season, sugar beets are divided into three main periods:

1. the formation of the surface of the leaves and the root system, the period is about a month and a half;
2. growth of the leaves and root crop lasts no more than two months; at the same time, the daily increase in the root crop reaches 10 g;
3. Intensive collection of sugar lasts in the last month of the vegetation period, the daily mass of the root crop is 5 g, the sugar content increases by 0.07-0.1% per day.



The duration of each period is considered conditionally approximately 50 days.

In the second year of the growing season, the plants gradually form the root system, which penetrates into the soil at a depth of 1.5 m only until the seeds ripen.

Table. The process of developing sugar beets (Uzbekistan, Tashkent Qibray Forest Experimental Area.)

THE SANUS	ROOT MASS,G	MASS OF LEAVES, G	THE AMOUNT OF SUGAR IN THE ROOTS, %	NUMBER OF LIVING LEAVES	NUMBER OF DEAD LEAVES
July 1	79	186	11,2	33	2
July 15	171	304	12,8	40	4
1 August Kuni	242	282	15,5	45	9
15 August Kuni	314	281	16,6	46	10
September 1	355	297	18,8	48	15
September 15	402	254	19,2	49	16
October 1	445	240	19,6	56	18

Flowering:

In the first year of its life, sleeping buds are laid in the arms of leaves. Most of them are laid at high temperatures. Its decrease of 0-8 ° C leads to their development. Under natural conditions, this decrease should occur in the winter, then in the spring of the second year these buds form flower buds. However, this process can be observed in the first year of life of plants, as a result of which a phenomenon of flowering of sugar beets is observed.

If flower buds appear in the first year of planting, then flowery roots are obtained. Flowering is usually manifested by short vernalization, with very early planting, frostbite and long spring and long daylight lighting. Flowering leads to a decrease in the sugar content of root crops, partial lignification of tissues and a decrease in the mass of root crops. It is more difficult to process such root crops, and during their preservation, cagat rot develops. Early flowering is especially unwanted. The main method of preventing flowering is to plant in time and use resistant varieties.

In the cultivation of beets for seeds in the second year, it can be an inverse phenomenon in which plants do not bloom and do not give seed. Such plants are called "stubborn." The causes of this phenomenon are the insufficient physiological readiness for the subsequent development of root crops. This occurs as a result of an increase in temperature, early harvesting, autumn and spring drying of root crops in the uterus, an increase in storage temperature, shallow planting.

About fruit: Sugar beet fruit is nuts and has a thick double-decker pericarp consisting of loose lignified tissue. Fruits form glomerulus or beets (often called seeds), consisting of 2-6 fruits. The size of the glomerules depends on the number of fruits. When the fruit is ripe, the sepals become wooden and combine with a hard shell. At the top of the mature fruit is a relatively flat or slightly dark cover, under which the seed is located horizontally. Single-tumor glomerules have a single nut. The mass of 1,000 glomerula ranges from 15 to 50 g, and one seed is 20 g.



Single-growing beets have advantages, since the labor costs for thinning seedlings are significantly reduced, allowing for the complete mechanization of crop maintenance work.

Seed: The seed is covered with a brown bright shell. The embryo is almost ring-wrapped around the perisperm, where nutrients are stored. The embryo consists of two cotyledons, which include the kidneys, subfamily knee and hermental root. Glomerules of an angle-shaped and gray-yellow color are suitable for planting.

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