

APPLICATION OF WATER-SAVING IRRIGATION TECHNOLOGIES IN THE IRRIGATION OF FODDER BEETS GROWN AS THE MAIN CROP

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Abstract:

Fodder beet is among the food crops; mainly, this plant is grown from its roots. Fodder beet is of great importance in increasing the milk productivity of livestock. Fodder beetroot is a juicy, easy-to-digest, and nutritious food. Its nutritional value is rich in substances necessary for livestock: carbohydrates, non-nitrogen extractives, mineral salts, and vitamins, which help the livestock digest coarse hay well. 40–50% of the ration of dairy cattle on farms is made up of beets. Fodder beet is a biennial plant. When planted from seed in the first year, it gives root fruit, and when planted from root fruit in the second year, it gives seed. If agrotechnical measures are carried out correctly, by October, 1.5–2 tons of blue pulp can be obtained from 10 hectares.

Keywords: beet, carbohydrate, nitrogen, mineral, irrigation, vitamin.

Introduction. History of the Fodder Beet: According to Spanish scholars, Indians in the Santa Clara River valleys of California made sweets from the molasses of wild sugar beets. According to many scientific observations, its homeland is the Mediterranean Sea. It was used as a vegetable plant on irrigated lands 1500–2000 years ago. The root was used in the mountainous regions of Asia approximately 1000 years ago. It was brought to Central Asia, the Caucasus, Siberia, and other countries in the VIII–XII centuries. By the 18th and 19th centuries, beet roots were cultivated for fodder, sugar, and fodder.

Fruitful, Amarella bares, Uzbek Yarimkand, Uzbekistan-83, and Centaur varieties of beet in Uzbekistan are included in the state register.

Fodder beets are grown in many countries of the world, including Europe, Asia, America, Australia, New Zealand, and Africa. Great Britain, France, Belgium,



Germany, Denmark, and other countries with developed dairy and cattle breeding systems are common. The yield of root crops in these countries is 600–900 quintals per hectare.

Currently, 1.8 million beets are grown in the Commonwealth of Nations, covering an area of about one hectare. Root fruit yield is 204–215 centimeters. In Uzbekistan in 1999, the area planted with beets was 14.71 thousand hectares, the root crop yield was 198.9 centners, and in some advanced collective farms, the yield was 800-1000 centners per hectare and more. In the conditions of Uzbekistan, the seed yield is 15-20 centners.



Fig.1.2.1. The process of harvesting fodder beetroot

Biological characteristics of fodder beetroot: for two years, beetroot grows from seed; in the first year, it produces root and ball and develops for 210–220 days. In the second year, when these root fruits are replanted in the field, they grow and produce stems, flowers, and seeds. This period lasts 120–130 days. It requires a



useful temperature of 2500–3500 °C in the northern districts in the first year. Next year, 1800–2000 °C will be used for development.

According to their chemical composition, fodder beets belong to a food group rich in carbohydrates. According to zootechnical standards, 100 g of raw protein should contain 120–150 g of carbohydrates. But this ratio of protein and carbohydrates is disturbed in the spring and autumn. During this period, beetroot is very necessary.



Fig.1.2.2. The process of phenological observations in the field of fodder beet Planting fodder beets in soils with low groundwater, fertile, non-saline, high humus content, and good mechanical composition gives good results. Beet grows poorly in heavy, clayey, and light sandy soils.

In fodder beet rotation, autumn cereals, forage grasses, alfalfa, corn for silage, and grain are planted in fields free from other crops. In the cotton farm, after cotton, it is forbidden to plant beets in a row on the same field; it can be returned after 3–4 years because the crops may be infected with root rot disease and the yield may decrease by 30–40%.



The technology of cultivation of fodder beet: in the fall, the soil is plowed to a depth of 20–25 cm, the saline lands are washed with salt, and in the early spring, they are harrowed, chiseled, and troweled. It is sown in March and April. 7-8 kg of seeds are used per hectare; row depth is 60–70 cm; plant depth is 20 cm; planting depth is 3–4 cm.

Beetroot seeds germinate at 4-5°C. The temperature should not be lower than 10°C for sprouting. The above-ground part dies at 1-2°C. Fodder beet is water-demanding at the beginning of its growth and development. In Uzbekistan, it is grown only on irrigated lands. The growing season is 160–180 days. It grows well in sand and sandy soils. It does not grow well in swampy, salty, or stony soils. After turning green, the lawns are cultivated between the rows and made uniform; 70–75 thousand plants are left per hectare. During the growing season, it is cultivated 2-3 times between the rows, 1-2 times with additional feeding, and 3–4 times with watering. When the leaves turn yellow, the tubers are dug up, cleaned of leaves, and stored in specially designated areas.

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