



Technology of Growing Radish in the Southern Region

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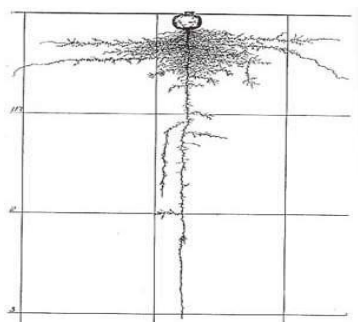
Annotation: This article describes the morphological features of radishes, their beneficial properties for the human body, the abundance of varieties suitable for cultivation and their cultivation at different times.

Keywords: Morphological features of radishes, planting schemes, varieties of radishes, sufficient temperature for the plant, growing dates.

Radish (*Raphanus sativus* L.) belongs to the cabbage family and is botanically and morphologically close to radish. The common radish originated in Asia or around the Mediterranean Sea and is grown all over the world. Radish is eaten fresh when added to salads. It contains 5-13% dry matter, including 0.8-1.0% sugar, 0.8-2.0% protein, 0.7-1.7% fiber, 0.7-0.1% ash. They contain a large amount of essential oil (1-5 g per 1 kg of dry matter), herbs (S-30-40 mg %). Radish fruits are low in calories and usually eaten raw; young leaves can be cooked like spinach. In some countries, radishes are eaten fried.

Root part of radish plant

The root of the plant has its own properties to increase productivity. Nutrients accumulate in the roots of some plants. The plant collects them for its growth. This is the reserve food necessary for his life. These nutrients accumulate in various organs of the plant and completely change their appearance.



For example, plants that accumulate nutrients in their roots - radishes, carrots, radishes, and turnips form root fruits. Radish has a poorly developed root system. This increases their demand for soil moisture. When there is not enough moisture, they are deformed and give root fruits that

are not very suitable for consumption. Carrots and beets are relatively drought-resistant plants. However, they give a high yield only when they are provided with sufficient moisture throughout the growing season. For them, the moisture content of the soil should be 70%.

Radish stem

The stem of the radish grows upright, the body is covered with hairs, and it is moderately branched. The height of the plant grows up to 70-100 centimeters. From the time the radish turns green to flowering, the stem grows faster. After flowering, stem growth slows down.

Radish leaf

The leaves of the radish are rounded oval, large, hairless, smooth. produces a bubble.



The appearance of radish leaves and fruits

Radish flower

The inflorescence of the radish is small. The flower is bisexual, with yellow petals four, the color is



often white-yellow. It is mainly pollinated from the outside. The flower is located on the main stem or side branches, with the formation of flowers, the accumulation of nutrients in the rhizome stops. Radish flower buds 60-100 cm. can reach

Radish fruit

The fruit of radish is a pod, in the form of a ball or cylinder that stands upright on the plant. Kozok fruit is a two-celled, multi-seeded fruit formed by the fusion of two fruit leaves. A dry fruit with seeds embedded in a pseudomembrane, double-opening and non-opening. The length of the fruit is different from the width. The length of the fruit is almost the same as the width.



Roots are mainly divided into three parts: head, middle part and root base.

The head is the upper part of the rhizome, which contains the growing points of the leaves and the place of the dead leaves. The middle part is the middle part of the rhizome. The rhizome is flat or round, white, red, purple in color. The rhizome of the round radish varieties is mainly formed from

the seed pod, below the elbow.

Radish seed

Radish seeds are inverted, egg-shaped and light brown in color. 100 seeds weigh 8-10 grams. Fertility is 85%, stored for 4-5 years. The most favorable temperature for seed germination and growth is on average 15-18 °C.

In the first year, the radish produces a rhizome, then it blooms and bears fruit. The period between the complete formation of the rhizome and the formation of the bulb is usually 10-20 days. During



this period, the structure and chemical composition of the root fruit changes dramatically. It loses its juice, becomes crusty, loses its taste; the content of sugar decreases, and the percentage of fiber increases. Reaction to temperature. Radish grows well even at low temperatures of 8-120 °C and withstands frosts of -3-4 oC. When the temperature is high (more than 25-30 o C), it loses its taste and quality and becomes woody. Reaction to light. Radish is a shade-tolerant plant that grows and develops even in the absence of light. It is a short-day plant. It is planted in fertilized fertile soils in early spring in late February-early March, often in several periods or in autumn in September.

Planting methods and periods



Radish grows even when there is a lack of light. When the seeds are sown and sprouts appear, the tubers of very early ripening varieties ripen in 25-30 days, mid-ripening varieties in 35-40 days, and mid-late varieties in 40-45 days. Radish is planted in the field in early spring (late February-March), often in several periods, or in autumn, in September. Radish seeds are sown in two to three rows with a vegetable seeder. In this case, 50-70 cm between rows, 8-10 cm between paths in the row, 14-18 kg per hectare in a 5x5 scheme. the seed is planted. After sowing the seeds, it is effective to mulch the fields with humus and biohumus. Radishes are harvested when they turn green and produce one or two leaves. In this case, tezpishar rhizomes of small radish varieties are every 3-4 cm, and evening primroses are 5-6 cm. is left at once. Depending on the type, 50-60 to 100-120 cents per hectare. yields up to Radish seeds are planted at a depth of 1.0-1.5 cm, the approximate feeding area of each plant should be 0.02 m². It should be noted that the depth of planting greatly affects the shape and size of this vegetable, so it should be done correctly.

Seed selection. The seed to be planted must be clean, highly fertile, disease-free, whole (not broken) and full. The seeds are cleaned from the seeds and impurities of other plants.

Varieties - 27 varieties included in the state register of agricultural crops recommended for planting in the territory of the Republic of Uzbekistan, including:

Lola. Early variety, growth period 25-30 days. The leaf is finely cut, flat, the number of leaves is 5-6, the length is 18-23 cm. The rhizome is flat-round, red, small, completely buried under the soil, the surface is flat, smooth, weight 20-25 g, tasting grade 5.0 points. Productivity is 20 t/ha.

Maisky. Medium variety, growing period 37-40 days. The leaf is oval, green in color, the number of leaves is 7-12, veins are medium, hairless. The rhizome is long, fully immersed in the soil, 7-9 cm long, 2.0-2.5 cm in diameter, 33-35 grams in weight, tasting grade 4.4 points. Productivity is 17–18 t/ha. Tends to become woody. **Morning.** Early variety, growing period 31-32 days. The leaf is lyre-shaped, divided into pairs of side lobes, green, shiny, the number of leaves is 10-12. The rhizome is flat-round, completely buried under the soil, white, small, flat surface, white peel, smooth, weight 20-32 g, tasting grade 5.0 points. Productivity is 20–21 t/ha.

Rudolf F1. A hybrid of the Dutch company "Beyo-Zaden". Agricultural crops recommended for planting in the territory of the Republic of Uzbekistan in 2008 were included in the State Register by republic. **Morning.** The leaves are finely cut, straight, 5-6 leaves, 18-23 cm long. The root fruit is round, red in color, the flesh is soft, thin, resistant to peeling quickly. Root fruit weight 25.0 g, total 5.0 points. The growth period is 28 days. Chemical analysis composition: Vitamin C 26.3 mg, %, nitrates 112.0 mg, kg, dry matter 5.8%. Some features: great product looks; intended for fresh consumption, it is recommended to plant on farms.

Sarah F1. Hybrid of the Dutch company "Nunems". Agricultural crops recommended for planting in the territory of the Republic of Uzbekistan in 2009 were included in the State Register by republic. **Morning.** The leaves are finely cut, straight, 5-6 leaves, 18-23 cm long. The root fruit is dark red, round, fleshy, thin, does not peel quickly. The product has a wonderful appearance and a characteristic of curling. Root fruit weight 30.0 g, total 5.0 points. Resistant to flowering.



Growth period is 30 days. Productivity was 23.5 tons. Chemical analysis composition: Vitamin C 31.6%, nitrates 120 mg, kg, dry matter 4.4%, sugar content 0.8%. Some signs: intended for fresh consumption, recommended for planting on farms. It is intended for planting in residential plots.

Celeste F1. A hybrid of the Dutch company "Enza-Zaden". Agricultural crops recommended for planting in the territory of the Republic of Uzbekistan in 2012 were included in the State Register by republic.

Morning. The leaves are finely cut, straight, 5-6 leaves, 18-23 cm long. The root fruit is dark red, round, the flesh is white, juicy, delicate, and does not peel quickly. The product has a wonderful appearance and a characteristic of curling. Root fruit weight 30 g, all 4.5 points. Resistant to flowering. The growing season is 40 days. Productivity is 24.5 tons per hectare with a high indicator. Chemical analysis composition: Vitamin C 25.9%, nitrates 100 mg, kg, dry matter 5.0%. Some signs: intended for fresh consumption, recommended for planting on farms.

Water demand. In the conditions of Uzbekistan, watering root crops is mandatory. In the absence of sufficient irrigation, productivity decreases and nutritional value deteriorates. When growing root crops, effective soil moisture should be 70-80% of field moisture capacity. Irrigation of radish crops at the right time and at a convenient rate and obtaining a high-quality harvest largely depends on the irrigation procedure, methods and techniques, as well as its effective use. Placement of plants in the field serves as an important factor in maximum use of solar energy, creation of optimal heat, water-air, nutrient regime. Because their leaves grow very strongly and produce roots and fruits. If there is

a lack of moisture in the soil, the rhizomes will remain small and the quality of the product will deteriorate, the amount of sugar will decrease, the buds will grow, the flesh will be small and rough, and it will become blistered. It is possible to increase productivity based on the specific water regime of the radish plant, that is, on the basis of optimal irrigation regime. The optimal water regime depends on the type and variety of the crop, as well as the external environmental conditions and the applied agrotechnics. Radish is recommended to be watered 5-6 times every 4-5 days during the vegetation period, the irrigation rate is 999-1585 m³ ha. When watering at such a rate, the radish crop is of high quality and ripens quickly, and the average weight of the tubers is also high.

Fertilization system. The fertilization system includes the use of organic and mineral fertilizers. The best land areas for growing radishes are soils rich in organic matter and alkaline pH = 6.4-7.9. Radish grows well in light, gray soils free from sand and weeds. High yields of radish cannot be obtained in heavy clay, swampy and salty lands. The rate and application of fertilizers varies depending on the type of soil, the form of fertilizer and the area of rotation. Radish is a crop demanding soil fertility and fertilizers. It takes one of the first places among vegetable crops in terms of nutrient consumption in the soil.

Radish in Uzbekistan is more effective when organic and mineral fertilizers are added together. This includes 20-30 tons of manure, 150-200 kg of potassium chloride, 230-250 kg. ammophos is applied before autumn plowing. In general, nitrogen 120–200 kg, phosphorus 140–150 kg, potassium 90–100 kg per hectare in gray soils, nitrogen 140–150 kg, phosphorus 140–150 kg, potassium 100 kg in meadow and marshy soils given on account.

Care. 1.5-2 cm in early spring and autumn-winter planting with anti-weed planting. the area is mulched with rotted manure, and the soil is loosened mechanically or with a light mesh harrow, and long-term irrigation is carried out to loosen the soil. Fertilization can cause serious damage to the growing plant, so it is carried out in areas where the crops are thick. The fight against weeds between the rows is carried out by cultivation. It is carried out 4-5 times or every other day after the plant has fully germinated and after each watering. Weeds can also be removed by hand. They are plucked after the plant has germinated and repeated 2-3 times. Weeding is a mandatory method in the care of root crops, which is usually carried out together with weeding. If the plant is not very dense, it is limited to one pruning after producing 3-4 true leaves. Radish is planted once, the distance between plants is 3-5 cm. is omitted from If the radish plant is not adequately watered, the yield will decrease and the nutritional value will deteriorate.

Harvesting and storage Radish harvest is picked 3-4 times depending on the maturity of the roots and fruits. Evening radish can be stored for a long time in autumn and winter without losing the quality of the product. Radish seeds are sown in September-October. For storage, it is harvested at the end of October and November. Radish leaves and roots are cut and sorted. Only large, healthy medium and large tubers are selected for storage. The product is transported to the vegetable warehouse and covered with sand. Radishes can also be stored in shallow trenches. Each row of roots is sprinkled with sand or medium moisture soil. Radishes can be buried in sand in boxes and stored at 1-2 °C. If the sand is dry, it is moistened a little by spraying water on it or from the side. In artificially cooled warehouses, the temperature of -2oC, relative humidity of 90-95%, leafy radish can be stored for only 5 days without losing its quality. This period can be extended to 15 days if the radish leaves are cut and placed in polythene-lined boxes and polythene bags.

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