

## BIOLOGICAL CHARACTERISTICS OF THE PLANT *PANICUM MILIACEUM*

**Maftuna Abdimuminova Alisher qizi**

Student of Termez State University

Mail:abdumuminovam@mail.ru

**Abstract:** Cereal crops, including millet, contain all the nutrients that are constantly necessary for human life, including protein, starch, vitamins, carbohydrates, oil, destrin, mineral salts, starch, carbon dioxide and other biologically active substances. A lot of work is being done to increase the area of grain crops and breed species that are adaptable to different environmental conditions in the current complex environment, which is full of economic problems. This article provides information on the biological properties of the millet plant.

**Key words:** millet, root, moisture, morphological, stem, variety, soil, temperature, grain, sprout, seed, grain, flower, tuber, leaf, fruit, vitamin

**Introduction:** *Panicum miliaceum* L is one of the most common grain crops in Uzbekistan. Cereal made from its grain is famous for its taste and richness. Bread made from millet is small in size and hardens quickly. Millet waste (from processing) is a good feed for cattle. The grain is fed whole or milled to poultry and pigs. Tariq's starch turns into sugar more quickly than that of rice. When millet groats are cooked in milk, its nutritional and biological properties increase. In Uzbekistan, millet is grown as a main and repeated crop. It is of great importance in growing two grain crops in one year. In particular, the low planting rate, quick ripening, and short-day plant increase its value. It can also be used in the repair of thinned grain fields. It gives a high yield in the dry, hot climate of Central Asia.

Among grain crops, it stands out for its tolerance to drought and heat. Resistant to diseases and pests.

**History.** Millet was cultivated 4-5 thousand years ago. The center of origin and formation is East and Central Asia. Archeological finds have proven that it has been cultivated in the territories of the current Uzbekistan and Kazakhstan since ancient times. In 2004, the cultivated area of millet in world agriculture was 33.8 million ha, the yield was 7.9 s/ha, and the total yield was 27.6 million tons. It is widely cultivated in China, Afghanistan, Turkey and Europe. It is also grown in the eastern states of the USA and in Africa. Millet occupies large areas in Russia, Ukraine and the North Caucasus. Millet yields 25-40 s/ha in irrigated lands and 7-15 s/ha in dryland. When grown in Angiz, the grain yield reaches 20-30 s/h. [1]



Botanical description. There are two distinct types of millet: common millet (*Panicum miliaceum* L.) and common millet (*Setaria italica* L.). A common millet ball is a tuber, a spike-shaped tuber in the host. The guest's Italian millet (*S. italica*) is divided into two subspecies: *S. italica maxima* Al - a tall, well-developed plant with a long growing season and *S. italica mocharium* Al. — is relatively low in height, the vegetation period is divided into short periods. In Italian millet or zona, the length of the furrows reaches 15-30 cm. It is widespread in Uzbekistan, Kazakhstan, and the Caucasus and is grown for grain and green mass. Mogor is mainly grown for grain, sometimes for hay or green fodder. The most common type is common millet. Common millet (*Panicum miliaceum* L.) is an annual crop.

It has 5 subtypes: scattered, scattered, narrow (bent), semi-com or oval and com. The weight of 1000 grains of millet is 5-10 g. Flower flakes make up 15-25% of grain. When the seed turns blue, it forms 1 root and the epicotyl is developed.[1] The height of the stem is 75-100 cm. Stems are formed from the node of formation, and branches form (branches) from the above-ground joints of the stem. It forms 5-20 stalks in one plant. Therefore, even when it is planted in wide rows, the number of stems per 1 m<sup>2</sup> does not decrease. The root system is a taproot, 105 cm deep into the soil, 115 cm around. The number of lateral roots reaches 120.[2] The level of development of the root system depends on the variety and the agrotechnics used. Secondary roots are formed from the joint of the plant. The increase in root mass mainly continues from budding to fruiting. When the surface layer of the soil dries out, joint roots are not formed, the plant develops poorly. Millet with only tuberous roots is semi-recumbent. Roots make up 20% of the total biomass during sprouting-shooting, 34% during shoot-shooting, and 30% during shoot-shooting. After fertilizing, the root development slows down, stops at the time of flowering. Aerial roots are formed from the lower joints of the stem. They increase the plant's resistance to drought and dormancy. The assimilation property of the millet root system is less than that of oats and barley. Therefore, it gives a high yield on newly developed lands.

**Biological properties.** Millet seeds germinate at 8-10 °C and absorb 25% of water by weight to swell. At 8 °C, seeds germinate in 10-15 days, at 15 °C in 4-5 days, at 20-25 °C in 3 days. When the soil temperature is 12-15 °C, the seeds will germinate after 5-7 days. The optimum temperature is 20-30 °C, at a very high temperature of 40 °C the seeds stop germinating. Grass is damaged at -2-3 °C, it dies at 3 °C. The total active temperature during the growth period is 1800-2100 °C. Millet is resistant to high temperatures, 38-40 °C keeps the activity of leaf stomata well. [3] In winter wheat, the cessation of activity of stomata is observed after 15-25 hours at 38-40 °C, and in oats after 4-5 hours. The ripening of the umgla in Rowagi begins from top to bottom, from the edge to the center. Therefore, when the seeds ripen at





the end of the pod, those in the middle are in the phase of wax ripening, and those at the bottom are in the stage of milk ripening. The vegetation period is from 60 to 115 days, depending on the varieties and growing conditions. Millet is a heat-loving plant. In cool and rainy weather, protein in grain reaches 11%, in drought years it reaches 17%.

**Moisture requirement.** One of the most important features of millet is its low demand for moisture compared to other crops, and its resistance to drought.

Its transpiration coefficient is 200-250.[3] Due to the good drainage system of millet, it is very resistant to heat and soil drought. Especially the curved and rounded dense forms are resistant to drought. This is the resistance of the crop to drought, its resistance to long-term wilting and dehydration of its tissues. In drought, unrooted grasses go into a state of death (anabiosis), but when it rains or is irrigated, they take root again and start growing rapidly. It is very drought tolerant from germination to budding. The most demanding (critical) period is from the tuber phase to fertilization. During this period, the more the plant is supplied with moisture and nutrients, the higher the productivity. It effectively uses the rains of the end of summer and the beginning of autumn. Light requirement is high, if it is planted with furrows from north to south, it increases the yield by 6-10%. Millet is not very demanding on the soil, but has an impact on productivity. The absorption capacity of the root system is higher than that of wheat, but less than that of oats. Millet can be planted in light loamy soils and heavy clay soils. 0 in Uzbekistan, it gives a good yield in the weed-free, organic matter-rich, grassland, and newly opened reserves and wastelands. Optimal soil environment is 6.5-7.5. The most demanding period for fertilizers is 30-45 days after germination (before fertilization). It is especially demanding on nitrogenous fertilizers.[4]

**Phases of development.** During the vegetation period of millet, the following phases are determined: 1) swelling of seeds, 2) germination, 3) formation of the third leaf. In this case, growth stops, secondary roots begin to develop, 4) budding begins 15-20 days after germination, 5) tuberization - begins 10-12 days after budding, 6) fruiting - 20 days after budding. -starts after 25 days, 7) flowering - starts 2-6 days after fruiting, 8) ripening lasts 15-20 days, growing season from 55 to 115 days.[5]

Common millet is divided into five subtypes: 1) scattered - the axis of the tuber is straight and long, the branches are strongly deviated from the axis, 2) scattered - the axis of the tuber is straight and long, the side branches are not much separated, 3) dense - the axis is long, bent, the side branches are attached to the central axis, 4) oval - the trunk is short, dense, the lower branches are separated, 5) comovate - the trunk is short, straight, dense, without pads. The type of millet sprinkled with manure has low resistance to drought and is not very heat-loving. The grain is relatively small, and the output of groats is low.



Dung millet is heat-loving, drought-resistant, strongly developed (large grain, high grain yield). Subspecies are divided into the following varieties depending on the separation of the grain from the husk, the color of the flower scales, and the presence or absence of anthocyanin pigment in the spikelets. boiinadi:itellinum, flavum, album, densum, etc. Millet is not suitable for chronic planting in one field. [5] This is because it grows slowly in the initial period of development and is therefore contaminated by weeds and is susceptible to fusarium, helminthosporosis, bacteriosis, black rot. it is affected by diseases. It is not recommended to plant millet after corn. The reason is that both crops are heavily damaged by the corn butterfly. Millet gives high yields on newly developed gray and protected lands. Tillage for millet is a regional farming system. The main focus is to eliminate weeds as much as possible, maintain moisture in the soil, level the ground well focused on ash, softening. Millet fields are plowed in autumn. The earlier the fall plowing is done, the greater the yield.

In the conditions of Uzbekistan, the soil is plowed to a depth of 28-30 cm.[5] Usually, if the field is contaminated with weeds, it is worked with cultivators or discs before plowing. If rhizome weeds appear, disking can be repeated. Magnesium, iron, boron, manganese, zinc, molybdenum, and copper are important micronutrients in millet nutrition. They accelerate the activity of enzymes, biochemical processes in the plant, strengthen the synthesis of proteins, carbohydrates, amino acids, and vitamins. Millet is very sensitive to organic and mineral fertilizers. In order to increase the effectiveness of organic and mineral fertilizers, the agrochemical and phytosanitary status of the fields is checked, and appropriate passports are drawn up. When 20 t of rotted manure is applied per hectare, 10 s of additional grain yield was obtained. Millet increases yield dramatically when nitrophoska is applied. The main part of the annual norm of phosphorus and potash fertilizers is given in the fall before plowing the land. The main part of nitrogenous fertilizers is given by cultivation before planting, 15-20 kg/ha in the fields planted in wide rows with the first treatment between the rows. Foliar feeding of millet with nitrogen during grain filling (5-10 kg/ha) increases the protein content of grain.[6]

### **Conclusion**

Cereal crops are of great economic and production importance in the national economy of the Republic of Uzbekistan. Cereal crops play an important role in meeting the food needs of the population, providing livestock with concentrate and coarse fodder, and raw materials for some industries. Increasing grain production is one of the main problems in agriculture, in particular, increasing the production of millet and similar grains, meeting the demand for grain of the country's population, the national economy, and increasing the grain yield of the republic. is important in the network.





**References:**

1. Atabayeva H., O. KadirKhojayev. Plant science. Tashkent., "New century generation", 2006.
2. Atabayeva H. and others. Plant science. Tashkent., "Labor", 2000
3. Oripov R.O., Khalilov N.Kh. Plant science. Tashkent., "National Society of Philosophers of Uzbekistan", 2007.
4. Mustafayev S.M. Botany (anatomy, morphology, systematics). Tashkent. "Uzbekistan", 2002
5. Hamidov A., Nabiyeu M., Odilov T. Plant identifier of Uzbekistan. Tashkent., "Teacher", 1987.
6. Murtozayev M.Z., Kushakov A.A, Akhmedova G.M. Plant science. Tashkent. "Science and Technology", 2012.
7. Yakubjonov O., Tursunov S. Plant science. Tashkent., "Science and Development", 2008.
8. Khojayev J. Kh. Physiology of plants. Tashkent, "Labor". 2004.

