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ECOPHYSIOLOGICAL PROPERTIES OF WHITE OATS

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Oats are the most arid plant and its transpiration coefficient is 200. It can withstand extreme heat, dry soil and air, and grows well. In hot weather, the process of assimilation goes on in its leaves, while the leaves of corn lose their turgor and twist. Oats also produce good yields when irrigated without irrigation in the most remote areas of the steppe. Oats also use rainwater in the second half of summer and fall. In general, oats are a heat-loving plant, the seeds germinate at a temperature of 10-12 °C. The grass dies in the short-term frost. The maximum temperature for flowering is 14-15, for ripening 10-12, and the sum of useful temperatures during the growing season is 2250-2500 [1].

Oats are less demanding on soil, so they grow well in saline soils. However, warm, soft, water and air permeable soils are very suitable for it. Like all millet plants, oats grow slowly and they are resistant to field fires.

Medium-ripening varieties germinate 10-15 days after planting, enter the accumulation phase after 25-30 days. After 40-45 days of mowing, the reed is wrapped, and after 55-65 days, the stalk is removed. It blooms 5-6 days after emergence. The vegetation period lasts 90-145 days, depending on the maturity of the varieties.

In world agriculture, oats have been considered one of the most valuable grain and fodder crops extremely resistant to drought. The opinion of most scientists is the same. Many years of experience confirm that the biological properties of this crop, that is, it is less demanding to environmental conditions. The practice of growing sorghum in arid and poorly watered areas shows that this crop is active against dry arrival of soil and air, normal transpiration process and light tolerance to hot garemsel at high concentrations of cell sap [2].

To form a unit of dry matter, corn consumes less water than corn, cotton, sunflower, or oats, and can thus give a high blue mass and grain yield. For example, in the Kherson agricultural station experiment, it was found that maize used 160.6 units of dry matter, maize 132.3, and millet 127 units of water. At the same time, it was observed that corn tolerates hot weather more than other crops.

The transpiration coefficient of oats is 150-200, which is much lower than that of other cereals. Corn saves moisture. It takes 132 grams to produce 1 gram of dry matter, 161 grams of corn, 273 grams of white oats and 377 grams of sunflower[3].

Observations made in recent years have been associated with the drought tolerance of sorghum and its productivity, indicating that the plant has valuable biological and economic properties. For example, scientists have confirmed that corn is superior to even corn in terms of grain and silage yield in years when the weather is dry. Adaptation of sorghum to conditions in water-scarce areas is due to the well-developed root system of the plant, the surface of the leaves and stems are covered with wax dust, as well as the special structure of the openings in the leaf apparatus (which saves water). The deep penetration of sorghum root into the ground and other symptoms are the result of historically unfavorable environmental conditions. In arid regions, white oats yield at least 48 quintals of grain per hectare and 300-350 quintals of green mass and up to 120 quintals of hay [4].

Even when the moisture reserves in the soil, which have been dry for years, fall to a critical level, white oats can withstand such conditions and produce higher yields than maize.

It can also withstand longer drought conditions than maize, and then recovers, continues to grow and develop normally, and reaps a bountiful harvest. For example, experience confirms that the yield of sorghum KOC-1 surpasses that of the hybrid of corn, which gives the highest grain yield. The study of drought tolerance of maize is of great practical importance. It is especially important for farms located in arid zones. Water has always been scarce in these types of zones, and the corn crop has served as a major reserve in the cultivation of fodder for livestock. In order to get a rich and high-quality harvest from any crop, it is necessary to create the necessary conditions for this crop. One of the factors providing such conditions is irrigation. As mentioned above, corn is extremely resistant to drought. But in order to get a high grain and silage mass, it must be watered in a timely manner [5].

In order to get the desired amount of grain, silage and greens from them, it is necessary to know the soil and climatic conditions of the district, water resources that occur in different seasons of the year, which in turn allows to grow abundant crops with minimal water consumption. In order for plants to use water sparingly, it is necessary to organize their nutrition. According to K.A.Timiryazev, in order to reduce the water wasted by the plant, people should first pay special attention to the use of fertilizers. To do this, it is necessary to constantly improve agro-technical measures [6].

The development of high agronomic practices in irrigated agricultural areas is based on knowledge of the biological characteristics of each plant grown, soil climatic conditions, as well as the water supply of the area, the water permeability of the irrigation system. Irrigation regime (norms, terms, etc.) is developed taking into account the requirements of the crop, the order of irrigation, the characteristics of the hydromodule area. This, of course, implies the rational use of irrigation water.

According to scientific achievements and best practices, on average, only 50-60 m^3 of every 100 m^3 of water taken from the main canal in Uzbekistan is effectively used in the fields. The rest perishes as a result of evaporation and infiltration into the lower layers of the soil. Accordingly, water scarcity remains an important issue at a time when water shortages are becoming increasingly apparent. In most farms, it is taken for secondary crops at the expense of irrigation norms. For some reason, white corn is not irrigated to satisfy the crop. This has a negative impact on productivity.

Experiments over many years have shown that oats are a drought-resistant crop by nature, and even with a single supply of jasmine water, up to 400 quintals of silage per hectare can be produced. Therefore, where it is possible to create such conditions, it is recommended to include maize in the planting plan, among other crops, in areas that are unsuitable for growing cotton in the first place and then unsuitable for crops, ie often damaged by dry garmsel or soil salinity. , as well as spring lands in the foothills and mountainous areas can be allocated for the cultivation of poplar.

According to the perennial data collected by scientists in this field, if the salt resistance is the highest at 0.030-0.035% in terms of chlorine ion, depending on the dry state of the soil, this amount in oats is 0.038%. Some scientists estimate that the corn crop can withstand 0.6 to 0.8 percent soil salinity, unlike other crops. In maize, the figure is only 0.4 percent. Corn removes sodium, calcium, magnesium from the soil with its harvest, thereby purifying the salinity of the soil. In other words, while corn can reduce soil salinity by 0.6-0.8 percent, corn can only reduce soil salinity by 0.4 percent. Corn also plays the role of phytomeliorator by removing harmful salts from the soil [7-9].

Scientists have irrigated the crop with highly mineralized water collected from wastewater. The soil was saline (0.4 to 1.35 percent relative to the dry mass of the soil). It was found that in saline soils, the soil moisture in the layer where the root system of the plant is located should not be less than 80% of the total field moisture capacity during the entire growing season, otherwise re-salinization of the soil will be observed. In the experiment, high yields were obtained when corn was harvested during the ripening period.

Lands unsuitable for other crops can be used for planting corn. In these types of soils, the blue mass yield of corn is reduced. White oats, on the other hand, are relatively abundant due to their resistance to soil salinity and good tolerance to groundwater near the surface.

The permissible level of soil salinity for cotton is 0.02-0.03% in the 0-100 cm layer of soil in the lower reaches of the Amudarya in terms of chloride ion, while in other regions with saline soils this amount should be 0.01% relative to the dry mass of the soil. In experiments conducted in Uzbekistan, the corn crop can withstand even more salinity [10-12].

So, based on the above, it can be recommended to plant white oats in areas of our region where soil drought and soil salinity are high. By planting this plant, the level of soil salinity is reduced by the method of phytomelioration. There will also be an opportunity to get grain, blue mass and hay.

At the same time, there is an opportunity to reduce soil salinity by growing maize in the saline lands of our region, the maize is the main phytomeliorator plant. During the study, recommendations were made for the production of corn based on its phytomeliorative properties.

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