

Основни изисквания на ръжта към торенето

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The history of rye dates back centuries. According to FAOSTAT data, the average rye yield for 2022 worldwide is 3272.3 kg/ha, and the quantity produced is 13,143,054.91 t.

With its wide applicability, rye has become an integral part of human life. The present article examines the main requirements of rye with regard to fertilization and briefly describes the essence of this valuable crop.

Rye (*Secale cereale* L., 1753) is one of the most important cereal crops. It is a widely distributed agricultural plant, grown as a grain, forage and cover crop. It is known that it was first mentioned as a cultivated plant by Pliny (1st century BC).

Rye has an exceptionally wide range of uses. The grain is used for the preparation of bread, which is characteristically darker, aromatic and dietary. According to researchers, the grains contain essential amino

acids and vitamins of groups A, B and E. Rye straw is used for the production of cellulose, as bedding for farm animals, etc. Some varieties registered in our country are *Picasso*, *Bul Millennium*, *Elect*.

Rye is comparatively less demanding with respect to soil reaction (pH) and develops well on acidic soils (pH < 7). It has been established that its root system has the capacity to absorb the more sparingly soluble phosphates from fertilizers and soil. Early spring top-dressing with nitrogen fertilizers is extremely important for this crop.

Rye absorbs the largest amounts of nitrogen, phosphorus and potassium during the tillering and stem elongation stages. Prof. D.Sc. Stefan Gorbanov et al. (2005) mention that, according to data obtained from field fertilization trials, by the end of tillering about 1/3 of the nitrogen and 1/4 of the phosphorus and potassium are taken up, while the remaining quantities are taken up mainly by the end of heading.

Nitrogen fertilizers must be applied with caution, given the fact that high nitrogen fertilization leads to lodging of the crops. Phosphorus fertilizers are not applied when available phosphorus in the soil exceeds 20 mg, and potassium fertilizers – when available potassium exceeds 30-35 mg. According to Andres (2015), appropriate phosphorus, potassium and magnesium fertilization before sowing enhances initial development, stabilizes the stem and protects the crop from winterkill. When soils are suitable, the application of micronutrient fertilizers is not necessary.

For the formation of 100 kg of grain and, of course, the corresponding amount of above-ground biomass, rye extracts from the soil between 2.5 and 3 kg of nitrogen, about 1.4-1.5 kg of phosphorus and 2.5-3 kg of potassium.

In conclusion, I would like to emphasize that rye is an important valuable plant from the family *Poaceae* (Grasses). With proper fertilization and the provision of good conditions, rye has the potential to become an extremely high-yielding crop in every farm.

References:

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