

**Use of modern fungicides against rust diseases of wheat**

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***Abstract:*** *To meet the demand of the population for flour and flour products, obtaining a high and quality harvest from the wheat plant is one of the urgent problems of today. Information about wheat diseases encountered in the cultivation of wheat plants and agotechnologies of their cultivation is given. Also, the use of modern fungicides against rust diseases of wheat was studied.*

***Key words:*** *Wheat, soft wheat, durum wheat, winter and spring wheat, treatment, epidermis, urocytis tritici, fertilizers, diseases of puccinia striiformis.*

Wheat (Latin: Triticum) is a group of herbaceous plants belonging to the cereal family; the tallest and the main cereal crop grown in most countries of the world today. There are about 30 wild and cultured species, which differ according to the number of chromosomes in their somatic cells, which belong to 3 types (diploid, tetraploid, hexaploid). In world agriculture, mainly soft wheat or common wheat (*T. aestivum*, *T. vulgare*) and durum wheat (*T. durum*) are cultivated. The rest of the species are rarely planted or not at all. Transcaucasia is the homeland of many types of wheat (Ararat, Makha, Timofeev wheat, Urartu, Persian wheat, etc.). Wheat was known in the countries of Old and Central Asia in 7-6 thousand years BC. Since the 17th century Shim. It began to be cultivated in America. Wheat is located on the globe at 66° N (Sweden), and in Russia at 76\*44' (Murmansk region) in experimental areas; Gen. in Australia, South America, Africa. planted to the limits. There are 250 million wheat cultivated areas in the world. about 1 hectare, and about 30% of the cultivated grain corresponds to wheat (more than 360 million tons on average). The main grain producing countries are Russia, Kazakhstan, China, USA, India, Canada. Since the beginning of the 1990s, in order to ensure the grain independence of the republic, the wheat cultivation areas have been expanded (1.2 million ha; 1999).

Botanical description The root system of wheat is a tap root, the main part of which develops in the arable layer of the earth, and some roots penetrate up to 180 cm deep. The stem is a stem divided into thick joints, 40-130 cm tall. Wheat dormancy and yield depend on stem height. A leaf consists of a leaf sheath and a ribbon-shaped leaf blade that surrounds the stem like a flute. A spike of many-flowered spikes with a ball. External pollination is rare in wheat, self-pollination is more common. The fruit is a grain. The grain is naked (with a veil in polba wheat), oval, ovoid, elongated or spherical in shape, with longitudinal ridges on the ventral side, white or reddish-brown in color. Depending on the size, it is divided into soft (urvokdi) or hard (shiny, crusty) wheat. The weight of 1000 grains is 20-70 g. Soft wheat ear with and without ear, the ear is shorter than the ear; the grain is white or reddish, the cross-section is round, and the inside is mostly flour-shaped. The ear of durum wheat is dense, mostly spiked, and spikes grow longer and straighter than the ear.<sup>1</sup>

Rust disease, plant rust disease is a disease caused by fungi in plants. 3. Cereal crops with diseases, alfalfa, rust disease: 1 - wheat rust disease; 2—raspberry rust disease; 3-pear rust infects beets, flax, peas, sunflowers, almonds, apples, and pears. Yellow, then brown spore bumps appear on the leaf, stem, and partially the fruit of an infected plant, the plant does not develop well, sometimes the leaves dry up, and grain crops do not have ears. Spring, summer and winter spores of rust fungi spend their development cycle on two different plants. For example, the stripe rust fungus (the causative agent of which is *Puccinia graminis*) found in wheat, oat, and rye overwinters in the stubble of grain crops, and in the spring it enters the field, and then infects grain crops again. Rust fungi on apples and pears overwinter on fir trees, and in spring its spores are transferred to fruit trees. Control measures: crop rotation is introduced, disease-resistant varieties are planted, juniper and juniper are not grown around the field, crops are dusted with sulfur during the onset of the disease (see also Fungal diseases).[ Oripov R.,

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<sup>1</sup> Tursunov.S., M uqim ov Z. Donchilik. T., 2009-yil.

Halilov N. Plant science. T., 2007.] Diseases and pests of wheat. Wheat crops are affected by a number of fungal diseases and wheat pests. A part of the crop dies due to diseases and pests in wheat. At present, agrotechnical, biological, chemical organizational management and quarantine methods are used to combat wheat diseases and pests. One of the effective methods of combating diseases and pests is the agrotechnical method, which includes the correct implementation of crop rotation, soil cultivation based on high requirements, selection of varieties resistant to pests and diseases, treatment of seeds before planting, planting at optimal times, and proper care of the crop during the growing season. consists of In addition, careful application of the chemical method is also an important measure in the prevention of diseases and pests. Root rot, powdery mildew, rust, black moth diseases, ear fusariosis, septariosis and other diseases are found in the wheat crop. Yellow rust is widespread in countries with humid climates. It is less common in desert regions of Central Asian countries. *Puccinia striiformis* West is one of the few fungi that cause yellow rust. There are more than 60 races (races) of this fungus, adapted to different varieties of wheat and barley. Yellow rust damages the leaf sheath, leaf, stem, spike axils, and spike axils. On the affected parts of the plant, yellow, lemon-colored pustules are formed. They are filled with uredospores of the fungus. Fungal pustules are 9-10 cm between the leaf nerves on the upper and lower side of the plant leaf. located in the form of a yellow line in length. <sup>2</sup>

Rust fungus uredospores are single-celled, pale yellow, spherical or slightly elongated, surrounded by a colorless dentate shell. In the case of uredospores, it overwinters in plant debris and damages plants through uredospores. Compared to other types of fungi, the yellow rust fungus is resistant to low temperatures, and its uredospores begin to grow at 0°C. Optimum air temperature for growth of uredospores and damage to plants is 8-15°C. If winter wheat is planted thickly in early periods, it can be infected with yellow rust from

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<sup>2</sup> Oripov R., Halilov N. O'simlikshunoslik. T., 2007-yil.

autumn. In short, control measures - correct application of agrotechnical measures, good tillage of the soil, planting at the optimal time and standards and at the optimal depth, feeding wheat with organic mineral substances based on soil analysis, reduce the level of damage to wheat plants by hard blackworm. Treat with recommended chemical agents against powdery mildew before sowing.

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