BUG‘DOYNING QORA KUYA VA ZANG KASALLIKLARI.

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Annotatsiya: Ushbu maqolada bug‘doy o‘simligida uchraydigan asosiy kasalliklardan biri bo‘lgan qora kuya va zang kasalliklari haqida ma’lumot berilgan. Kasalliklarning kelib chiqish sabablari, qo‘zg‘atuvchilari, tarqalish yo‘llari hamda o‘simlikka yetkazadigan zarari yoritib berilgan. Shuningdek, ushbu kasalliklarning belgilari, hosilga ta’siri va ularga qarshi kurash choralari haqida ham ilmiy ma’lumotlar keltirilgan. Qora kuya va zang kasalliklari bug‘doy hosildorligini kamaytiruvchi eng xavfli kasalliklardan biri bo‘lib, ularning oldini olish uchun agrotexnik va kimyoviy kurash usullarini qo‘llash muhim ahamiyatga ega.

Kalit so‘zlar: Bug‘doy, qora kuya kasalligi, zang kasalligi, zamburug‘ kasalliklari, o‘simlik patologiyasi, hosildorlik, qo'zg'atuvchi, agrotexnik kurash, fungitsidlar, kasallik belgilari.

Abstract: This article provides information about two of the main diseases found in wheat plants — smut and rust diseases. The causes of these diseases, their pathogens, ways of spread, and the damage they cause to plants are described. In addition, scientific information about the symptoms of these diseases, their impact on yield, and methods of control are presented. Smut and rust diseases are among the most dangerous diseases that reduce wheat productivity, and the use of agrotechnical and chemical control methods is important to prevent them.

Keywords: Wheat, smut disease, rust disease, fungal diseases, plant pathology, yield, pathogen, agrotechnical control, fungicides, disease symptoms.

Аннотация: В данной статье представлена информация об одних из основных заболеваний пшеницы — головне и ржавчине. Рассмотрены причины возникновения этих заболеваний, их возбудители, пути распространения и вред, наносимый растениям. Также приведены научные сведения о признаках заболеваний, их влиянии на урожайность и мерах борьбы с ними. Головня и ржавчина являются одними из самых опасных болезней, снижающих урожайность пшеницы, поэтому для их предотвращения важно применять агротехнические и химические методы борьбы.

Ключевые слова: Пшеница, головня, ржавчина, грибковые заболевания, фитопатология, урожайность, возбудитель, агротехническая борьба, фунгициды, признаки болезни.

Wheat is one of the most important agricultural crops in the world. It serves as a primary source of food for humans, and many products such as flour, bread, and others are made from it. Since wheat contains a high amount of protein, carbohydrates, vitamins, and minerals, it holds a significant place in the food industry.

However, during wheat cultivation, various diseases cause serious damage to crop yield. Among these diseases are smut and rust diseases. These are mainly caused by fungi and affect different parts of the wheat plant. As a result, both the quantity and quality of the harvest decrease. Therefore, studying these diseases and developing control measures is of great importance in agriculture.

Wheat is a major grain crop grown in many countries around the world. It provides a large portion of human nutrition. Products made from wheat, such as bread, pasta, and cereals, are widely consumed daily.

Wheat contains about 10–20% protein, a large amount of carbohydrates, and B-group vitamins. Therefore, it is an important source of nutrition for the human body.

During wheat cultivation, diseases, pests, and unfavorable climatic conditions can reduce productivity. Fungal diseases are especially dangerous for wheat crops. Among them, smut and rust diseases are the most widespread.

Smut Disease of Wheat: Smut is one of the most harmful diseases of wheat. It is mainly caused by fungi belonging to the *Tilletia* genus. The disease primarily affects the spike and grain. Symptoms become clearly visible during the ripening stage of wheat spikes. In infected spikes, instead of normal grains, a black powdery mass forms. This mass consists of fungal spores. When such grains are crushed, black powder emerges along with an unpleasant odor. Smut disease mainly spreads through infected seeds. If contaminated seeds are sown, the fungal spores infect the growing plant. Moist and cool weather conditions favor the development of the disease.

This disease causes significant damage to wheat yield. Infected spikes fail to develop normal grains, resulting in reduced yield and poor grain quality. In severe cases, a large portion of the harvest becomes unusable.

Rust Diseases of Wheat: Another common group of diseases in wheat is rust diseases. These are caused by fungi belonging to the *Puccinia* genus. There are mainly three types of rust diseases in wheat:

- Yellow rust
- Leaf rust
- Stem rust

Rust diseases affect wheat leaves, stems, and sometimes spikes. In the early stages, yellow or brown small spots appear on the leaves. Later, rust-like powdery spores develop in these areas.

Rust spreads rapidly through the wind. Spores can travel long distances and infect other plants. High humidity and moderate temperatures create favorable conditions for disease development. As a result of rust infection, the photosynthesis process in plants is

disrupted. Leaves dry out, plants weaken, and grains in the spikes become small. Consequently, yield decreases significantly.

Control Measures Against Diseases: Several agrotechnical and chemical methods are used to control wheat diseases. First of all, it is essential to use healthy and high-quality seeds for planting. Treating seeds with special fungicide preparations before sowing is important in preventing smut disease.

To control rust diseases, it is recommended to plant resistant wheat varieties. In addition, removing weeds, following crop rotation systems, and performing agricultural practices on time help reduce disease spread. If the disease spreads severely, spraying plants with fungicides is also applied. This method helps stop fungal development and preserve the yield.

Smut and rust diseases of wheat are among the most economically damaging diseases in agriculture. They are mainly caused by fungi and affect leaves, stems, and spikes, leading to reduced yield and poor grain quality. Preventive measures include using healthy seeds, seed treatment, planting resistant varieties, and proper agricultural practices. In necessary cases, chemical protection methods should also be applied. Timely control of these diseases helps ensure high and quality yields.

Conclusion:

Smut and rust diseases of wheat are among the most common and economically damaging diseases in cereal crops. These diseases are mainly caused by fungi and slow down plant growth and development, reducing both the quantity and quality of grain yield. In particular, smut disease damages the internal structure of grains and worsens their food quality, while rust disease causes rust-colored spots on leaves and stems, reducing photosynthesis.

The spread of these diseases is often associated with climatic conditions, high humidity, improper crop management, and the use of infected seeds. Rust disease develops rapidly in cool and humid conditions, while smut spreads mainly through infected seeds. Therefore, treating seeds with special preparations before planting is crucial for disease prevention.

To protect wheat crops from these diseases, it is necessary to apply a combination of agrotechnical, biological, and chemical control methods. These include using certified healthy seeds, practicing crop rotation, removing weeds, eliminating plant residues, and selecting disease-resistant varieties. Additionally, applying fungicides when necessary helps reduce disease development.

In conclusion, effective control of smut and rust diseases requires timely implementation of scientifically based agricultural practices, the use of modern protection methods, and cultivation of resistant varieties. This will help increase wheat productivity, improve grain quality, and ensure the sustainability of agricultural production.

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