

Pathogenic fungi and their impact on human health and animals.

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Abstract

Phytopathogenic fungi decrease crop yield and quality and cause huge losses in agricultural production. To prevent the occurrence of crop diseases and insect pests, farmers have to use many synthetic chemical pesticides. The extensive use of these pesticides has resulted in a series of environmental and ecological problems, such as the increase in resistant weed populations, soil compaction, and water pollution, which seriously affect the sustainable development of agriculture. This review discusses the main advances in research on plant-pathogenic fungi in terms of their pathogenic factors such as cell wall-degrading enzymes, toxins, growth regulators, effector proteins, and fungal viruses, as well as their application as biocontrol agents for plant pests, diseases, and weeds. Finally, further studies on plant-pathogenic fungal resources with better biocontrol effects can help find new beneficial microbial resources that can control diseases.

Keywords: Phytopathogenic fungus, Toxin, Abiotic stress, Biological control, Application prospect.

Introduction

Fungi are a diverse group of organisms that play essential roles in various ecological and industrial processes. They are found in different habitats, including soil, water, and plants. While many fungi are beneficial, some can cause infections in humans, animals, and plants. These fungi are referred to as pathogenic fungi. Pathogenic fungi are responsible for a wide range of diseases that affect humans and animals. These diseases can be mild or severe, depending on the type of fungus and the susceptibility of the host. In this article, we will explore the different types of pathogenic fungi, the diseases they cause, and their modes of transmission [1].

Types of pathogenic fungi

There are several types of pathogenic fungi that can cause infections in humans and animals. These include:

Candida

Candida is a type of yeast that is found naturally in the human body. However, when the balance of microorganisms in the body is disrupted, candida can overgrow and cause infections. Candida infections can occur in the mouth, throat, genitals, and bloodstream. Symptoms may include white patches in the mouth or throat, vaginal itching and discharge, and fever. Treatment for candida infections typically involves antifungal medications [2].

Aspergillus

Aspergillus is a type of mold that is found in soil and decaying vegetation. It can cause a range of illnesses, from mild allergic reactions to serious systemic infections. Aspergillus

infections are most common in people with weakened immune systems, such as those with HIV or undergoing chemotherapy. Symptoms may include fever, cough, and chest pain. Treatment for aspergillus infections typically involves antifungal medications.

Cryptococcus

Cryptococcus is a type of yeast that is found in soil and bird droppings. It can cause a serious infection called cryptococcal meningitis, which affects the membranes that cover the brain and spinal cord. Cryptococcus infections are most common in people with weakened immune systems, such as those with HIV or undergoing chemotherapy. Symptoms may include headache, fever, and stiff neck. Treatment for cryptococcal meningitis typically involves antifungal medications [3].

Histoplasma

Histoplasma is a type of fungus that is found in soil and bird droppings. It can cause a lung infection called histoplasmosis, which is most common in people who live in areas where the fungus is endemic, such as the Mississippi and Ohio River valleys. Histoplasmosis can range from mild to severe and can affect other organs in the body, such as the liver and spleen. Symptoms may include fever, cough, and fatigue. Treatment for histoplasmosis typically involves antifungal medications.

Trichophyton

Trichophyton is a genus of fungi that can cause infections in humans and animals. Trichophytosis is the name given to the infections caused by these fungi. Trichophytosis can affect different parts of the body, including the skin, hair, and nails [4].

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Treatment

Treatment for pathogenic fungal infections depends on the type and severity of the infection. Superficial infections may be treated with topical antifungal creams or oral medications, while systemic infections may require intravenous antifungal therapy. Antifungal medications work by either killing the fungi or preventing them from growing and reproducing.

Prevention

Preventing fungal infections involves practicing good hygiene, avoiding sharing personal items such as towels and razors, wearing protective clothing and footwear, and avoiding exposure to contaminated soil or other environmental sources of fungal spores. Additionally, individuals with weakened immune systems should take extra precautions to avoid exposure to pathogenic fungi [5].

Conclusion

Pathogenic fungi are a group of organisms that can cause a wide range of diseases in plants, animals, and humans. These fungi can be challenging to diagnose and treat, and prevention is key to avoiding infections. If you suspect you may have a fungal infection, it is essential to seek medical attention promptly.

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