

# IMMUNITY IS THE MAIN CRITERION FOR PROTECTING PLANTS FROM DISEASES

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**Abstract.** *In the given article immunity is presented as a criterion for a coherent and comprehensive plant defense system against diseases.*

**Keywords:** *disease, fusarium, cotton, root rot, black moth, complex, crop, variety, mushroom.*

At present time more than 1,500 crop diseases and more than 80,000 fungal species of these diseases are known. It is usually caused by potato late blight, corn rot, root rot and fusarium blight of sunflower and bacterial homomosis of cotton. The spread and damage caused by some diseases increases every year. The fungi that cause Fusarium root rot and Fusarium wilt affect a number of cultivated plants, which are considered as agricultural crops.

It is important to suggest that the most convenient way to protect plants from diseases is a chemical treatment. However, in the modern era, this chemical method shows its shortcomings and defects while growing organically pure products and solving the problem of export: firstly, the chronic use of drugs creates immunity in fungi or their biological effectiveness is low, secondly, most drugs have a strong impact on the environment and ecology. The most dangerous thing is causing great harm to soil microflora. The quality and effectiveness of fungicides used against cotton diseases do not meet the requirements. Most diseases caused by soil pathogens are root rot and wilt. A viral disease that causes great economic damage in our republic, which is considered as the most dangerous in cotton is homomosis.

On the experimental field of Research scientific institute of plant quarantine and protection several varieties of cotton were cultivated multi-seasonally in production, against soil pathogens and other diseases, together with the method of seed planting and root rot. Resistance to bacterial diseases gommosis (*Xanthomonas campestris* pv. *Malvacearum*) was studied., fungal fusarium (*Fusarium* spp.) and verticillium wilt (*Verticillium dahliae* Kleb.). In the course of scientific research, it was recommended to carry out highly effective seed treatments against root rot and gommosis. Varieties with high immunity and disease resistance were tested for Fusarium wilt and verticillium wilt. In recent years, the development of wilt disease in our republic has been insignificant. This is due to the varieties against *Verticillium* wilt are very important in production. (*Verticillium dahliae* Kleb.) The fungus is not common in cotton fields mainly because it is planted with resistant varieties.

The requirement of present time is the use of a comprehensive disease protection system. The reason is that our republic spends a lot of money on combating wheat black moth, cotton root rot and gommosis. Disinfection of seed material is carried out centrally and forcibly. It is necessary to have immunity, which is the main criterion for a well-coordinated, complex plant defense system. To do this, it is necessary to create resistant varieties with strong immunity to diseases. This criterion places great responsibility on breeding scientists. The main thing is to use drugs with

high immunity to diseases, resistant varieties, high efficiency, economical and harmless to nature and humanity. The development of disease-resistant varieties remains a green direction in crop protection. This is important for ensuring food safety, growing organically and protecting nature.

### **Conclusion**

The statement "Immunity is the main criterion for protecting plants from diseases" is not entirely accurate. While immunity is an important aspect of plant defense against diseases, it is not the sole criterion for protecting plants. Several factors contribute to plant protection, and a comprehensive approach is necessary to mitigate the risks of diseases effectively. Here are a few key points to consider:

1. Plant immune response: Plants possess innate defense mechanisms that allow them to recognize and respond to pathogens. This immune response involves various molecular and cellular processes that can help plants resist infection or limit the spread of diseases.

2. Genetic resistance: Genetic resistance plays a significant role in plant protection. Plant breeders often select and develop cultivars with specific resistance genes that confer immunity or reduce susceptibility to particular diseases. These resistant cultivars can withstand pathogen attacks more effectively.

3. Cultural practices: Proper cultural practices can significantly contribute to plant health and disease prevention. Practices such as crop rotation, sanitation (removing infected plant material), balanced nutrition, and appropriate irrigation and drainage can help create an unfavorable environment for pathogens to thrive.

4. Integrated pest management (IPM): IPM is a holistic approach that combines various strategies, including biological control, cultural practices, and judicious use of pesticides, to manage diseases and pests effectively. By integrating multiple methods, IPM aims to minimize the reliance on chemical control while maximizing sustainable disease management.

5. Environmental factors: Environmental conditions can influence disease development. Factors such as temperature, humidity, and light can create favorable or unfavorable conditions for pathogens. By optimizing environmental factors, growers can reduce disease pressure and enhance plant health.

In conclusion, while immunity is an important criterion for protecting plants from diseases, it is only one aspect of a comprehensive approach to plant protection. Considering genetic resistance, cultural practices, integrated pest management, and environmental factors is crucial for maintaining plant health and minimizing disease risks effectively.

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