

SCIENTIFIC BASIS OF PESTS OF DESERT PLANTS AND MEASURES TO CONTROL THEM

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Abstract

This article discusses the important role of various representatives of the flora of Uzbekistan in the national economy, in particular, the growing number of global buyers of fruits and vegetables grown in the hills, fields and mountains of our country.

Key words: Ecosystem, oasis, desert, insects, saxaul, parasites, predatory insects, agricultural measures.

Introduction.

Desert areas are unique ecosystems with unique climate conditions and natural resources. Plants growing in these areas are adapted to arid conditions and play an important role in maintaining the ecological balance. However, desert plants are attacked by various pests, which leads to ecosystem degradation. Effective pest control and plant protection measures require serious scientific foundations and technologies.

Pests and their impact on desert plants.

The main pests of desert plants are insects, fungi and microorganisms. Their negative impact on plants is manifested in:

Insects: Various sandstorms and heat-adapted insects damage the leaves, stems and roots of plants. For example, the sand locust (*Schistocerca gregaria*) covers large areas and destroys the vegetative part of plants.

Fungal diseases: Reduced soil moisture and warm conditions promote the growth of certain types of fungi. Fungal infections damage the plant's root system, slowing its growth.

Viruses and bacteria: Viral and bacterial diseases that destroy plant nutrients can kill vulnerable plants, especially in desert conditions.

Pest animals: In some desert areas, rodents and other wild animals eat the roots or seeds of plants.

Pest control measures.

A number of modern and traditional methods are used to protect the vegetation of desert areas. These methods should be aimed at maintaining ecological stability.

1. Biological control methods.

Biological control methods are implemented using natural enemies (parasites, predatory insects). For example:

Attract predatory worms or birds to the site, which destroy pest eggs.

Pest control using microbiological preparations. For example, the bacterium *Bacillus thuringiensis* is effective against insects.

2. Chemical control methods.

The use of chemical pesticides and fungicides helps to quickly destroy pests. However, in order not to disturb the delicate balance of the desert ecosystem, it is important to follow these rules:

Use of pesticides in minimal quantities and in accordance with the ecological characteristics of the area.

Use of safe chemicals that do not have long-term consequences.

3. Agrotechnical measures.

Agrotechnical methods are aimed at maintaining the soil and plants in a healthy state:

Reduce pest infestations by replacing plants and increasing diversity.

Use barriers such as sand barriers or soil consolidation techniques to protect desert vegetation.

4. Innovative approaches.

Drones and satellite surveillance: Detecting and monitoring pest outbreaks.

IoT (Internet of Things): Preventing diseases with devices that monitor the soil and climate around plants.

Genetic modification: Creating desert plants that are resistant to pests.

Ensuring environmental stability.

To ensure environmental sustainability in pest control, the following principles should be considered:

Use integrated approaches that maintain natural balance.

Expand the use of biological products instead of chemical agents.

Educate local residents and farmers about pests and provide environmental education.

Conclusion.

Scientifically based approaches to combating pests of desert plants serve not only to protect plants, but also to the sustainable development of the entire ecosystem. The combination of innovative technologies, biological and agrotechnical measures is an effective way to reduce the damage caused by pests of desert areas. By implementing these measures, it is possible to preserve the ecological and economic value of desert plants.

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