



Ectoparasiticides (Insecticides/Acaricides) in cotton

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Abstract

Cotton is an important cash crop worldwide and susceptible to damage by various ectoparasites such as insects and mites. The use of ectoparasiticides, such as insecticides and acaricides, is a common approach to control these pests. However, their overuse and misuse can result in environmental pollution and development of resistance in pests. This article discusses the use of ectoparasiticides in cotton, their mode of action, resistance development, and management strategies.

Introduction

Ectoparasites, such as insects and mites, are major pests of cotton and cause significant economic losses to the cotton industry. The use of insecticides and acaricides is a common approach to control these pests. However, their excessive and incorrect usage can result in environmental degradation, the emergence of pest resistance, and adverse side effects on creatures that are not the intended target. The effective management of ectoparasites requires the proper use of these chemicals in combination with other management strategies.

Mode of action of Ectoparasiticides:

Insecticides and acaricides have different modes of action, but they generally disrupt the nervous system, respiration, or reproduction of the pests. Depending on how they work, insecticides are categorised into many classes, including neonicotinoids, organophosphates, carbamates, pyrethroids, and insect growth regulators (IGRs). Acaricides are further divided into other categories according to how they work, including organophosphates, carbamates, pyrethroids, and avermectins.



Resistance development:

The excessive and improper use of insecticides and acaricides can lead to the development of resistance in pests, making the control of these pests difficult. Resistance can develop due to various reasons, such as genetic variability in pests, exposure to sub-lethal doses of chemicals, and the use of the same chemical for extended periods. The development of resistance in pests can be managed through the proper use of chemicals, rotation of different chemicals with different modes of action, and the use of integrated pest management (IPM) strategies.

Management strategies:

The management of ectoparasites in cotton requires the proper use of insecticides and acaricides in combination with other management strategies such as crop rotation, intercropping, biological control, and cultural practices. The use of insecticides and acaricides should be minimized, and their application should be based on pest monitoring and economic thresholds. The use of biological control agents, such as predators and parasitoids, can also help control pests. Intercropping with non-host crops can reduce pest populations by interrupting their life cycle and reducing their habitat. Cultural practices, such as plowing and pruning, can also help control pests.

Conclusion:

Ectoparasites, such as insects and mites, are major pests of cotton and can cause significant economic losses to the cotton industry. The use of insecticides and acaricides is a common approach to control these pests, but their excessive and improper use can lead to environmental pollution and the development of resistance in pests. The effective management of ectoparasites requires the proper use of these chemicals in combination with other management strategies such as crop rotation, intercropping, biological control, and cultural practices. The adoption of integrated pest management (IPM) strategies can help reduce the use of insecticides and acaricides and improve the sustainability of cotton production.

References

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