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Bio Pesticides Approach for Pest Management

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ABSTRACT

Agricultural practices such as application of fertilizers and pesticides were developed long ago but with great progress. Modern agricultural practices like chemical pest control will yeild good production. So we have to protect our environment from the harmful chemicals. Biopesticides was used as a component of Integrated Pest Management programs these bio pesticides can greatly decrease the use of conventional pesticides, while crop yields remain high. Bio pesticides are usually inherently less toxic than conventional pesticides and are effective in very small quantities and decompose quickly resulting in lower exposures, no residues and environment friendly. Safer to use for plants and animals.

INTRODUCTION

Bio pesticides are certain types of pesticides that are derived from natural materials like plants, bacteria, fungi and virus, and certain minerals. Integrated Pest Management (IPM) is an effective, long term, environmentally sensitive approach to pest management.¹⁻³

2.1 Classes of Bio Pesticides: ⁴⁻⁷

- Microbial pesticides
- Plant-Incorporated-Protectants (PIPs)
- Biochemical pesticides

2.2 Advantages: ⁸⁻¹⁵

- Bio pesticides often are effective in very small quantities and often decompose quickly.
- They generally affect only the target pest and closely related organisms.
- Bio pesticides can greatly decrease the use of conventional pesticides, while crop yields remain high.

DISCUSSION

Microbial pesticides comprise of a micro organisms the dynamic ingredient it can control various sorts of pests. The most generally utilized microbial pesticides are subspecies and strains of *Bacillus thuringiensis*.¹⁶⁻²⁰

Plant-incorporated protectants are pesticidal substances created by plants and the hereditary material important for the plant to deliver the substance. For instance, researchers can take the gene for a particular the *Bacillus thuringiensis* pesticidal protein, and bring the quality into the plant's own hereditary material and control the pest. Biochemical pesticides characteristically controls pest by non toxic mechanism.²¹⁻³⁰

Synthetic pesticides are used for pest control but synthetic pesticides will leave undesirable residues in food and water, alternative to synthetic chemical pest control includes Natural Control, Cultural Control, Biological Control, Alternative Chemicals, pheromone traps, and trap crops. These techniques will suppress the pests over time and they can reproduce themselves and keep growing, but for using this techniques more knowledge and attention is required cost is higher. To overcome the disadvantages of these techniques IPM was used to control pests.³¹⁻³⁸

Integrated Pest Management: Is an effective and environmentally sensitive approach to *pest management*. IPM is used in agriculture, horticulture and pest control.³⁹⁻⁴⁰

Advantages⁴¹⁻⁴⁵

- Long term prevention of pests
- Natural pest control mechanism
- Growth of healthy crops with least disruption to ecosystem.
- IPM is used at any level of agriculture
- Minimize pesticide use and less toxic

Four steps included in IPM⁴⁶⁻⁵⁰

- Action Thresholds
- Monitoring and Identifying Pests
- Prevention
- Control-Cultural controls, Biological control, Mechanical and physical controls, Chemical Management tools.

CONCLUSION

Biopesticides which can be effectively used in agriculture at a large scale. Also increasing health consciousness of Indian citizens have created a demand of organic food. This indicates huge scope for Bio Pesticides for pest management and enhancing crop productivity.

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