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Trichocard Preparation in Agricultural Entomology: Harnessing Natural Predators for Pest Control

(*Urvashi Verma[1], Divyanibedita Pradhan[2], K Phani Kumar[3], Pujarani Khuntia[4], Anjali Verma[5] and Anchal Choudhury[6])

[1]Ph.D. (Horti.), IGKV, Raipur, Chhattisgarh, India
[2]Faculty of Agricultural Sciences, Siksha 'O' Anusandhan, Deemed to be University
[3]Department of Entomology, Naini Agricultural Institute, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj- 211007, U.P. India
[4]Incubation Associate, Silver Oak University, Ahmedabad
[5]Department of Entomology, Banda University of Agriculture and Technology
[6]B.Sc. (Horti.), Dr. Yashwant Singh Parmar University of Horticulture and Forestry, H.P., India
*Corresponding Author's email: cpanigrahi99@gmail.com

In the realm of agricultural entomology, Trichocards represent a vital tool in integrated pest management (IPM) strategies, focusing on biological control through the deployment of natural enemies of crop pests. This article delves into the significance, preparation methods, applications, and benefits of Trichocards in agricultural contexts, highlighting their role in sustainable pest management practices.

Applications of Trichocards in Agricultural Entomology

Trichocards serve several important functions in integrated pest management strategies:

1. Monitoring Pest Populations: By attracting natural enemies, Trichocards provide valuable information on pest presence and population dynamics. This data informs decisions regarding the timing and necessity of pest control interventions.
2. Biological Control: Trichocards facilitate the augmentation and conservation of natural enemies by providing them with additional food sources and shelter. This supports sustainable pest suppression without the use of chemical pesticides.
3. Early Detection of Pests: Early detection of pest outbreaks is crucial for preventing crop damage. Trichocards help in identifying pest hotspots before infestations become severe, allowing for timely and targeted management strategies.
4. Research and Development: Trichocards are also used in research to study the behaviour, ecology, and effectiveness of natural enemies in different agricultural settings. This research contributes to the refinement of IPM programs and the development of new biological control methods.

Benefits of Trichocards

The adoption of Trichocards in agricultural entomology offers numerous benefits:

- Environmental Sustainability: Trichocards reduce reliance on chemical pesticides, minimizing environmental contamination and preserving biodiversity.
- Cost-Effectiveness: Compared to conventional pest control methods, Trichocards can be a cost-effective solution, particularly in the long term, by reducing input costs associated with pesticides.

- Enhanced Crop Health and Quality: Effective pest management through Trichocards promotes healthier crops with higher yields and improved quality, meeting market demands and consumer preferences.
- Compatibility with IPM Strategies: Trichocards complement other IPM components, such as cultural practices and biological control agents, enhancing overall pest management efficacy.

Challenges and Considerations

While Trichocards offer significant advantages, their use in agricultural entomology is not without challenges:

1. Species Specificity: Attractants on Trichocards may be species-specific, limiting their effectiveness against a wide range of pests and natural enemies.
2. Environmental Factors: Factors such as temperature, humidity, and wind speed can influence the effectiveness of Trichocards, requiring careful placement and monitoring.
3. Integration with Other Methods: Effective implementation of Trichocards requires integration with other IPM strategies and continuous monitoring to maintain their efficacy over time.
4. Public Awareness: Educating farmers and stakeholders about the benefits and proper use of Trichocards is essential for widespread adoption and success.

Future Directions

The future of Trichocards in agricultural entomology looks promising with ongoing advancements in attractant technology, deployment strategies, and research:

- Enhanced Attractants: Research continues to develop more potent and versatile attractants that can attract a broader range of natural enemies.
- Technological Integration: Integration with digital technologies, such as remote sensing and automated monitoring systems, could enhance the efficiency and scalability of Trichocard deployment.
- Global Adoption: Increasing awareness and acceptance of biological control methods, including Trichocards, are crucial for their adoption in diverse agricultural systems worldwide.

Materials Required

1. Tea strainer
2. Tricho cards
3. 50% honey solution
4. Stapler
5. Refrigerator
6. UV lamp
7. Gum
8. Brush

Methodology for Trichocard Preparation

- Clean fresh *Corcyra* eggs by passing through 15, 30 and 45 mesh sieves.
- Prepare “Trichocard” by cutting card board sheet to the size of 10 x10 cm which can accommodate 1 cc of eggs.
- Apply gum on the card and sprinkle the cleaned eggs uniformly.
- Remove the excess eggs from the cards by using brush.
- Allow the card for shade drying for 30 minutes. Treat the eggs under UV lamp for 30 minutes.

- Take polythene bag, insert UV treated "Trichocard" and nucleus card at the ratio of 6:1 (6 *Corcyra* egg cards: 1 *Trichogramma* nucleus card) and provide 50% honey vitamin E in a soaked cotton swab.
- Remove the Tricho cards after 2 days *Corcyra* eggs changes black colour on 3rd day indicates the parasitization of eggs.
- Release the parasitized egg cards immediately in the fields (or) store them in refrigerator at 10 degree centigrade up to 21 days.
- Place/tie/staple parasitized cards on leaf sheath of plant.

Conclusion

Trichocards represent a pivotal tool in the arsenal of integrated pest management strategies, leveraging natural predators to mitigate pest pressures sustainably. By harnessing the innate behaviors of beneficial insects, Trichocards contribute to environmentally friendly pest control practices that support agricultural productivity, biodiversity conservation, and food security. As agricultural challenges evolve, ongoing research and innovation will continue to refine the efficacy and application of Trichocards, ensuring their role in fostering resilient and sustainable farming systems globally.

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