

Efficacy of botanical pesticides against *Eriosoma lanigerum* (Hausmann) under ambient conditions

Name: Swastika Shrestha, Ananta Prakash Subedi

Affiliation: Department of Agrobotany and Conservation Ecology, Agriculture and Forestry University

Contact number: +977- 9867368322, +977- 9855046744 | Email address: swastikashrestha.nepal@gmail.com, apsubedi@afu.edu.np

Introduction

Woolly apple aphid infestation is a threat to apple production globally. Pesticide residues in apple is raising health concerns in Nepal. Botanical pesticides extracted from local plants can be a sustainable alternative to chemical pesticide for managing woolly apple aphids in Bajura, a region with potential for commercial apple production.

Research questions

- What local botanical pesticides can be used to manage woolly apple aphid?



Methodology

Botanical pesticides were prepared from locally available plants. Eight treatments with five replications were tested on woolly apple aphids collected from apple trees in Joru, Swamikartik-Khaphar Municipality. Mortality was assessed at 24, 48, and 72 hours under ambient conditions. ANOVA and DMRT test were used for data analysis in R-studio.

Key findings

- Azadirachtin-1500ppm showed the highest woolly apple aphid mortality (100% at 72h).
- Among the botanicals prepared, extracts from *Melia azedarach*, *Acacia concinna* and *Acorus calamus* also performed well, with significant effects at 48h and 72h.
- All botanical treatments outperformed the control, highlighting their potential as alternatives to chemical pesticides.



Conclusion

Locally prepared botanical pesticides from Bajura can effectively control woolly apple aphids under ambient conditions. However, commercial neem-based Azadirachtin outperformed all tested botanicals and *Melia azedarach* showed comparable efficacy. Future research in field conditions is required to validate the results.

