

CURRICULUM VITAE

Monali Dissanayake

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EDUCATION

University of Peradeniya, Faculty of Agriculture.

April/2025

Bachelor of Science honors in Agricultural Technology and Management

Major in Molecular Biology and Biotechnology

Final GPA: 3.51/4; Class: Second Class honors upper division

RESEARCH INTERESTS

Focus on functional genomics and molecular biology with applications in insect molecular genetics.

- Design and evaluation of small interfering RNAs (siRNAs) targeting *Myzus persicae* *flightin* gene for gene silencing applications.
- Analyze molecular diversity and evolutionary patterns of the *flightin* gene across Insecta using bioinformatics tools.
- Investigate gene regulation mechanisms and RNA interference (RNAi)-based pest control strategies.
- Apply sequence analysis, molecular phylogenetics, and siRNA design tools for functional gene studies.

RESEARCH EXPERIENCE

Functional Genomics Lab – Faculty of Agriculture, University of Peradeniya.

*DNA extraction of the *Myzus persicae* and amplification of the *flightin**

Undergraduate Research Student

January/2025– March/2025

Extracted genomic DNA from *Myzus persicae* specimens as part of a gene silencing study.

- Designed and validated specific forward and reverse primers targeting the *flightin* gene.
- Performed PCR amplification of the *flightin* gene and confirmed product integrity via gel electrophoresis.
- Handled and processed raw DNA samples, ensuring quality and consistency for downstream molecular analysis.
- Contributed to a broader investigation into RNAi-based pest control strategies through gene targeting.

Information Technology Lab – Faculty of Agriculture, University of Peradeniya.

*Analysis of molecular diversity of *flightin* in insecta, designing of targeted small interfering RNA for *Myzus persicae* *flightin* and designing of primers for amplification and sequencing of *flightin**

Undergraduate Research Student

January/2025 – March/2025

- Designed double-stranded RNA (dsRNA) molecules targeting the *flightin* gene of *Myzus persicae* using the dsRNA Engineer tool to support RNAi-based gene silencing strategies.
- Designed amplification and sequencing primers for PCR validation of the *flightin* gene.
- Conducted molecular variation analysis of the *flightin* gene across insect orders, with a focus on Insecta and specifically Hemiptera, using sequence alignment and phylogenetic approaches.
- Interpreted conserved and divergent regions within gene sequences to assess potential RNAi targets and evolutionary insights.

RESEARCH OUTPUTS

Abstracts

Dissanayake M.P., Herath, H.M.V.G. & Jayasinghe W.H.(2024). Molecular Diversity of *Flightin* in Insecta and Designing of Targeted Small Interfering RNA [Abstract]. Proceedings of the 10th Faculty of Agriculture Undergraduate Research Symposium, Vol. 10. Faculty of Agriculture, University of

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CERTIFICATES

- **Professional Certificate in Human Resource Management [virtual Academy]**
March 2025
- **Certificate in Computer applications [ESOFT]**
September 2021
- **Certificate in English [Kandy Cambridge College]**
November 2019

SPORTS AND ACHIEVEMENTS

- **Captain – Women’s Table Tennis team, University of Peradeniya 2023**
- **Member of the University of Peradeniya Table Tennis Team 2021-2025**
2nd Runner Up at Inter-university Table Tennis Championship 2022
Competed at Sri Lanka University Games Table Tennis Championship 2023
Competed at Inter-university Table Tennis Championship 2024
- **University of Peradeniya Colors for Table Tennis 2022-2024**

SKILLS

- Molecular Laboratory Techniques, Bioinformatics, Experimental Design and Data Analysis, Communication and Collaboration, Problem Solving and Critical Thinking, Time Management and Organization, Adaptability and Flexibility
- Proficiency in bioinformatics

ACADEMIC REFEREES

1. Professor H.M.V.G Herath

Professor in Environmental Genomics
Department of Agricultural Biology,
Faculty of Agriculture
University of Peradeniya. Peradeniya,
Sri Lanka.

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Email - venura@agri.pdn.ac.lk (Lecturer and Undergraduate research Supervisor)

2. Dr. Wikum Jayasinghe

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Department of Agricultural Biology,
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