

## **Development of A Semiochemical-Based Strategy for the Management of Coconut White Fly (*Aleurodicus cocois*)**

*H.M.S.M. Herath<sup>1</sup>, A.D.N.T. Kumara<sup>2</sup>*

*<sup>1,2</sup>Department of Biosystems Technology, Faculty of Technology, South Eastern University of Sri Lanka*

*<sup>1</sup>shameeramadhushan98@gmail.com, <sup>2</sup>adntkumara@seu.ac.lk*

### ***Abstract***

In Sri Lanka, the coconut industry, vital for the national economy, faces a significant threat from the recently invaded pest, Coconut White-Fly (*Aleurodicus cocois*). The pest's resistance to traditional pesticides and the tall nature of the palm has highlighted the need for sustainable management strategies. Therefore, it is important to find an alternative to chemical pesticides with a systemic nature, which underlines the urgency of adopting sustainable management strategies. This study aims to develop and evaluate a plant semiochemical-based management strategy for the Coconut White-Fly, employing trunk injection as a systemic alternative to chemical pesticides. The approach seeks to provide a sustainable solution, reducing pest populations without harming the ecosystem. Plant extracts from *Strychnos nux-Vomica* (Goda kaduru) seeds and leaves, neem, mint, and clove oil were formulated and tested for effectiveness. Four successful formulations were prepared and tested through direct spraying. Building on the mortality success, these formulations were further incorporated with systemic carrier materials like urea, NaCl, KCl, and citric acid, then evaluated through trunk injection methods. Field experiments revealed significantly ( $p < 0.005$ ) higher mortality percentages (68%, 95.85%, 93.27%, and 94.66%) for formulations 1 to 4 compared to the untreated control. Trunk-injected palms exhibited a reduction in the whitefly population over time, though continuous monitoring was hindered by weather conditions, emphasizing the need for repeated applications for a successful conclusion.

***Keywords: Alternative pesticides, Coconut White-Fly, Plant semiochemicals, Sustainable pest management, Trunk injection***