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Preliminary insights into *Apogonia* Beetle outbreak prediction in Sri Lanka: A case study in a cashew plantation at Wanathavilluwa, Puttalam

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Beetles occur frequently in crop cultivations, highlighting their significant ecological role in the agricultural landscapes. Although certain beetle genera are documented, the gaps in knowledge regarding their status as economic pests and the patterns of their sporadic population increases remain significant. This is critical, as some species have reached outbreak levels globally in recent decades. Therefore, field-based investigations remain a key approach to pest monitoring and control planning. This case study focuses on a sudden increase in beetle populations reported from Wanathavilluwa in the Puttalam District, one of Sri Lanka's major cashew cultivation areas. The damage, observed mainly on cashew leaves, was characterized by edge feeding that resulted in round-shaped margins, indicating the possible emergence of a beetle pest. Therefore, a preliminary field survey was carried out in the affected area to identify the beetle species and to document their abundance. Sampling of adult beetles was carried out in two different sites in the cashew plantation, Wanathawilluwa in December 2023. Beetles were captured using two UV-light traps from 18:00 to 07:00 h. Approximately 500 adult beetle specimens were examined and identified three types of *Apogonia* sp. (n= 437), and a few *Sophrops* sp (n= 27) and Sericini chafers (n= 23) (*Maladera mollis*, *M. pubescens*). The *Apogonia* population showed a female biased sex ratio (68.8%). The most abundant beetle (88.7%), tentatively identified as *Apogonia rauca*, has been previously reported from several locations, with higher abundances in dry zones like Dambulla. This pattern may suggest a preference for warmer environments, where rising temperatures could facilitate future population increases, possibly leading to outbreak scenarios. Although the current population increase did not significantly impact cashew yield during the study year, these findings highlight the need for continuous monitoring and further ecological research to inform sustainable, environmentally friendly pest management approaches in agroecosystems.

Keywords: *Agroecosystem, coleoptera, pest, phytophagous*

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