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Degree of crop damage caused by terrestrial pest gastropods in Nuwara Eliya District, Sri Lanka

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Some of the terrestrial gastropods are important herbivores that tend to be generalists and are serious pests of agriculture. The current study, from 2017 to 2019, estimated the degree of damage caused by these pests in the agricultural lands in Nuwara Eliya district. Ten 1 m² plots were established in 75 random agriculture fields and 5 polytunnels throughout the Nuwara Eliya district. The number of damaged plants, type of damage, percentage intensity of the crop damage and extent of the field damage were estimated by observing 10 plants per plot per crop species in each field. Approximately 10 % of the extent of each agricultural field was damaged by the gastropod pests. The leaves, fruits and roots of lettuce, cabbage, leeks, carrots and strawberries were severely damaged by pest gastropods. The damage was relatively less in polytunnels compared to open fields ($t = 5.32, p < 0.05$). Some crops like potatoes, chili, bell peppers and eggplant were not damaged if protected during the seedling stage. While nursery stages were the most severely attacked by these pests, young and mature stages were also attacked. *Bradybaena similaris*, *Deroceras reticulatum*, *Lissachatina fulica* and *Mariella dussumieri* caused the highest damage, while *Milax gagates*, *Subulina octona* and *Allopeas gracile* caused the least damage to the crops. In addition to agricultural fields, these pests use the marginal vegetation and dumping sites adjacent to these fields as resting grounds. Controlling measures are important to reduce crop damage and 70 % of farmers use molluscicides such as metaldehyde and lime, 79 % practice crop rotation. However, less than 20 % of the farmers obtain scientific advice from agrarian officers on effective control measures of these pests. Information on the accurate use and efficiency of the different controlling measures, population trends and the degree of damage caused by these pests is important to minimize the adverse impacts of these pests. This information will ultimately help reduce the economic loss to farmers.

Keywords: Agricultural lands, Crop damage, Economic loss, Nuwara Eliya, Terrestrial pest gastropods.

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