

A short survey of pest gastropods and their potential threats to local agriculture in the Kandy District

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Phylum Mollusca is a diverse animal phylum. Snails and slugs are included in Class Gastropoda. Many gastropods play an important role in ecological processes, while some gastropods are considered pests since they cause damage to plants in agriculture, horticulture, and forestry. Often these pests are exotic, invasive species introduced through trade and commerce. These pest species have the potential to invade natural habitats, resulting in alterations in the community structure of flora and fauna. Sri Lanka is home to 253 species of land snails of which 205 are endemic. In addition 18 species of exotic gastropods are present in the country. Most of these exotic species were identified as pests of agriculture and horticulture. No studies on pest gastropod distribution or damage to crops have been carried out in the country since 2002. The current study was aimed at identifying pest gastropod species, their distribution and abundance, and the degree of damage caused by them to crops in the Kandy district. Field visits were carried out from August to November 2016 in different agricultural areas, and night sampling for terrestrial pest gastropods were conducted in five selected agricultural fields. Two species of snails (*Lissachatina fulica* and *Allopeas gracile*) and two species of slugs (*Laevicaulis alte* and *Mariaella dussumieri*) causing damage to agricultural crops were identified. All four species are exotic; no native snails were found to damage agricultural plants. The distribution of these species as well as the damage caused to crops varied in different areas. Overall, *Laevicaulis alte* showed the highest relative abundance of 48.2% followed by *Mariaella dussumieri* with a relative abundance of 19.3%. Interestingly, *Lissachatina fulica*, which is considered one of the IAS, showed the least relative abundance of 2.4%. While some farmers were unaware of the damage caused by these pests, a few farmers used commercially available Metaldehyde to control them. Further studies will be conducted to estimate the degree of damage to crops and to estimate the economic impact on agriculture by these pest molluscs.

Key words: Gastropods, pest, snails, slugs, agriculture