A survey of damage to agriculture crops by terrestrial gastropod pests in the Nuwara-Eliya District

K.G.D.D. Thilakarathne[1], K.B. Ranawana[1] and N.S. Kumburegama[1]

Abstract

Some gastropods are serious pests of agriculture. Often they are exotic, invasive species introduced through trade and commerce. A previous study showed the presence of several pest gastropods in Sri Lanka and noted the damage to crops in Nuwara Eliya District. However, since then the damage caused by these pests to crops has not been investigated intensely. Therefore, this study aimed at determining the types of vegetable crops damaged by gastropods in the Nuwara Eliya District. A total of 112 agricultural fields representing all five Divisional Secretariats (DS) in the Nuwara Eliya District were sampled for a period of one year. Each land was surveyed during the night for gastropods by establishing ten sampling plots (plot size: 1 m^2) per field. Each plot was sampled for a maximum of 15 minutes. A total of ten species of snails and slugs were encountered. It included seven exotic species and three native species. *Lissacchatina fulica* was the most abundant species in Hanguranketa and Kotmale DS respectively, while, *Deroceras reticulatum* was the most abundant species in Ambagamuwa, Nuwara Eliya and Walapane DS. Nearly 90% of the gastropod species were attracted to cabbage and leeks, while, 80% of the species was attracted to carrot, which was significantly damaged by these pests. Of these gastropods, three out of ten species showed an abundance of over 50% in cucumber, gherkin, leeks, lettuce, pumpkin and sukini fields. Compared with the other species, *D. reticulatum* was encountered from a vast variety of agriculture fields. In addition to cabbage and carrot, its relative abundance (>90%) was highest in gherkin (71%), leeks (79%), lettuce (68%) and sukini (83%). On the other hand, the highest relative abundance of *Laevicaulis altae* was on pumpkin (63%), *Mariella dussumieri* and *Bradebaena similaris* on bell pepper (33% and 44 % respectively), *Deroceras laeve* on red lettuce (11%) and *L. fulica* on cucumber (81%). However, some crops such as celery, corn, manioc and tomato were not damaged by these species. The gastropods encountered in the study cause damage to a wide variety of vegetable crops. These data will be used for pest management practices in the future.

Keywords: *Agricultural crops, Nuwara Eliya, Pest gastropods, Vegetable fields*

---

[1] *Department of Zoology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka. Corresponding author's email: skumburegama@yahoo.com*