|  |
| --- |
| Effect of Selected Biopesticides to Control Plesispa Beetle (Plesispa reichei) Under Laboratory Conditions |
| Abstract Body | Plesispa beetle (*Plesispa reichei* Chapuis) is one of the serious insect pests found in coconut nurseries in Sri Lanka. Both adults and larvae cause damage by feeding on the internal tissues of the folded blades. Biopesticides offer an ecologically sound and effective solution for pest control. Therefore, the study was conducted to determine the effect of selected biopesticides to control the Plesispa beetle under laboratory conditions, the median lethal (LC50) dose, and to evaluate the phytotoxic effect on coconut seedlings. The test compounds were BioSolex, Flipper, and Agro Safe Liquid (ASL). Carbosulfan 20% was used as positive control and distilled water was used as vehicle control. Both the adult and larval stages were tested at the exposure of 24, 48, and 72 hours respectively and the mortality percentage was recorded. A preliminary test was performed to determine the upper and lower threshold concentration. The biopesticide concentrations which showed 90 % lethality interpolated from concentrations inhibition curves were tested for phytotoxic effects. Data on mortality and phytotoxic effect were statistically analyzed by comparison of treatment mean with control means by one-way ANOVA and Dunnet’s multiple mean comparison test. The 50 and 90 % lethal concentrations were interpolated from a non-linear regression curve fit model. Three biopesticides showed concertations and time- dependent increase in mortality. At 48 hours, the LC50 values respectively for adult and larvae were 0.14x104 ppm and 0.03x104 ppm on BioSolex, 19.4x104 ppm and 15.6x104 ppm on Flipper, and 39.6x104 ppm and 36.7x104 ppm on ASL. Flipper and ASL showed significant differences in mortality at very high concentrations. In summary, BioSolex offered high mortality at low concentrations without any phytotoxic effect. Therefore, BioSolex can be recommended as a biopesticide that effective on Plesispa beetles compared to Flipper and ASL. |