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An Analysis of Five Picked Therapeutic Herbs' Toxicity Profiles Against Rice Weevil

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The importation of several synthetic fertilizers and pesticides into Sri Lanka has been outright forbidden due to their adverse consequences. Consequently, there was a decline in yield and a nationwide increase in food costs. This transition to organic farming had a severe impact on Sri Lanka's economy in the second half of 2021, compounded by other existing issues such as the COVID-19 pandemic. To mitigate the undesirable effects associated with artificial substances, researchers have focused on isolating prescribed drugs from botanical sources. In addressing the issue of stored grain pests, particularly, *Sitophilus oryzae*, herbal insecticides have emerged as a more reliable, affordable, sustainable, and environmentally benign alternative to synthetic pesticides. In an effort to determine the plant with the most potent insecticidal capacity against the rice weevil, alcohol-based extracts of *Lantana camara* (leaves), *Carica papaya* (seeds), *Ricinus communis* (leaves), *Calotropis gigantea* (flowers), and *Gliricidia sepium* (leaves) were used in mortality tests with four replications in a laboratory bioassay. The culturing of rice weevil was performed by using laboratory conditions at 25±1°C and 50-60% RH, allowing for classification based on morphological features, including the wider and longer rostrum of males compared to females. The comparative efficacy of botanicals against the rice weevil mortality was determined through an analysis of survival statistics. A control test using methanol as the solvent was also conducted. The effectiveness of botanicals can be ranked as follows: *G. sepium* > *C. gigantea* > *R. communis* > *C. papaya* > *L. camara*. The results led to the conclusion that *Gliricidia sepium* exhibited the highest mortality, suggesting its potential for further study in the future.

Keywords: *Gliciridia sepium;* mortality rate of storage pests; plant extracts; rice weevil