

Potential of natural pesticides from indigenous plants in Sri Lanka to control *Epilachna vigintioctopuntata*

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The potential of plant extracts as control agents of *Epilachna vigintioctopuntata* on bitter gourd (*Momordica charantia* L.) was investigated. Methanolic extracts of seed kernels of *Annona reticulata* (Custard Apple) and *Annona squamosa* (Sugar Apple) were tested for their insecticidal and antifeedant activities against *Epilachna vigintioctopuntata*.

Annona squamosa extracts showed strong antifeedant activity against *Epilachna* larvae. They did not consume treated leaf disks at all at the concentration at 20 g L^{-1} , but all of treated larvae died just after the test period. Normally fourth instar larvae of *E. vigintioctopuntata* can live without food for 3 to 4 days. Therefore, it is possible that *Annona squamosa* has a contact poison effect on the pest. Furthermore, when concentrations were higher than 2.5 g L^{-1} , the reduced food consumption was found to be more than 80%, indicating a strong antifeedant activity. On the other hand with *A. reticulata* extracts, more than 80% antifeedant activity was observed only when the concentration was 10 g L^{-1} or more. Unlike with *A. squamosa* extracts, dose dependent antifeedant activity was observed with the extract of *A. reticulata*.

A. squamosa extracts was most effective in the toxicity tests. These showed a very strong toxic effect on *Epilachna vigintioctopuntata* larvae. At the concentration of 5 g L^{-1} , *A. squamosa* showed 80% mortality after 24 h where as the mortality observed from *A. reticulata* extracts was 0%. However, after 48hrs of treatment, a 100% larval mortality was observed at 5 g L^{-1} with *A. squamosa*, but only 13% mortality was observed with *A. reticulata* extracts. After 24 h, even with the highest concentration, *A. reticulata* extracts elicited only 40% larval mortality. Furthermore, at high concentration the larvae treated with *A. squamosa* extracts turned into black colour and died within a few hours after treatment. Although the percentage larval mortality increased with the increased concentration (for both plant extracts), the larvae did not exhibit any distinct morphological defects.

It is concluded that these plant extracts would provide effective control against *Epilachna vigintioctopuntata* in commercial bitter gourd cultivation in Sri Lanka.