

## Feeding Preference of Bagworm, *Metisa plana* Walker (Lepidoptera: Psychidae) on Four Different Palm Species

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*A study was conducted to determine the feeding preference of the bagworm, Metisa plana on different palm species in no-choice and choice feeding tests. In the laboratory study, the larvae of bagworm, M. plana were fed with leaves of four palm species namely oil palm (Elaeis guineensis), coconut (Cocos nucifera), red sealing wax palm (Cyrtostachys renda) and salak (Salacca zalacca). In the no-choice feeding test, the bagworms were fed with leaves of each selected palm species and in the choice feeding test, the M. plana were fed in pairs with leaves of E. guineensis as a constant diet and each of C. nucifera, C. renda and S. zalacca respectively. Furthermore, the feeding preference of bagworms on E. guineensis and C. nucifera leaves was evaluated in a semi-field trial. The result of the laboratory study showed that C. nucifera was the most preferred host plant followed by E. guineensis, C. renda and S. zalacca. The M. plana fed with C. nucifera leaves recorded 28.83 cm<sup>2</sup> and 22.01cm<sup>2</sup> of total leaflet area consumed in the no-choice feeding test and choice feeding test respectively. The bagworms feeding on leaves of C. nucifera showed 33.33 per cent survival rate and were observed to have the fastest larval development and transformation to pupal stage. The leaves of C. nucifera were preferred over E. guineensis despite the latter being the observed host plant of this bagworm species. In no-choice assessments, the M. plana fed with E. guineensis leaves recorded a total leaf area consumption at 26.89 cm<sup>2</sup> and showed only a 13.33 per cent survival rate. C. renda and S. zalacca leaves were recorded as the least preferred host plant and recorded a low leaf area consumption at 14.67cm<sup>2</sup> and 11.40 cm<sup>2</sup> in no-choice feeding and 1.29 cm<sup>2</sup> and 5.05 cm<sup>2</sup> in choice feeding respectively. The M. plana that were fed with the two respective palms did not survive to the pupal stage. In the semi-field study, similar results were obtained as C. nucifera was recorded as the more preferred host plant by the bagworm as compared to E. guineensis. The cumulative damage on the leaves of the palms was recorded at 29.37 per cent for C. nucifera and 13.13 per cent for E. guineensis. In the choice feeding test, the bagworms fed with leaves of C. nucifera recorded 12.71 per cent and that of E. guineensis at 8.19 per cent of cumulative damage. The percentage of survival rate of bagworms that were fed with C. nucifera leaves was recorded to be significantly higher ( $P < 0.05$ ) at  $18.75 \pm 2.16$  per cent as compared to E. guineensis that recorded only  $9.50 \pm 1.53$  per cent.*

**Keywords:** Bagworm, *Metisa plana*, feeding preference, oil palm, coconut, red sealing wax palm, salak palm.