

## **Economic Impact of Severe Bagworm Infestation on Oil Palm Yield**

CHE AHMAD HAFIZ CHE MANAN, SITI NOOR HAJJAR MD LATIP, ABD RAHMAN B MOHD TAJUDIN AND ROMZI ISHAK

*Bagworm (*Metisa plana*) is a severe and harmful pest in oil palm plantations. Continuous infestations from the bagworms result in severe canopy defoliation, and increase in the infestation area, even with control strategies undertaken. This study aim to assess the value of yield loss after a severe bagworm outbreak which occurred in 2016, and evaluate the relevance of introducing the 'Early Warning System' (EWS). The monthly yield was recorded in the infested and non-infested plots from 2015 to 2018. An independent t-test was used to analyse yield per hectare (tonnes/ha), average bunch weight (ABW), and average bunch number (ABN). The results showed a decline in yield of 37.96 per cent in 2017 and 36.81 per cent in 2018, at one to two years after the outbreak. An economic loss at an average of RM4 306.45 per hectare each year was recorded at a crude palm oil (CPO) price of RM2 000 tonnes per hectare. Implementing the EWS by employing a monitoring team costs only 0.9 per cent of the potential value loss suffered. In conclusion, employing a monitoring team is worthwhile and recommended. Additionally, systematic pest forecasting models, with the Internet of Things (IoT) supporting system, are strongly recommended for bagworm management in the future.*

*Keywords: Bagworm, *Metisa plana*, economic impact, oil palm yield, early warning system.*

