

# THE EFFICACY OF NON-CHEMICAL METHODS TO CONTROL WAX MOTH (*Galleria mellonella*) ON HONEYBEES

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Wax moth (*Galleria mellonella*) is one of the most destructive pests of honeybees (*Apis cerana*) in Sri Lanka causing severe loss of colonies in the beekeeping industry. The larvae of wax moth eat and destroy the beeswax combs where the bees store pollen, honey and lay eggs. Application of chemical pesticides to control wax moth is harmful to bees and deteriorate the quality of bee honey. This study was carried out to evaluate the efficacy of non-chemical strategies to control wax moths at Dilmah Conservation Climate Change Research Center (DCCCRC), *Nawalapitiya*. Smoking using tobacco leaves and fixing net trap along with supplementary feeding were tested with a control, where supplementary feeding was not provided. Each treatment was replicated three times. Colony performing index (CPI), number of wax moths and number of dead insects were recorded in one-week intervals and colony weight and colony growth were recorded in two weeks intervals. The CPI and comb area were significantly ( $p < 0.05$ ) increased in the colonies treated with tobacco smokes while recording a minimum number of wax moth larvae infestation. The colony weight was significantly increased ( $p < 0.05$ ) in the colonies with the fixed net trap. The mean number of dead wax moth larvae were recorded from high to low (0.58, 0.33 and 0.13) in tobacco smoked colonies, fixed net traps and the control, respectively. The mean number of dead adult honey bees were recorded from high to low (0.96, 0.80 and 0.73) in tobacco smoked colonies, the control and the fixed net traps, respectively. It can be concluded that the use of tobacco smoking along with supplementary feeding can be used to control the infestation of wax moth attack in compared to the use of fixed net trap and the control.

**Keywords:** *Apis cerana*, Colony performance index, Fixed net traps Tobacco smokes, Wax moth