

# Effect of Different Host Plants on the Biology of Cotton Caterpillar (*Palpita indica* Saunders)

Wook Kyun Shin, Gil Ha Kim<sup>1</sup>, Jeong Wha Kim<sup>1</sup> and Kwang Yun Cho

Screening Division, Korea Research Institute of Chemical Technology,

<sup>1</sup>Department of Agricultural Biology, Chungbuk National University

The present study was aimed to examine the effect of different host plant on the biology of cotton caterpillar which is a pest of outbreak in cucurbit vegetables.

The feeding and oviposition preferences for cucumber and pumpkin were greater than those for watermelon, oriental melon, and melon. The period of egg and larva fed on oriental melon, melon, and pumpkin were longer than those on watermelon and cucumber. The longest pupal period was 10.5 days from cucumber. The hatching rate, pupation rate, emergence rate, and survival rate were observed from different host plants. The hatching rate was the highest on cucumber (87.2%) and the lowest on melon (72.8%). The pupation rate on watermelon and oriental melon (90.0% and 89.1%, respectively) was higher than that on cucumber (62.0%). The emergence rate on cucumber (93.5%) was the highest and that on oriental melon (78.7%) was the lowest. The rate from hatching to emergence on watermelon (76.0%) was the highest, and the lowest on cucumber (50.0%). The adult period on melon (17.6 days) was the longest, and the shortest on cucumber (15.5 days). Average number of eggs per female on cucumber (281.8 eggs) was the highest, and the least on oriental melon (96.6 eggs). The adult survivorship on cucumber was the longest (30 degree days), and the shortest on pumpkin (17 degree days). The preoviposition period on oriental melon was longer than that on melon and watermelon and mean generation time (days,  $T$ ) on melon was the longest (47.2 days), though they were not significant. The net reproductive rate per generation ( $R_0$ ) was the highest on cucumber as 191.3, and the highest intrinsic rate of natural increase ( $r_m$ ) was observed from cucumber as 0.127.

All these results suggest that the growth and reproduction of cotton caterpillar varies depending upon the kind of host plants. The analysis of the life table revealed that cucumber and pumpkin were the favorable host plants of cotton caterpillar.