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Sublethal effects of imidacloprid on the life-table parameteres of *Aphis gossypii*

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ABSTRACT

Nowadays new and safety pesticides have a significant importance on the integrated pest management in the world, so in this study we report the sublethal effects of imidacloprid on cotton aphid (*Aphis gossypii*) reproduction by demographic toxicology. These experiments were carried out at 25±1°C, 70 ± 5% RH and photoperiod of 16: 8(L:D). Leaf discs of cucumber immersed in the recommended concentration of the above mentioned insecticide and then located in the 5.5 cm diameter Petri dishes. A newly emerged adult female was released on the lower surface of each leaf discs. There after various parameters such as longevity, daily fecundity rate and the intrinsic rate of increase were recorded. Imidacloprid reduced adult longevity (4 days) compared to the control (16 days). Life expectation in control and imidacloprid treatment were 4.30 and 2.25 days respectively. Gross fecundity rate in imidacloprid treatment and control were 3.97 and 49.13 respectively. R_0 were 13.52 and 1.45 in control and imidacloprid treatment respectively. The intrinsic rate of increase (r_m) was 0.05 in imidacloprid and 0.26 in control that is reduced by 81% in imidacloprid treatment. These results show the significant effects of imidacloprid on the life table parameters of *A. gossypii*.

Key words: *Aphis gossypii*, imidacloprid, Sublethal effects, Life Table.

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