

Investigation of bioecology of orange pulvinaria scale *Pulvinaria aurantii* Ckll. in the west of Mazandaran

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The bioecology of orange pulvinaria scale *Pulvinaria aurantii* Ckll. was studied in a garden in the west of Ramsar city, Mazandaran province and also in laboratory conditions in 3 different temperature regiments ($21 \pm 1^{\circ}\text{C}$, $26 \pm 1^{\circ}\text{C}$ and $31 \pm 1^{\circ}\text{C}$) with $75 \pm 5\%$ RH. The results indicate that the pest has 2 generations in a year. The insect hibernates as second instar nymph. The population peak for the first nymphal instar in the first and second generations occurs in July and the late of September, respectively. The sex-ratio (male:female) is 1:5.92. The spatial distribution pattern of different nymphal instars at the top of the crown is 1.35 and at the sides of the crown is 1.59. The parthenogenic females produce 100% female progeny. The beetles *Cryptolaemus montrouzieri* Muls. and *Chilocorus bipustulatus* L. are two important predators attacking this insect and the most important fungal parasite, ever identified was *Verticillium lecanii*. The average fecundity and hatchability are 464 ± 41 and 95.4% respectively. The fecundity rate was significantly higher in $31 \pm 1^{\circ}\text{C}$ (544 ± 14) compared to $21 \pm 1^{\circ}\text{C}$ (261 ± 16) and $26 \pm 1^{\circ}\text{C}$ (470 ± 20). The percent age of hatchability was not significantly different in two temperatures $31 \pm 1^{\circ}\text{C}$ (97.5%) and $26 \pm 1^{\circ}\text{C}$ (96%), however they were significant when compared to temperature $21 \pm 1^{\circ}\text{C}$ (89%).