Advances in the Environmentally Friendly Management of Red Palm Weevil, Rhynchophorus ferrugineus (Coleoptera: Curculionidae)

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Abstract : The red palm weevil (RPW), being the most invasive insect pest of palm family, is considered as the most dangerous pest around the globe. As three out of four life stages of weevils are concealed inside the host plants, leaving only the adult stage for controlling it. The use of sex pheromone (Ferrugineol) for the management of red palm weevil is considered as the most rewarding technique of IPM. The current studies were conducted to find the relative potential of four different treatments including Sex pheromone, sex pheromone + date fruit + sugarcane pieces, sex pheromone + ethyl acetate and sex pheromone + jaggary water applied on the attraction behavior of weevils. The treatments were applied randomly at two different locations of Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan including Germ Plasm Unit (GPU) and fruit nursery farm having date palm plants of different ages of four varieties of date palm. The treatments were applied for three consecutive months, including February, March, and April 2022. The pheromone traps were installed at the height of two feet under shade on the western side of date palm plants. The results revealed that among the treatments, T4 consisting of Jaggary water and sex pheromone was found as the most effective treatment and attracted the maximum number of 127 weevils followed by T3 consisting of ethyl acetate and sex pheromone, the adverting F3 weevils. In contrast to this, T2 consisting of sex pheromone and date fruit was found as the least effective treatment in attracting red palm weevil and attracted only 15 adult weevils. Among the two selected locations, the population of red palm weevil was found comparatively higher at GPU compared to the nursery farm, Dera Ismail Khan. In conclusion, T4 may be used for the effective and safer management of red palm weevil.

Keywords: red palm weevil, integrated management, sex pheromones, Jaggary water

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