Abstract
Rhynchophorus ferrugineus Ovil is one of the most important pests of palm trees in Asia, North Africa and Spain and is currently one of the most important quarantine pests of Iran in Saravan city of Sistan and Baluchestan province. Bulk hunting of whole insects using pheromone traps is one of the tools for controlling *Rhynchophorus ferrugineus* Ovil in integrated pest management. To facilitate the use of pheromone traps, finding a synthetic trapping agent with pheromone traps will increase the performance of pheromone traps to increase predation of this pest in field traps. The purpose of this study done in 1395-96 was to evaluate the effect of ethyl butyrate as one of the identified chirons of host plant tissue under field conditions on mass predation of *Rhynchophorus ferrugineus* Ovil in a complete randomized block design with 5 treatments and 4 replications For each concentration of the active substance and was administered in three portions. . Analysis of variance (first experiment) of the effect of different doses of ethylbutyrate on the cumulative pheromone in the Mass hunting operations showed that the percentage of daily predation on the cumulative pheromone was significantly different at 1% in the number of females, males and total predation. The results also showed that the highest percentage of predation of female, male and total was observed in pheromone + ethylbutyrate 2 pore treatment (70.95%) and the lowest rate of prey in ethyl butyrate treatment alone in two pits (23.75%).
Analysis of variance (second experiment) of the effective dose of ethyl butyrate with synthetic ethyl acetate, ethanol and palm kernels as natural chironom in male and female insects showed that the daily hunting percent of ethyl butyrate, ethyl acetate, ethanol and palm kernels on the cumulative pheromone had a significant difference at the 1% level in the number of female, male and total insects. Daily hunting percent also showed that the highest rate of female insect prey in pheromone + palm kernel (5.5%) and the lowest in pheromone + ethyl acetate (0%), the highest rate of male prey in pheromone + ethanol (2.25%). % And lowest in pheromone + palm kernel treatment (0.25%) and highest percentage of total hunting (5.75%) in pheromone + palm kernel treatment and lowest in pheromone + ethyl acetate (0.75%). Analysis of variance (third experiment) of combining synthetic ethyl butyrate, ethyl acetate and ethyl acetone with natural chironom on the cumulative pheromone of Rhynchophorus ferrugineus Ovil show that the cumulative difference in the number of female insects, male and total hunting percent were significant at 1% level. Daily hunting results also showed that females had the highest rate of predation in pheromone + palm kernel(5.75%) and the lowest
in pheromone + ethyl acetate + ethanol (0.75%). Maximum predation rate of male insect in pheromone + palm kernel treatment (1.25%) and lowest in pheromone + ethyl acetate + ethanol (0.25%) and pheromone + ethyl butyrate + ethanol (0.25) and highest total hunting percentage (7.00%) in pheromone + palm kernel treatment and the lowest was obtained in pheromone + ethyl acetate + ethanol (1%).

Keywords: Ethyl Butyrate, Red palm weevil, Cumulative pheromone, Kairomone

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Effect of different kairomons on aggregation pheromone in mass trapping operation of red palm weevil

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