Insecticidial Effects of Essential Oil of Carum copticum on Sitophilus oryzae L. (Coleoptera: Curculionidae)

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Abstract : Recently, there has been a growing interest in research concerning the possible use of plant extracts as alternatives to synthetic insecticides. In this research, the insecticidal effects of Carum copticum essential oils against rice weevil adults were investigated in laboratory condition. Essential oils was extracted through distillation with water using Clevenger apparatus. Tests of randomized complete block included six concentrations and three replications for essential oils (fumigant toxicity) along with control treatment in condition of 27±1ºC degrees Celsius temperature, relative humidity of 65 ± 5 percent and darkness. LC50 values were calculated by SPSS.21.0 software which presented the value of LC50 of Carum copticum essential oils after 48 hurs, 187.35± 0.40 µl/l air on rice weevil adults. Results showed that increasing the concentration of essential oils increased the mortality rate cases. The results also showed that essential oils of Carum copticum are effective biological sources which can effectively protect stored grain from infestation by the rice weevil; although for application of these combinations further research may be needed.

Keywords : insecticidial effects, essential oil, Carum copticum, Sitophilus oryzae
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020