



Roll of three essential oils and their Nano against *Ephestia cautella* (Lepidoptera-Pyralidae) under laboratory and store conditions

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Abstract : In this work, the essential oils (bulk &nano phase) of Purslane, Mustard and Castor oil were tested for their toxicity, ovipositional deterrent and persistent against larvae and adult of almond moth, *E. cautella* under laboratory and store conditions. The most effective oil was Purslane oil (bulk and nano) followed by Mustard and the least one was Castor against larvae of *E. cautella*. At high concentration, the percentages of larval mortality recorded 70.04, 31.10 & 20.13% and reached 93.61, 79.10& 59.39% in case of Purslane, Mustard and Castor(bulk &nano phase), respectively. Nano- Purslane had strong insecticidal efficacy and was significantly highly effective tested oil against almond moth. The number of laid eggs decreased with increasing tested oils concentrations. The tested oils vapours (bulk and nano phases) had bioresidual effectiveness which progressively decreased with the increase of lapsing storage periods. Mostly a complete inhibition of moth's emergence was recorded in case of nano-Purslane. This can be attributed to the sterilizing effect of Purslane oil in both phases (bulk and nano) on the moths as well as its toxicity to the deposited eggs and adult emergence during storage intervals up to 125 days.

Keywords: Almond moth, essential oils, Purslane, Mustard, Castor oil, repellent activity,