

## Effect of Four Medicinal Plant Extracts on Chickpea Leaf Miner *Liriomyza cicerina* (Rondani)

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**Abstract :** The surveys carried out in 2014, 2015 in the regions of Abda- Doukala, Chaouia- Ouardigha, Zemour- Zair and Fes-Sais have confirmed that the leaf miner was the main insect pest attacking chickpea (*Cicer arietinum* L.) in Morocco. The grain yield losses caused by this pest could be more than 20% for winter planting and more than 42% for spring-sown crop. To reduce the chickpea leaf miner infestations, four essential oils, as biopesticide alternatives, were tested for their insecticidal effect on *L. cicerina*, adults and larvae under laboratory conditions. In addition, we assessed the efficacy of these essential oils with and without adjuvant against this pest in comparison to three insecticides under field conditions. *Mentha pulegium*, with a dose of 33 µl/l of air caused 100% mortality on adults and larvae, after three hours and six hours of exposure, respectively. *Eucalyptus* showed 100% mortality on adults and larvae, with doses of 33 and 83 µl/l, after six and three hours of exposure, respectively. In the field conditions *M. pulegium* and *E. globulus* with adjuvant showed promising results compared with Abamectin, Azadirachtin and Spinetoram respectively. Essential oils could be used as one of the IPM components for the control of chickpea leaf miner.

**Keywords :** *Liriomyza cicerina*, chickpea, essential oils, insecticidal activity, Morocco

**Conference Title :** ICE 2017 : International Conference on Entomology

**Conference Location :** Paris, France

**Conference Dates :** October 19-20, 2017