Study of essential oil of three medicine plants on some greenhouse pest

Abstract

Potential problem associated with using toxic insecticide for long time include pest resistance and negative impact on natural enemies, environment and human health. The discovery of active compounds that are more selective and less persistant will be more benefical for the environment and agricultural product consumers. Not only might certain secondary metabolites of plants orgin by source of new insecticide, but also botanical derivatives such as extracts and essential oils may be more environmentally benign than synthetic chemicals. Essential oils demonstrate a wild range of bioactivities to insects from direct toxicity to oviposition and feeding deterrence as well as repellence and attraction. In this paper, we have estimate toxicity of three species essential oils of medicinal plant, *Mentha longifolia*(Lamiaceae), *Salvia officialis* (Lamiaceae) and *Myrthus comunis* (Myrtaceae) on three greenhouse pest, which has high damage: *Brevicoryne brassica* L. (Hemiptera: Aphididae), *Thrips tabaci*(Thysanoptera: Thripidae) and *Tetranychus urtica* koch (Acari: Tetranychidae). Doses of essential oil in this experiment was 0, 0.5, 2, 3.5, 5, 6.5 and 8 µl. LC_{50}, LT_{50} and ED_{50} for all three essential oils was estimated. *Mentha longifolia* has more toxic effect on this pest and may be use as safe and proper insecticide for them. LC50 *Mentha longifolia* for *Brevicoryne brassica* was 24.910 µl/L air, for *Thrips tabaci* was 37.377 µl/L air and for *Tetranychus urtica* Koch was 20.082 µl/L air.

Keywords: essential oils, medicinal plant, greenhouse pest