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**Evaluation of the application of some plant extracts on red
spider mite and its natural enemies in Egypt and South
Africa**

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ABSTRACT

EVALUATION OF THE APPLICATION OF SOME PLANT EXTRACTS ON RED SPIDER MITE AND ITS NATURAL ENEMIES IN EGYPT AND SOUTH AFRICA

In the present study plant extracted (*Syzygium aromaticum*, *Foeniculum vulgare*, *Zingiber officinale*, *Linum usitatissimum* and *Ocimum basilicum*) were extracted either by hexane or acetone. Also Commercial essential oils for the same plants and Vertimec acaricid, were tested against *Tetranychus urticae* Koch eggs and adults and Phytoseiid predatory mite *Phytoseiulus persimilis* by using spray technique. The *S. aromaticum* hexane extract against eggs and adult female of *T. urticae* flowing by all tested plant extracts. Results revealed that LC₅₀ value of *S. aromaticum* acetone extract was more toxic than all plant extracts against *T.urticae* eggs and adults. The mortality percentage for *P. persimilis* using acetone extract, recorded that *S. aromaticum* caused high toxicity against *P. persimilis* followed by the other plant extracts. The *S. aromaticum* essential oil exhibited a high degree of efficiency against eggs and adult female of *T. urticae* . The LC₅₀ value of the biocide (vertemic) against *T. urticae* adult were 0.0005 ml/L. The Identification was carried out using GC/MS analysis, as mentioned before in material and methods. Eleven compounds were identified by comparing with instrument database library. Thin Layer Chromatography, (TLC) was used to separate and isolate of various compound present in experimental clove hexane extracts of *S. aromaticum*, three compounds Eugenol, Caryophyllene and Eugenyl acetate were identified by comparing with instrument data base library. The effect of plant hexane extract and essential oil of *S. aromaticum* clove were investigated on life-table parameters of *T. urticae* . Life table parameters show significant reduction in r_m , R_0 and λ . Both plant extract and essential oil of *S. aromaticum* caused a reduction in longevity and survival from 0.24 in control to 0.19 female/ day.

Key words: plant extract, *Tetranychus urticae* ,*Syzygium aromaticum* Thin Layer Chromatography , Eugenol and Life table.

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