

**ACARICIDAL ACTIVITY OF SUPERCRITICAL CO<sub>2</sub>-EXTRACT OF  
*Tagetes verticillata* Lag. & Rodr.**

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*Tetranychus urticae* Koch is a highly polyphagous species with more than 1100 host plants reported worldwide. *Tagetes verticillata* Lag. & Rod. is an andean plant with ethnobotanical uses in Colombia, but there is not scientific research literature devoted to it. In this work, a supercritical CO<sub>2</sub>-extract from *T. verticillata* (SCCT) is obtained. The extraction process were carried out in the range of 318-323 K, 120 bar and solvent flow rate in the range of 60-80 L/h. Some compounds from this extract were identified using GC-MS. The acaricidal activity over adult females of *T. urticae* of SCCT extract and n-hexane and ethyl acetate extracts obtained by percolation was measured and compared with a commercial acaricide. The mortality of mites at 72 h caused for SCCT extract at 5000 ppm was not significantly different from commercial acaricide and was significantly greater than the control for 1000 ppm concentration and further. The acaricidal activity of SCCT extract was significantly greater than the control at 5000 and 2500 ppm. Some terpenes were identified to be the main compounds of the SCCT extract. Our results suggest that supercritical extraction with CO<sub>2</sub> from *T. verticillata* allows to obtain a higher concentration of compounds with acaricidal activity in comparison with other extraction methods evaluated. We conclude that *T. verticillata* has a significant acaricidal activity. Then, it is important to identify the compounds responsible of this activity and to determine the process conditions that allow a better extraction selectivity of these compounds using supercritical fluid extraction with CO<sub>2</sub>.

**Keywords:** *Tagetes verticillata*, *Tetranychus urticae*, acaricidal.

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