



CYTOTOXICITY OF THE AQUEOUS, HYDROALCOHOLIC AND ETHANOLIC EXTRACTS, OF *Tagetes patula* AND *Tagetes erecta*.

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Introduction: In phytochemical studies performed with species *Tagetes* is found a wide variety of organic compounds, including aromatic, such as thiophenes, as well as flavonoids and terpenes^{7,8}. The use of the genus *Tagetes* in organic farming is described in many scientific papers^{1,4}, especially in the cultivation of vegetables due to their action bactericidal, nematocidal, fungicidal and insecticidal^{3,6,10}. Therefore, we evaluated in this study the cytotoxic potential of different extracts of *Tagetes patula* and *Tagetes erecta*. Among the cytotoxicity assessment *Allium cepa* tests because it can be used to determine cytotoxic and genotoxic effects of various types of chemicals, being recognized for its sensitivity and ability to interact with cytotoxic and mutagenic agents at your cell cycle^{2,5}. The level of cytotoxicity of a test compound can be determined based on the increase or decrease in the mitotic index (IM)⁹.

Methods: The cytotoxic activity of *Tagetes* sp extracts was verified by test with seed *Allium cepa*, which were calculated the mitotic index and the chromosomal aberrations index, using aqueous extracts (A), hydroethanolic (H) and ethanolic (E) in concentration of 20mg.mL⁻¹.

Results: It was observed a reduction in *T. erecta* IM (A = 7.66; H = 10.52 and E = 7.44) and *T. patula* (A=11.60, H=13.22 and E=9.04) compared to the negative control (NC=14.52), the most common aberrations were found in cells in anaphase, metaphase and telophase, also was observed a reduction in the number of dividing cells in most treatments performed, indicating inhibitory effect of mitosis in *A. cepa* root cells, with a higher incidence of aberrant cells of *T. erecta* (A=7.66, H=10.52 and E=7.44) and *T. patula* (A=11.60, H=13.22 and E=9.04) when compared to the negative control (NC=0.67) and positive (CP=1.56). Many cells were retained in the interface stage leading to a reduction of cell division rates.

Conclusion: Although these results suggest that extracts of *T. erecta* and *T. patula* have inhibitory effects of the mitosis and cytotoxic on cell division of *A. cepa*, there is need for further investigations cytotoxic, mutagenic and other risk assessments in vivo seeking ensure the use of extracts of these species.

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