TITLE: ANALYSIS *IN VITRO* OF THE ANTIFUNGIC ACTIVITY OF AQUEOUS AND HYDROALCOHOLIC EXTRACTS OF ILEX PARAGUARIENSIS AGAINST *Fusarium* sp.

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ABSTRACT:

Misiones has the largest *Ilex paraguariensi* (yerba mate) plantation of Argentina. The antifungical activity of the yerba mate extracts has been previously reported in the literature. The extraction with solvents is one of the methods more frequently used to concentrate active substances present in plants. The principal disease that affects harvested *Anana comusus*, a crop of great regional importance, is the Fusariosis, caused by a fungical complex of the Fusarium fungi. The objective of the present work was to analyse the antifungic activity of aqueous and hydroalcoholic extracts of *Ilex paraguariensis* against *Fusarium* sp. Green fresh leaves were harvested from the upper middle stratum of *Ilex paraguariensis* St. Hilaire plantations, during the spring-summer seasons. The aqueous extractions were performed according to the Decocción method (FNA SextaEdición). The hydroalcoholic extractions were conducted according to the Maceración and Percolación methods using ethanol 70°, and the resulting solutions were concentrated at 70°C in an oven during 40 h. The dry extract from all the methods tested were used in the preparation of the culture mediums used in the mycelial inhibition tests. The mycelial mediums consisted of ADP, water and dry yerba mate extracts at six different concentrations (50, 100, 200, 300, 400 y 500 mg/mL). An aqueous solution of potassium sorbate (400 ppm) and sodium benzoate(400 ppm) was used as the positive control, while the negative control was the ADP medium alone. Fusarium strains were isolated from *Anana comusus* samples. The mycelial inhibition test was carried out according to the Bautista–Baños method. The mycelial growth inhibition of the isolated Fusarium showed a concentration dependence. The three extractive methods exhibited antifungic activity, however there exist differences between inhibition yields between them.

Keywords: Aqueous extracts, hydroalcoholic extracts, mycelial inhibition, *Ilex paraguariensis. Fusarium sp.*

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[2] INYM (Instituto Nacional de Yerba Mate).