

Evaluation of the antifungal activity of extracts of the aerial parts and roots of *Cenchrus echinatus* against *Aspergillus flavus* and *Aspergillus niger*

Juliana Moura Mendes Arrua<sup>1\*</sup>; Cinthia Mabel Rojas Abraham<sup>1</sup>; Yesica Magaliz Reyes Caballero<sup>1,2</sup>; Carolina Elizabeth Toledo Popoff<sup>1</sup>; Cinthia Carolina Cazal Martínez<sup>1,2</sup>; Francisco Paulo Ferreira Benitez<sup>1</sup>; Andrea Alejandra Arrua Widmer<sup>1</sup>

1 Centro Multidisciplinario de Investigaciones Tecnológicas - Dirección General de Investigación Científica y Tecnológica - Universidad Nacional de Asunción (CEMIT, DGICT, UNA). San Lorenzo – Paraguay

2 Cámara Paraguaya de Exportadores y Comercializadores de Cereales y Oleaginosas – CAPECO. Asunción – Paraguay.

The use of medicinal plants in Paraguay is widespread, many of which do not have their biological activities studied. The *Cenchrus echinatus* is used in popular medicine as a stomach and diuretic, in Brazil it is known as "capim-carrapicho" and in Paraguay as "Kapi'atí". In previous studies, secondary metabolites with potential antimicrobial activity were identified, thus the objective of this work was to determine the antifungal activity against *Aspergillus* potentially producing mycotoxins. The botanical material was extracted from the central region of Paraguay and the ethanolic extracts from the aerial parts (EPA) and roots (ER) of *Cenchrus echinatus* were prepared by exhaustive maceration in ethanol and concentrated in a rotavaporator. This work analyzed the activity of the extracts of *C. echinatus* against strains of *Aspergillus flavus* y *A. niger* by Minimum Inhibitory Concentration (MIC), the Minimum Fungicidal Concentration (MFC) and effect of extracts on the dry mycelial weight. The strains of *A. flavus* (LBAS22, LBAS27, LBAS29) y *A. niger* (LBAS228) belong to the collection of the Biotechnology Laboratory, Multidisciplinary Center for Technological Research, National University of Asuncion (CEMIT- UNA). The MIC was determined by the microdilution method. In a 96-well plate was added Sabouraud Dextrose Broth (SDB) and EPA and ER of *C. echinatus* at 10.000 to 19 µg/mL concentrations and incubated at 28°C for 24-72 hours. The MIC was determined as the lowest oil concentration that inhibited visible growth of microorganisms. To determine the MBC, 10 uL aliquots of cavities where there was no growth of microorganisms were transferred to sterile plates containing 20 mL of Sauborand dextrose agar (ASD). After incubation at 28°C for 24-48 hours. The CFM was considered the lowest concentration seeded plate with ASD in which growth was less than 3 CFU. For effect on dry mycelial weight: In a sterile tube, 4.5mL of SDB with the extracts (10.000 and 5.000 µg/mL) were added 0.5mL of the inocula. The tubes were incubated at 28°C for 5 days. Cultures were filtered through a sterile filter paper and the mycelia were dried. The dry mycelia were weighed and percent of mycelia produced was calculated, considering that control produced 100% of dry mycelia weight. The results show that the MIC and MFC of extracts of the aerial parts and roots of *C. echinatus* were higher a 10.000 µg/mL. The tested concentrations of extracts did not inhibit the mycelial growth of species *Aspergillus* compared with the control. The results obtained in this work demonstrate a low or no antifungal activity of the ethanolic extracts of *Cenchrus echinatus* in *Aspergillus* isolates.

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