



ISBN 978-85-66836-16-5

SECONDARY METABOLITES FROM ENDOPHYTIC FUNGUS FROM *Lippia sidoides* CHAM.¹ / Metabólitos secundários dos fungos endofíticos de *Lippia sidoides* Cham. T.P.S. FERREIRA²; G.R. SANTOS³; C.A. SIQUEIRA²; R.D. POSSEL²; A.M. BARROS²; V.D. CARDOSO³; R.W.S. AGUIAR². ²Biotechnology Bioprocess and Engineering, Federal University of Tocantins, 77402 970, Gurupi, Brazil / ³Agronomy, Federal University of Tocantins, 77402 970, Gurupi, Brazil / e-mail: cupufer@gmail.com

Lippia sidoides (Verbenaceae) is a species native to the Brazilian northeast, widely used in popular medicine. Its leaves were used for the isolation of endophytic fungi and extraction of metabolites. Among them, three were selected according to fungitoxicity tests against the maize phytopathogenic fungus, *Curvularia lunata*. However, the objective of this study was to identify the role of *L. sidoides* extracts associated with their endophytic fungi, necessary to reduce excess of fungicides applied on the maize crop. Metabolites were evaluated for antioxidant activity by 2,2-diphenyl-1-picrylhydrazyl (DPPH), phenols, total flavonoids and one of its endophytic fungus was evaluated for synergism (*Verticillium* sp. and plant extracts). The endophytic fungus and plant extracts evaluated for phenolic content ranged from 0.29 ± 0.05 to 96.94 ± 11.86 mgEAG/g, the content of flavonoids from 14.31 ± 1.56 to 192.33 ± 4.58 mgER/g, and antioxidant activity could only be observed for the plant extract with EC₅₀ $81 \pm 0.3\%$. The secondary metabolites identified by HPLC in the plant extract were catechin, quercetin, gallic acid and naringin. Naringenin, catechin, epigallocatechin gallate and quercetin were identified in the extract of the fungi viz. *Verticillium* sp. and *Fusarium* sp. Synergistic analysis between a 1:1 proportion of plant and fungal extracts has shown more efficient (79.0%) inhibition of *C. lunata*. Thus, alternative control of phytopathogenic fungi can be accomplished using plant extracts associated with their endophytic fungi, reducing the excess of fungicides applied on the maize crop.

Key words: *Curvularia lunata*; HPLC; *Verticillium* sp.; *Fusarium* sp.; *Colletotrichum* sp.

¹Grant information: Laboratory of Scientific Instrumentation, Laboratory Integrated pest management and Laboratory of Phytopathology, University Federal of Tocantins – UFT, CAPES, CNPq.