



### Effect of the essential oil from *Philodendron bippinatifidum* on the production of ochratoxin A by *Aspergillus carbonarius*

Juliana de A. Santiago<sup>1</sup>, Maria das G. Cardoso<sup>1</sup>, Luis R. Batista<sup>2</sup>, Fabiana R. Passamani<sup>2</sup>, Luana I. Soares<sup>1</sup>, Leonardo M. A. Rodrigues<sup>2</sup>, Wilder D. Santiago<sup>1</sup>, David L. Nelson<sup>3</sup>

<sup>1</sup> Departamento de Química, Universidade Federal de Lavras – Minas Gerais, Brazil

<sup>2</sup> Departamento de Ciência dos Alimentos, Universidade Federal de Lavras, Minas Gerais Brazil

<sup>3</sup> Pro-Reitoria de Pesquisa e Pós-Graduação, Universidade Federal dos Vales de Jequitinhonha e Mucuri – Minas Gerais, Brazil  
mgcardoso@dqi.ufla.br

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There is a growing interest in investigating plants as a source of compounds capable of minimizing the negative effects of microorganisms that cause damage to industrial foods and human health. The *Aspergillus carbonarius* (Bainier) Thom fungus, which produces ochratoxin A (OTA), has been found in foods of plant origin (1). The objectives of this study were to characterize the chemical composition and evaluate the effect of the essential oil from *Philodendron bippinatifidum* on the production of OTA by *A. carbonarius*. The essential oil was extracted by hydrodistillation for two hours using a modified Clevenger apparatus. The antiochratoxigenic potential of the essential oil (31.25; 15.62 and 7.81  $\mu\text{L mL}^{-1}$ ) was evaluated by inhibition of the production of ochratoxin A by *A. carbonarius* at 15 °C and at 25 °C. The activity of the essential oil was compared with those obtained for the pure fungus and the fungus with DMSO. The OTA extraction with methanol was performed on the 10th day of the incubation period of the fungal spores (2). The major compounds found in the essential oil were  $\beta$ -bisabolene (65.3 %), *trans*- $\alpha$ -bergamotene (10.0 %),  $\alpha$ -copaene (3.3 %),  $\gamma$ -cadinene (2.8 %) and *ar*-curcumene (2.0 %). The yields of OTA obtained were 8.77 and 2.09  $\mu\text{g g}^{-1}$  (yeast); 6.63 and 1.19  $\mu\text{g g}^{-1}$  (fungus + DMSO); 2.37 and 0.24  $\mu\text{g g}^{-1}$  (31.25  $\mu\text{L mL}^{-1}$ ); 2.61 and 0.56  $\mu\text{g g}^{-1}$  (15.62  $\mu\text{L mL}^{-1}$ ); 2.78 and 1.32  $\mu\text{g g}^{-1}$  (7.81  $\mu\text{L mL}^{-1}$ ) at 15 °C and 25 °C, respectively. Thus, the use of the essential oil from *P. bippinatifidum* caused a reduction in the production by ochratoxin by *A. carbonarius* under the conditions employed in this study.

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