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ABSTRACTS BOOK



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Abstracts Book

Edited by

Alejandra A. Jara

Marjorie Reyes

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Francisco Matus

Paula Cartes

COMBINING ANALYTICAL METHODOLOGIES FOR THE IDENTIFICATION OF *Aspergillus* section *Flavi* STRAINS ISOLATED FROM BRAZILIAN AGRICULTURAL COMMODITIES

Couto F^{1,2,3}, Santos C⁴, Souza T¹, Dias E¹, Lima N³, Batista L^{1,5}

¹Post-graduation Program in Agricultural Microbiology, University of Lavras, P.O. Box 3037, Lavras, MG, Brazil

²CEB-Center of Biological Engineering, Micoteca da Universidade do Minho (MUM), University of Minho, 4710-057, Braga, Portugal

³Federal Institute of Education Goiano/Campus Ceres, GO-154 Road, Km 3, Ceres, GO, Brazil

⁴Department of Chemical Sciences and Natural Resources, Universidad de La Frontera, Av. Francisco Salazar 01145, Temuco, Chile

⁵Department of Food Engineering, University of Lavras, P.O.Box 3037, Lavras, MG, Brazil

The section *Flavi* of *Aspergillus* represents one of the most important sections within this genus. Fungi belonging to this section are well-known as spoilages of stored agricultural commodities. Due to the large genetic variability and the complexity in the morphological identification, the taxonomy of this section has been constantly revised. The present study aims to characterise and identify strains of *Aspergillus* section *Flavi* isolated from different Brazilian agricultural commodities by combining complementary analytical methodologies through the so called polyphasic approach. For macro- and micromorphology analyses, 31 fungal isolates were grown in Czapeck Yeast Agar at 25 °C and 37 °C, Malt Extract Agar and Czapeck Agar at 25 °C. The production of aflatoxins and cyclopiazonic acid were analysed by high-performance liquid chromatography. The analysis of ribosomal proteins was performed by MALDI-TOF MS and the calmodulin gene was further sequenced. Furthermore, 11 type strains obtained from the *Micoteca da Universidade do Minho-MUM* Culture Collection were also used as reference: *A. flavus* (MUM10.232), *A. parasiticus* (MUM 10.201), *A. tamaritii* (MUM00.10), *A. sergii* (MUM 10.219), *A. mottae* (MUM 10.231), *A. transmontanensis* (MUM 10.214), *A. sojae* (MUM 10.241), *A. minisclerotigenes* (MUM 10.203), *A. oryzae* (MUM 10.242), *A. bertholletius* (MUM12.11), and *A. novoparasiticus* (CBS 126849). Overall, 90.3% of the evaluated strains were mycotoxigenics (aflatoxins and cyclopiazonic acid). Results by classical morphology were in agreement with the phylogenetic data obtained of the calmodulin gene. In addition, the results of the MALDI-TOF MS analysis generated a dendrogram different from the molecular biology. However, fungal species were correctly identified by this technique. In conclusion, the use of the proposed polyphasic approach allowed a sound identification of the fungal strains belonging to the section *Flavi*.