Importance of microbial culture collections for food safety research in climate change scenario

Luís Batista [1]; Sara M. C. Souza [2]; Maria Cardoso [1]; José C. Machado [1]; Nelson Lima [3]; Suzana Evangelista [1]; Michelle F. Terra [1]

ABSTRACT

Culture collections (CC) of microorganisms can play an important role in ensuring safe food for the world's population. The preservation of different groups of microorganisms such astoxigenic, pathogenic, phytopathogenic, deteriorating or biotechnological, allows the development of research for their control or use. Then, it is important that these CC use appropriate preservation techniques, species identification criteria rigid and a multidisciplinary specialists group. The Microorganisms Culture Collection of the Department of Food Science (CCDCA / UFLA) of the Federal University of Lavras (Minas Gerais-Brazil) has been developing research projects that value and demonstrate the importance of CC for food safety. Above all, among these researches, the most important ones are:1) Use of essential oils of medicinal plants and condiments in the control of toxigenic fungi; 2) Development of antiseptic with essential oils to control contaminating microorganisms from the hands of food handlers;3) Monitoring of ochratoxigenic fungi in fruits and beans coffee; 4) Fungi prevalent in regional artisanal cheeses in Brazil;5) Fungi and yeasts of the *terroir* microbiota of tropical wines; 6) Evaluation of the expression of genes involved in the synthesis of ochratoxin A as a function of the temperature changes in coffee fruit processing. In projects 3) to 6), climate change certainly will influence food safety. Therefore, CCs are important sources of research to ensure the preservation of microbial biodiversity, and the development of research for production of safe food even in the face of climate change different scenarios. The CCDCA / UFLA is accredited as a Faithful Depositary is a member of the WFCC and registered in the WDCM with the number 1081 and currently has more than 800 strains preserved at -80 ºC, belonging to the genera *Aspergillus*, *Cladosporium*, *Fusarium*, *Penicillium* and *Talaromyces*.

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1 - Federal University of Lavras; 2 - Empresa de Pesquisa Agropecuária de Minas Gerais; 3 - Micoteca da Universidade do Minho, University of Minho