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P5.2 - MYCOBIOTA IN CHILEAN CHILLI *CAPSICUM ANNUUM* L. USED FOR PRODUCTION OF *MERKÉN*

Jéssica Souza da Costa ^a, Rodrigo Rodriguez ^{a,b}, Carla Santos ^b, Célia Soares ^b, Cledir Santos ^a, Nelson Lima ^b

^a Department of Chemical Science and Natural Resource, BIOREN-UFRO, Universidad de La Frontera, Temuco 4811-230, Chile; ^b Micoteca da Universidade do Minho (MUM), CEB-Centre of Biological Engineering, University of Minho, Campus de Gualtar, Braga 4710-057, Portugal

In Chile, *Capsicum annum* L. berry fruits are used for the manufacture of a traditional chilli powder known as *Merkén*. In 2015 the total Chilean exportations of *Merkén* reached 4.4 million US dollars, representing an increase of 11.3% in comparison with 2014. However, in January 2017, the Chilean Ministry of Health reported cases of *Merkén* contamination with mycotoxins. This has put the market of this commodity under risk, directly affecting the revenues of both local producers and industry [1]. Therefore, the main goal of this study was to search for the toxigenic potential of cultivable mycobiota on the early processing stages of chilli used in traditional *Merkén* production.

C. annum samples were provided by 8 farmers from 4 localities of the Chilean Region of La Araucanía. Chilli berry fruits were collected at three different sampling time points of production: i) at the day of harvest; ii) one month after harvest (drying); and iii) during smoking. Berry fruit samples were used for isolation of cultivable mycobiota on MEA, DRBC and DG18 media. Isolated fungal strains were identified at genus level using classical morphology. Subsequently, sequencing of β -tubulin or ITS region was used to identify at species level.

A total of 190 fungal strains were isolated: 59 from sampling point I, 46 from sampling point II, and 85 from sampling point III. Fungi can fall into two possible broad ecological categories: i) field, such as *Alternaria*, *Fusarium* and *Cladosporium*; and ii) storage, such as *Aspergillus*, *Penicillium* and *Eurotium*. In this study, the most prevalent genera were *Penicillium* (58.4%), *Aspergillus* (20.5%), *Alternaria* (7.4%) and *Fusarium* (7.4%). Their relative abundance was variable between sampling points, with abiotic factors, such as water activity, temperature and oxygen concentration, having a role. According to previous studies, aflatoxins, ochratoxin and zearalenone are of great significance in chilli fruits and powder [2-5]. Overall, in the present study, the majority of identified fungal species are not known producers, except for *A. niger* (8.4% of total isolates), *A. flavus* (4.2%) and *P. verrucosum* (0.5%).

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