

Isolation of Mycotoxigenic Fungi and Quantification of Ochratoxin A from Coffee in Ethiopia

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Introduction

Globally, coffee is the second most traded and wealth generating commodity after oil. Ethiopia is known for its diverse and unique Arabica coffee flavors. However, coffee is naturally associated with several mycoflora and some of them may produce Ochratoxin A unless careful handling measures taken place.

Materials/Methods

A total of 75 coffee samples were collected from three districts of West Wollega Zone, Oromia regional state of Ethiopia. Malt Extract Agar (MEA) was used for isolation of mycoflora associated with coffee and ELISA kit was used to detect and quantify Ochratoxin A from green coffee bean.

84.67 90 Percentage of coffee bean 80 70 associted fungi 60 50 40 30 20 7.37 6.74 10 1.5 0 Penicilium **Fungal** genara



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Results/Discussion

Aspergillus niger was the most dominant (73.37%) species detected from most coffee samples, followed by Aspergilusochracious (11.30%), Fusarium spp. (7.37%), Penicillium spp. (6.74%), and Rhyzopus spp.(1.50%), respectively. Average ochratoxin A recorded was 0 (ND) ppb, 1.24 ppb and 2.02 ppb from Haru, Homa and Nedjo. The average detected ochratoxin A from total of tested 75 coffee samples was 1.09µg/kg (1.09 ppb).

Conclusion/Perspectives

The quantity of Ochratoxin A produced by mycoflora associated with Ethiopian coffee was $1.09 \ \mu g/kg \ ppb(1.09 \ ppb)$ Which is a vary good quality compared to maximum tolerable limit set by some countries introduced national limits on OTA in Green Coffee bean , (Italy,8 ppb; Finland,10 ppb; Greece,20 ppb ;Switzerland , 5 ppb and) source, ISO (2005).

References:

Pandit, P., Panta, O.P. and Karki, T.B., (2014). Isolation of Aspergillus ochraceus and Production of Ochratoxin in Coffee Samples. Nepal Journal of Science and Technology, 15: 133-138. https://www.nepjol.info/index.php/NJST/article/view/12030