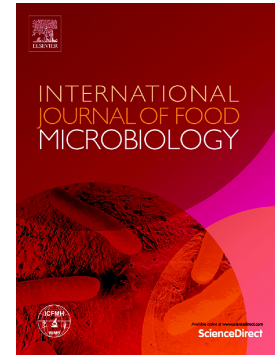


Accepted Manuscript

Aspergillus section Flavi community structure in Zambia influences aflatoxin contamination of maize and groundnut

Paul W. Kachapulula, Juliet Akello, Ranajit Bandyopadhyay, Peter J. Cotty



PII: S0168-1605(17)30358-6
DOI: doi: [10.1016/j.ijfoodmicro.2017.08.014](https://doi.org/10.1016/j.ijfoodmicro.2017.08.014)
Reference: FOOD 7663

To appear in: *International Journal of Food Microbiology*

Received date: 10 May 2017
Revised date: 14 August 2017
Accepted date: 18 August 2017

Please cite this article as: Paul W. Kachapulula, Juliet Akello, Ranajit Bandyopadhyay, Peter J. Cotty, *Aspergillus* section Flavi community structure in Zambia influences aflatoxin contamination of maize and groundnut, *International Journal of Food Microbiology* (2017), doi: [10.1016/j.ijfoodmicro.2017.08.014](https://doi.org/10.1016/j.ijfoodmicro.2017.08.014)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

***Aspergillus* section *Flavi* community structure in Zambia influences aflatoxin contamination of Maize and Groundnut**

Paul W. Kachapulula^{a,b}, Juliet Akello^c, Ranajit Bandyopadhyay^d and Peter J. Cotty^{a,e*}

^aSchool of Plant Sciences, University of Arizona, Tucson, AZ 85721.

^bSchool of Agricultural Sciences, University of Zambia, P.O Box 32379, Lusaka

^cInternational Institute of Tropical Agriculture (IITA), Lusaka, Zambia.

^dInternational Institute of Tropical Agriculture (IITA), PMB 5320, Ibadan, Nigeria.

^eUSDA-ARS, School of Plant Sciences, University of Arizona, Tucson, AZ 85721.

*Corresponding author at: The University of Arizona, School of Plant Sciences, Tucson 85721, USA.

Tel.: +1 520 626 6775; fax: +1 520 626 5944. E-mail address: pjcotty@email.arizona.edu (P.J. Cotty).

Abstract

Aflatoxins are cancer-causing, immuno-suppressive mycotoxins that frequently contaminate important staples in Zambia including maize and groundnut. Several species within *Aspergillus* section *Flavi* have been implicated as causal agents of aflatoxin contamination in Africa. However, *Aspergillus* populations associated with aflatoxin contamination in Zambia have not been adequately detailed. Most of Zambia's arable land is non-cultivated and *Aspergillus* communities in crops may originate in non-cultivated soil. However, relationships between *Aspergillus* populations on crops and those resident in non-cultivated soils have not been explored. Because characterization of similar fungal populations outside of Zambia have resulted in strategies to prevent aflatoxins, the current study sought to improve understanding of fungal communities in cultivated and non-cultivated soils and in crops. Crops (n=412) and soils from cultivated (n=160) and non-cultivated land (n=60) were assayed for *Aspergillus* section *Flavi* from 2012 to 2016. The L-strain morphotype of *Aspergillus flavus* and *A. parasiticus* were dominant on maize and

Download English Version:

<https://daneshyari.com/en/article/5740576>

Download Persian Version:

<https://daneshyari.com/article/5740576>

[Daneshyari.com](https://daneshyari.com)