

**Title** Occurrence of *Fusarium* species and trichothecenes in Nigerian maize  
**Author** Timothy O. Adejumo, Ursula Hettwer and Petr Karlovsky  
**Citation** International Journal of Food Microbiology, Volume 116, Issue 3, 30 May 2007, Pages 350-357  
**Keywords** *Fusarium* mycotoxins; *Fusarium graminearum*; *Fusarium verticillioides*; Deoxynivalenol; Diacetoxyscirpenol; Nigeria

### Abstract

A total of 180 maize samples meant for human consumption from four maize-producing states of southwestern Nigeria were screened for twelve major *Fusarium* mycotoxins (trichothecenes). Mycological examination of the samples showed that *Fusarium verticillioides* was the most commonly isolated fungi (71%), followed by *F. sporotrichioides* (64%), *F. graminearum* (32%), *F. pallidoroseum* (15%), *F. compactum* (12%), *F. equiseti* (9%), *F. acuminatum* (8%), *F. subglutinans* (4%) and *F. oxysporum* (1%). The trichothecenes include deoxynivalenol (DON), 3, mono-acetyldeoxynivalenol (3-AcDON), 15, mono-acetyldeoxynivalenol (15-AcDON), nivalenol (NIV), HT-2 toxin (HT-2), neosolaniol (NEO), T-2 toxin (T-2), T-2 tetraol and T-2 triol, diacetoxyscirpenol (DAS), MAS-monoacetoxyscirpenol (MAS) and fusarenone-X. Quantification was by high performance liquid chromatography coupled with mass spectroscopy (HPLC/MS); the detection limits for each of the mycotoxins varied between 20 and 200  $\mu\text{g kg}^{-1}$ . Sixty six samples (36.3%) were contaminated with trichothecenes, DON (mean: 226.2  $\mu\text{g kg}^{-1}$ ; range: 9.6–745.1  $\mu\text{g kg}^{-1}$ ), 3-AcDON (mean: 17.3  $\mu\text{g kg}^{-1}$ ; range: 0.7–72.4  $\mu\text{g kg}^{-1}$ ) and DAS (mean: 16.0  $\mu\text{g kg}^{-1}$ ; range: 1.0–51.0  $\mu\text{g kg}^{-1}$ ) were detected in 22%, 17% and 9% of total samples respectively. There were no 15-AcDON, NIV, HT-2, NEO, T-2, T-2 tetraol, T-2 triol, MAS and fusarenone-X detected. This is the first comprehensive report about the natural occurrence of DON, AcDON and DAS in maize for direct human consumption in Nigeria.

[http://www.sciencedirect.com/science?\\_ob=MIimg&\\_imagekey=B6T7K-4N5CX4H-3-1&\\_cdi=5061&\\_user=131617&\\_orig=browse&\\_coverDate=05%2F30%2F2007&\\_sk=998839996&view=c&wchp=dGLbVlz-zSkWW&md5=dcblb999b54ab641e2d1f25d9e9674cf&ie=/sdarticle.pdf](http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6T7K-4N5CX4H-3-1&_cdi=5061&_user=131617&_orig=browse&_coverDate=05%2F30%2F2007&_sk=998839996&view=c&wchp=dGLbVlz-zSkWW&md5=dcblb999b54ab641e2d1f25d9e9674cf&ie=/sdarticle.pdf)