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# **Czech J. Food Sci.**

**Lacmanová I.,  
Pazlarová J.,**

**Kosteřanská M.,  
Hajšlová J.:**

## **PCR-based identification of toxinogenic *Fusarium* species**

Czech J. Food Sci., 27 (2009): 90-94

Aim of this study was to develop sensitive PCR assay for mycotoxin producing *Fusarium* species. Strains *Fusarium oxysporum* 4199 and *Fusarium culmorum* 4044 were used as representatives of this group. Primers JB chosen to demonstrate the affiliation to genus *Fusarium* were derived from ITS region of rDNA. Gene from trichothecene pathway *Tri4* was employed to design primers for toxin biosynthesis. Specificity of PCR based on JB primers was tested on DNA isolated from *F. culmorum* 4044, *F. oxysporum* 4199, *Aspergillus oryzae* 4002 and *Mucor circinelloides* 4018, *Trichoderma* sp. Both *Fusarium* species gave positive reaction, while the later ones did not react. Primers based on *Tri4*

highly specific sequences were giving positive reaction only with DNA from *F. culmorum* 4044 and *F. oxysporum* 4199. DNA isolated from six samples of contaminated wheat grains gave positive result on the presence of genus *Fusarium* and mycotoxines by optimised PCR protocol using JB and *Tri4* primers. The results corresponded to LC/MS analysis that was established quantitatively in all samples to ascertain the amount and type of fusarious mycotoxines.

### **Keywords:**

toxinogenic *Fusarium*; trichothecenes; PCR; JB primers; *Tri4* primers

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