

## QUANTITATIVE DETECTION OF FUSARIUM IN GRAIN OF WHEAT PLANTS INFECTED AT DIFFERENT DEVELOPMENTAL STAGES

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Several DNA-based methods have recently been developed to detect and quantify the presence of mycotoxigenic fungi from complex substrates. In particular, real-time PCR based analyses enable the tracking of fungal nucleic acids in wide range of samples, allowing quantitative diagnosis of pathogen levels in different plant tissues during the growing season, in grains after harvest, in food and feed (Terzi et al., in press). Both generic PCR assays as well as species-specific PCR assays that target *Fusarium* species associated with FHB in small grain cereals have been developed.

In this work three common wheat varieties (Bilancia, Centauro and Sagittario) and three durum wheat varieties (Duilio, Simeto and San Carlo) were artificially inoculated in different stage of development with strains of *Fusarium graminearum* and *Fusarium culmorum* isolated from seeds collected in bread wheat fields in Italy (Emilia-Romagna) and PCR-characterised for chemotype.

A PCR real time approach has been used to monitor and quantify the presence of *Fusarium graminearum* and *culmorum* in mature grain tissues of these plants to evaluate the opportunity of using this analytical tool for early diagnosis.

TERZI V. MORCIA C., FACCIOLI P., FACCINI N., ROSSI V., CIGOLINI M., CORBELLINI M., SCUDELLARI D., DELOGU G. 2006. *Fusarium* DNA traceability along the bread production chain. International Journal of Food Science and Technology, in press