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Czech J. Genet. Plant Breed.

**Štočková L., Stehno Z.,
Capouchová I.:**

**Evaluation of
resistance to *Fusarium*
head blight in spring
wheat genotypes
belonging to various
Triticum species**

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149-156

Response of 35 spring wheat varieties and lines (of four *Triticum* species) to spray inoculation with *Fusarium culmorum* was evaluated in field experiments over three years (2010–2012). Data on mycotoxin deoxynivalenol (DON) content were complemented by symptom scores and determination of the percentage of *Fusarium* damaged kernels and percent reduction of thousand grain weight and of grain weight per spike due to infection. Resistance to *Fusarium* head blight (FHB) determined on the basis of

the five mentioned traits was variable in all the examined genotype groups and very high only in the non-adapted check variety Sumai 3. The common wheat landrace Červená perla, four *T. dicoccum* genotypes (May Emmer, Weisser Sommer, Tábor, and Rudico), *T. spelta* (Ruzyně), and the commercially grown bread wheat variety Vánek can be considered as moderately resistant to FHB. DON accumulation was significantly higher in the modern common wheat varieties than in the other *Triticum* species and common wheat landraces. The latter nonetheless showed similar average reductions in grain weight per spike due to infection as did current spring wheat varieties. It is particularly important that DON content was found to be low and least variable not only in Sumai 3 but also in some *T. dicoccum* (Rudico and Tábor) and *T. spelta* (Ruzyně) genotypes. It was documented that FHB-resistant emmer and spelt wheat materials have some outstanding grain-quality parameters (e.g. very high protein content) and can be progressively utilized particularly in breeding wheat for alternative use and growing in organic

planting systems. It is important to make substantial progress towards developing resistance in common spring wheat, because most current varieties other than Vánek and Trappe were found to be moderately susceptible or susceptible to FHB.

Keywords:

common wheat; DON content; einkorn; emmer; *Fusarium culmorum*; head blight resistance; spelt

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