

Title The occurrence of toxigenic *Fusarium* fungi in grain of winter rye and triticale as affected by fungicide use

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Abstract

Experiments conducted at the Lithuanian Institute of Agriculture in 2004 were designed to investigate the contamination of grain of winter rye 'Duoniai' and triticale 'Tornado' with *Fusarium* fungi and mycotoxins produced by them, as affected by spraying the crops with the fungicides propiconazole, tebuconazole, and azoxistrobine at the beginning of anthesis (BBCH 63). We analysed winter rye and triticale grain samples for *Fusarium* species composition, and in rye grain we detected *F. avenaceum* (Fr.) Sacc., *F. sporotrichioides* Sherb., *F. poae* (Peck) Wollenw., *F. culmorum* (W. G. Sm.) Sacc., *F. graminearum* Schwabe, *F. solani* (Mart.) Sacc., *F. incarnatum* (Desm.) Sacc. And *F. sambucinum* Fuckel. In triticale grain we detected *F. culmorum*, *F. poae* and *F. heterosporum* Nees. The grain samples from winter rye plots sprayed with azoxistrobine were the most heavily affected by *Fusarium* (42.5%) and the highest contents of DON (691 $\mu\text{g kg}^{-1}$) and T-2 toxin (153.6 $\mu\text{g kg}^{-1}$) were identified in them. In the control treatment only 18.3% of grains were affected by *Fusarium* and lower contents of DON (69 $\mu\text{g kg}^{-1}$) and T-2 toxin (22.8 $\mu\text{g kg}^{-1}$) were determined. Tebuconazole reduced the amount of *Fusarium*-affected grain by 14.3%, but had no effect on mycotoxin production. Propiconazole and azoxistrobine had no effect on the spread of *Fusarium* in triticale grain; however, tebuconazole reduced the amount of the *Fusarium*-contaminated grain from 5.8 to 1.5%. The grain of triticale not sprayed with fungicides was more heavily contaminated with DON (427 $\mu\text{g kg}^{-1}$).