The Influence of *Fusarium* Ear Infection on the Maize Yield and Mycotoxin Content (Transylvania-Romania)

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**SUMMARY**

Maize is the host for a large number of pathogens, which invade all of its organs from the germination until the harvest, ear and grain infection often remain even during the storage. Diseases, through their symptoms reduce significantly the quantity and the quality of the yield, estimated between 7 - 17% but, in the favorable years for the diseases, they can be much greater. Fuzarienne diseases reduce yield value and quality by massive accumulation by mycelium biomass of *Fusarium* (about 85%) on the grain and ears and by mycotoxin contamination such as deoxynivalenol (DON) zearalenone (ZEA) and fumonisin. In the paper are presented aspects regarding the reaction of some maize hybrids under *Fusarium spp.*

natural and artificial infections; the effect of *Fusarium* ear infection on the yield, grain chemical composition, and mycotoxin content; the correlation between ear rot diseased degree and yield ability and starch, protein and fat content.

ANOVA evidenced the significant influence for experimental factors: infection conditions with *Fusarium spp.*, genotypes, and their interaction on the diseased degree, yield capacity, protein, starch, fat, DON content. Ear diseased degree with *Fusarium* spp. affected yield ability, grain chemical composition and DON content, for almost maize hybrids which were tested.

Average yield losses ranged between 7,0 - 9,3% during the testing period. The hybrids Turda Star, and Turda Favorit are more tolerant to *Fusarium* ear rot, and Turda 165 is most susceptible. The artificial infection of ear with *Fusarium* spp. determined significantly decrease of starch and fat content and increase the protein and DON content for most part of maize hybrids. Between the analyzed parameters: *Fusarium* diseases degree, yield ability, starch and fat content, there are negative and significantly correlations. Between rot diseased kernels and DON content a positive correlation was determined. *Fusarium* ear rot modified chemical composition of maize kernels and increase DON content affecting the quality of yield, especially for susceptible genotypes.