Abstract:

Fifteen wheat varieties commercially grown in Kenya were tested for their susceptibility to head blight and mycotoxin accumulation after inoculation with Fusarium gramineanuu in pot experiments. The strain or the pathogen used had been isolated from wheat collected in different growing areas or Kenya. Head blight susceptibility was assessed as the percentage or spikelets bleached and area under disease progress curve: kernel colonization by fungal mycelium was determined as ergosterol content. All varieties were round to be moderately to highly susceptible. However, the varieties differed in head blight susceptibility (29-68% or spikelets bleached; mean 54%). fungal colonization (67-187 l'g g ergosterol content: mean III l'g g) and the resulting mycotoxin contamination [deoxynivalenol (DON) 5-31 l'g g: mean 13.5 l'g g], Grain weight reductions due to head blight ranged from 23 to 57% (mean 44%). The varieties could be therefore divided into partially resistant and highly susceptible genotypes. The kernels or highly susceptible varieties had higher mycotoxin and ergosterol contents. However, the kernels or some varieties contained more fungal mycelium (ergosterol) without the corresponding high amounts or DON, suggesting that they possess some resistance to DON accumulation. Less susceptible varieties showed resistance to fungal spread as indicated by a slow disease development and lower content or fungal biomass.