

Abstract:

Fifteen wheat varieties commercially grown in Kenya were tested for their susceptibility to head blight and mycotoxin accumulation after inoculation with *Fusarium graminearum* in pot experiments. The strain of the pathogen used had been isolated from wheat collected in different growing areas of Kenya. Head blight susceptibility was assessed as the percentage of spikelets bleached and area under disease progress curve; kernel colonization by fungal mycelium was determined as ergosterol content. All varieties were found to be moderately to highly susceptible. However, the varieties differed in head blight susceptibility (29-68% of spikelets bleached; mean 54%), fungal colonization (67-187 µg/g ergosterol content; mean 112 µg/g) and the resulting mycotoxin contamination [deoxynivalenol (DON) 5-31 µg/g; mean 13.5 µg/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 of highly susceptible varieties had higher mycotoxin and ergosterol contents. However, the kernels of some varieties contained more fungal mycelium (ergosterol) without the corresponding high amounts of 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 of fungal biomass.