

Abstract:

The study was carried out during the 2006 cropping season in Nakuru district, Kenya. Incidence and severity of head blight were determined and pathogens isolated from diseased wheat heads, wheat and maize kernels. Mycotoxin deoxynivalenol content in grain was determined by direct competitive Enzyme-Linked Immunosorbent Assay (ELISA). Pathogenicity of different *Fusarium* species isolated from wheat was determined by inoculation onto wheat ears in greenhouse. Head blight was highly prevalent (90-100%) and mean incidence and severity ranged from 4 to 9% and 15 to 37%, respectively. *Fusarium* was most prevalent in infected wheat heads while *Epicoccum* was most prevalent in harvested wheat grain. Only *Fusarium* spp. and *Penicillium* spp. contaminated harvested maize grain. The most frequently isolated *Fusarium* species were *F. poae*, *F. graminearum* and *F. chlamydosporum* in wheat and *F. verticilloides* in maize. Most wheat and maize grain samples were contaminated with mycotoxin (DON), with concentration ranging from 0-1,200 and 0-4,600 $\mu\text{g kg}^{-1}$, respectively. *Fusarium graminearum* isolates were highly pathogenic, significantly reducing kernel weight. The results suggest that head blight in Nakuru district is due to a complex of *Fusarium* species with *F. graminearum* being the major pathogen. Cross-contamination of wheat and maize is implied, indicating possible contamination of wheat maize products with deoxynivalenol mycotoxin.