ABSTRACT

Background: Maize is the stable food in Kenya. However, its production has been jeopardized by the high prevalence of fungi in most developing countries and the whole world at large. Some fungi produce mycotoxins which threaten human lives.Methods: This study aimed at isolating fungi from selected Counties in Kenya. Maize samples were ground using a kitchen blender and cultured on Potato Dextrose agar at 28°C for 7d. The fungal isolates were identified using morphological and cultural characteristics. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 25.0 software.Result: The mean fungal isolates varied from 10.8±0.2 CFU/g in Wallenia spp. to 47.4±0.2CFU/g in Aspergillus Spp. The most common fungal isolates were Aspergillus spp., Fusarium spp. and Penicilium spp. The Mean fungal isolates from the selected Counties varied from Kitui (9.6±0.2 CFU/g), Machakos (9.7±0.3CFU/g), Bungoma (25±0.1CFU/g), Migori (25.3±0.3CFU/g), Kericho (25.3±0.2CFU/g), Kisumu (27.1±0.1CFU/g), Meru (27.1±0.2CFU/g), Kisii (28.5±0.1CFU/g) and Trans-Nzoia (30.1±0.3CFU/g). The number of spores in maize samples from baskets varied from 13.6±0.2-19.6±0.2, polypropylene (24.0±0.2-24.0±0.2), Jute (13.6±0.2-21.6±0.2) and polythene bag (48.0±0.2-72.0±0.2) CFU/g.Conclusion: This study established that maize in the selected Counties is highly contaminated by pathogenic fungi. The most prevalent fungal spp. were Aspergillus, Penicillium and Fusarium. The best maize storage material for maize were baskets. There is need of identifying the most prevalent fungi up to the molecular level.