

Management of *Fusarium* Head Blight of Wheat and Deoxynivalenol Accumulation Using Antagonistic Microorganisms

[G.M. Riungu](#), [J.W. Muthomi](#), [R.D. Narla](#), [J.M. Wagacha](#) and [J.K. Gathumbi](#)

Abstract: Laboratory and green house studies were conducted at the Faculty of Agriculture, University of Nairobi, to evaluate the efficacy of *Epicoccum* sp., *Alternaria* sp., *Trichoderma* sp. and *Bacillus* sp. in control of *Fusarium* head blight of wheat caused by *F. graminearum*. Fungicides folicur[®] and copper oxychloride were used as standard checks. Laboratory assay was carried out by paired cultures and antagonism was measured as reduction in pathogen colony diameter. Green house experiments involved dual inoculation of pathogen and antagonist onto wheat ears and head blight severity and **grain yield** determined. Deoxynivalenol content in the resulting grain was determined by competitive direct ELISA. The antagonists and fungicides significantly reduced the growth of *Fusarium graminearum* colonies in culture. Folicur[®] and copper oxychloride completely inhibited the growth of the pathogen while *Trichoderma* sp. showed 64% colony growth reduction. However, the antagonists showed limited reduction in head blight severity in green house trials. *Trichoderma* sp. reduced head blight severity by 18% while folicur[®] reduced the disease by 28%. All the antagonists had little or no significant effect on **grain yield**. Only folicur[®], copper oxychloride and *Alternaria* sp. reduced DON in grain by 76 to 93%. Obtained results indicate that microbial antagonists may offer potential benefit in FHB management and screening of more antagonists both under controlled and field conditions is necessary.