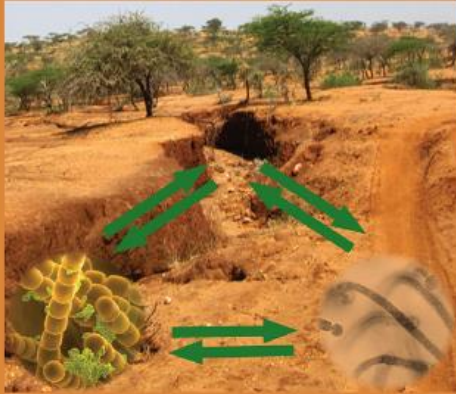


## Microbes in Land Use Change Management



Edited by  
Jay Shankar Singh  
Shashank Tiwari  
Chhatarpal Singh  
Anil Kumar Singh

## Molecular technologies for the early detection of fungal phytopathogens associated with cereal crops

6

*N. Deepa<sup>1</sup>, Charith Raj Adkar-Purushothama<sup>2</sup> and M.Y. Sreenivasa<sup>1</sup>*

<sup>1</sup>Department of Studies in Microbiology, University of Mysore, Mysore, India, <sup>2</sup>Pavilion for Applied Cancer Research, Department of Biochemistry, Faculty of Medicine and Health Sciences, Sherbrooke University, Sherbrooke, QC, Canada

### 6.1 Introduction

Phytopathogens are present in all the cereal growing regions of the world, and it not only affects the growth and seedling survival but also reduces the quality and production of cereals (Brown et al., 2011; Weiss et al., 1987). It is estimated that the effect of phytopathogens on cereals leads to great economic loss up to hundred billion dollars every year. Nearly 70%–80% of crop diseases are by fungal phytopathogens causing significant reduction in yield and quality of cereal crops, fruits and vegetables. Association of fungal phytopathogens with cereals and due to secretion of variety of metabolites and toxins they are harmful to humans and animals posing threat to agricultural products as become unfit for human consumption (Christensen and Kaufmann, 1969; Goyal and Prasad, 2010). Cereals contaminating fungi are broadly classified into field fungi and storage fungi where *Fusarium*, *Curvularia*, *Alternaria*