

# Preface

Mycotoxins are produced by fungi as secondary metabolites in cereals and food. These chemical compounds are lipid-soluble, and easily absorbed by the intestines, airways and skin. In recent years, the risk due to mycotoxins is increasing particularly in food and feed, resulting in deterioration of human and animal health. The contamination of food by mycotoxins has become a matter of great concern, as these are responsible for many lethal diseases like cancer and other chronic diseases. According to an estimate, 25% of the world's crops are affected by toxigenic fungi. Mycotoxins have become part of the food chain. Reduction of these toxins requires a multifaceted approach, including action by farmers, government agencies, food processors and scientists. There are more than 400 compounds known as mycotoxins. Mycotoxins released by molds occurring in damaged buildings in an indoor environment are also hazardous to health. Among these, aflatoxins produced by *Aspergillus flavus* are well-known in the world. Other mycotoxins include citrinin, ochratoxin, patulin, trichothecene, and zearalenone.

Another area of mycotoxins which warrants attention is their use in bioweapons. The T-2 mycotoxins (trichothecene), usually produced by *Fusarium* species, are used as bioweapons during war, since mold-toxins are cheap, easy to access and can be applied for a small group of enemies. Other fungi which produce trichothecens are *Myrothecium*, *Trichoderma*, and *Stachybotrys*. As a matter of fact, it is very important to understand the symptoms of mycotoxin infection for rapid identification, in order to inactivate its ill-effects on patients.

There is a pressing need for strict regulations in order to manage mycotoxins. A strategy should be developed collectively by farmers, scientists, clinicians and policy-makers to combat the mycotoxin menace for a sustainable future. In fact, the mycotoxin menace to human beings and animals has generated the idea to bring out this book, in which efforts have been made to gather diverse topics on mycotoxin with up-to-date information.

Broadly divided into three sections and 22 chapters, this book is aimed at the diverse backgrounds of students and researchers. Section I focuses on general topics, Section II concentrates on the role of mycotoxins in agriculture and food, and Section III deals with toxicity and the use of mycotoxins as bioweapons.

The book would be essential reading for mycologists, agriculture scientists, clinicians, fungal technologists, microbiologists, both plant and human pathologists, pharmacologists and forensic scientists, who may be interested to unravel the mysteries of toxicity of mycotoxins in food, feed and bioweapons.

We thank Dr. Jutta Lindenborn, Springer, Heidelberg, Germany for her patience and suggestions. MKR is thankful to Professor Dr. György János Kövics, Head, Plant Protection Department, Debrecen Agriculture University, Debrecen, Hungary for providing necessary facilities for editing and finalizing the manuscript during my visit to his institute. Further, MKR wishes to thank Alka Karwa, Aniket Gade, Ravindra Ade, Avinash Ingle, Dnayeshwar Rathod, Vaibhav Tiwari, Alka Yadav and Jayendra Kesharwani for help in editing.

April 2009  
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and Noida, Uttar Pradesh

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<http://www.springer.com/978-3-642-00724-8>

Mycotoxins in Food, Feed and Bioweapons

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2010, XVIII, 405 p., Hardcover

ISBN: 978-3-642-00724-8