

PREFACE

It is well known that plants, microbes and animals are being affected by the environmental changes at each and every moment of their lives. Among these three, the plants and microbes are very much important because they form the base of food chain in every ecosystem. To cope up with the continuously changing environment, both plants and microbes alter or modify their life supporting processes in such a way not only to survive against the changed environment but also to develop such strategies so that they would be able to control or monitor the environmental stresses and provide protection and better life to the animals and humans in terms of food, fodder and shelter.

Day by day, so many new technologies are developing to obtain improved varieties of plants and microbes which are resistant to environmental changes. These days, researches are being done mainly to regulate the environmental disharmonies created by the humans, explore some new ideas for detoxification of hazardous materials and maintenance of pollution free environment.

In addition, so many other plants and microbes based practices do also exist that genuinely help to minimize the pollution created by industries. Out of these processes, much emphasis has been given to biodiversity and bioprospecting to acquire plants and microbes with beneficial properties such as, antimicrobial activities, metal and pesticide resistance, more quality food products and medicinal value.

Therefore, considering these problems, I am compiling this book which covers all the facets of problems imposed by the environment on the plants and microbes and also discusses the mechanisms usually adapted by these two organisms to tolerate contaminated environment. Furthermore, the book describes the abilities of the plants and animals to maximize their products in the changed environment not only to improve the today's life of the human beings but also to ensure the better life of the future generations.

Thus, plants and microbes, due to the extreme plasticity in their behavior, play a significant role in environmental management. Because of the landmark importance of the plants and microbes in our lives, this book is aimed to elucidate all the recent developments and progresses occurring in the field of agriculture, medicine, food and pharmacology.

This book includes 20 chapters contributed by the author (s) having proficiency in teaching and research in the area of plant, microbial and environmental science.

The book is comprised of three different and distinct sections. The first section deals with the facts related to environmental toxicity and tolerance among the plants and microbes and also their bioremediation potential. Second section describes the distribution patterns of

microbes and plants at diverse habitats. Eventually, the third section presents the medicinal values of plants and microbes occurring different environmental conditions.

The skillful description about various ultramodern and brand new technologies generally utilized in the field of plant and microbial research with innovative ideas certainly make this book more appropriate for B.Sc., M.Sc. and Ph.D. students to gain insight into the world of research.

I owe my deep felt gratitude to my parents whose blessings and constant encouragement have always inspired me in the completion of this task.

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