

PLANT-ASSOCIATED BACTERIA

Plant-Associated Bacteria

Edited by

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PREFACE

The idea of developing a comprehensive volume on PLANT-ASSOCIATED BACTERIA was born in my mind about 5 years back. I decided therefore that the proposed volume on Plant-Associated Bacteria will be a complete volume on plant bacteriology. There are several books on symbiotic and beneficial bacteria. There are also books and volumes on plant pathogenic bacteria. In recent years, the plant-growth promoting rhizobacteria (PGPR) has emerged as an important group which has significant applications to crop production and biological disease control. There is a vital need for a comprehensive volume on all plant-associated bacteria that also includes epiphytic and endophytic bacteria. In my mind, the proposal appeared worthwhile and timely.

In the present era of genomics, there has been an enhanced interest in the genomics of the plant-associated bacteria (Example: the Plant-Associated Microbe Genome Initiative, American Phytopathological Society—[www.apsnetorg/ media/ ps/top.asp](http://www.apsnetorg/media/ps/top.asp)). Traditional methods of identification of bacteria have been replaced by molecular methods for diagnostics and their phylogeny. This volume tries to carefully document both the traditional and recent methods. To achieve this, the contributors have been chosen from among the best experts to provide updated information for a reader who has specific expectations in a volume of this nature. Today, readers want specific and detailed information in a narrow area and there are those who want information on broad themes with adequate information on all different groups of bacteria with links and citations. There are several volumes (perhaps there are several others in the making) which could fulfill the first category. This volume belongs to the second category, a resource manual and justifiably, a reference volume.

It is hard to find volumes on broad themes. The volume of Plant-Associated Bacteria has been designed to cover the whole theme of plant bacteriology. Recent advances on all the different groups of bacteria that are associated with the phylloplane and rhizosphere have been dealt with and described whether they are beneficial (symbiotic/diazotrophic), epiphytes, endophytes or pathogens of the plants. It is my hope that a reader who is looking for information either on beneficial or pathogenic bacteria of plants, he/she finds the information in this volume with adequate details. If the reader is a researcher who needs detailed coverage of individual groups of bacteria, their strains, molecular biology and improvement, the volume devotes substantial portions of information on each aspect. This volume can be a reference material which chronicles both the traditional information on aspects such as methods of identification and the new/recent molecular methods. Therefore, it should fill the need for a good resource volume both for research students and scientists.

SAM S. GNANAMANICKAM
Editor

ACKNOWLEDGEMENT

I am deeply grateful to all the contributors. Each one brings a great deal of expertise and yet it was a very cordial experience in relating to work that went into developing this volume by assembling eighteen contributions made by these able men and women.

I am very thankful to my research associates who took a heavy share of the work. In particular, Dr. Boney Kuriakose, Dr. V. Arun and Dr. J. Ebenezar Immanuel are acknowledged for the help they rendered.

A great deal of encouragement was afforded to me by Dr. Gwyn Beattie, Dr. Tim Denny and Dr. Cindy Morris. I appreciate these sources of strength and encouragement.

Dr. Hari B. Krishnan USDA-ARS at U. of Missouri-Columbia readily lent his picture that is featured on the book's cover to represent a nodulating *Sinorhizobium* on *Erythrina* sp. I am thankful for this courtesy.