

BOOK REVIEW**Title: Fundamental Agricultural Microbiology****Author: K.R.Aneja****Publisher: New Age International (P) Limited,
Publishers London, New Delhi, Nairobi****Year of Publication: 2017****Price: Rs. 399/-**

The book entitled “ Fundamental Agricultural Microbiology” by Dr. K.R. Aneja, former Professor & Head Department of Microbiology, Kurukshetra University, Kurukshetra, is an excellent exposition of the study material on fundamental characteristics of the microbes covering various aspects related to agriculture including emphasis on understanding their role in crop biotechnology, bioremediation, pest management and other such applied aspects. The book has been nicely designed to cover the subject requirements of UG and PG students of Agricultural microbiology. Due care has also been taken by the author while writing the text of this book to incorporate the subject material for the aspiring students of Agriculture especially those preparing for various ICAR and ASRB competitive examinations. The best part of this treatise is the multiple choice questions along with their answer key's and review questions covering the latest available information on basic and applied aspects of microorganisms with emphasis on their role in agriculture which form an inherent component of the book at the end of every chapter. In all the subject matter of the book has been presented in 14 well written chapters with in-depth course material along with illustrations in which due care has been taken to incorporate the new developments that has taken place in the field of agricultural microbiology in the past decade. In the first two chapters scope and recent developments in agricultural microbiology has been discussed in an exhaustive manner. In the following three chapters diversity and taxonomy of bacteria, archaea, viruses, viroids and prions has been given along with their classification and descriptions. The chapter 6 covers the structural, functional and reproductive aspects of the microbes. Next two chapters are devoted to principles of microbial ecology and physiology wherein aspects covering microbial nutrition, growth and metabolism has been given a due emphasis. In chapters 9 and 10 overview of the subject matter pertaining to microbial genetics and microbial biotechnology covering fundamental aspects of DNA replication, mutations, gene transfer mechanisms, recombinant DNA technology, and role of microbes in

large scale production of various industrially important products including organic acids, alcohols, amino acids, enzymes, vitamins, single cell proteins, edible mushrooms, etc. have been discussed in detail. Chapter 11 focusses on various aspects of food microbiology including food spoilage and food preservation techniques so as to prolong the shelf life of the food items. The chapter 12 of the book is exclusively devoted to soil microbiology wherein role of microbes in plant productivity, decomposition of the organic matter, biogeochemical cycling, bioremediation, mycorrhizal symbiosis, nitrogen fixation, as bioinsecticides, biofungicides, bioherbicides, etc. has been dealt in great details. In chapter 13 the subject matter concerning to environmental microbiology with respect to pollution, treatment of industrial and sewage wastes, composting and biogas production has been elaborated. The Chapter No. 14 pertains to 'Basic Microbial Techniques'. This chapter provides detailed methodology for the beginners to understand the nuances of culturing the microbes besides introducing the various culture techniques used for their culturing. The well illustrated details pertaining to inoculation, aseptic transfer, streaking, spreading, pour plate methods, staining, equipment, etc. given in the book will be of immense help to the students, researchers and teachers of Agricultural microbiology, mycology and microbial biotechnology interested in exploring the various aspects of the fascinating microbial world in and around the planet earth. The details about various culture media and their classification, maintenance and methods for preservation of microorganisms, and the techniques on microscopy given at the end of the book adds to its strength. In the end of the book the various symbols, technical terms and taxa used in the text along with the respective pagination has been given in an alphabetic order for the convenience of the book users. I hope the handy format, updated subject matter and reasonable price of the book will be of great attraction to the students, researchers and the teachers of Microbiology in general and Agricultural Microbiology in particular. I congratulate Professor Aneja for this academic pursuit.

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