Microbiology of the Agricultural Sky

Unknown to most people, there are innumerable microbial species that accomplish vital ecosystem functions while residing in a suspended state in the troposphere or resting on crop canopies. These microbial species, if utilized properly, can improve agriculture. At the same time, harmful microbes can also devastate crops easily. This first-of-its-kind new book explores a number of microbes present in the agrarian sky and details their identities, roles in nature, and usefulness to crops as well as other biotic factors.

The volume first looks at the historical aspects of microbes relating to their discovery and identification of their role in agrarian ecosystems. The book then gives detailed explanations of microbes in the atmosphere, with information on the general distribution, spread distance, and intercontinental migration of microbes in the atmosphere. It discusses aeolian dust microbes above agrarian regions and the role of aerial microbes in nutrient dynamics. The book also explains the functions of microbes that reside on crop canopies and the importance of a plant's phyllosphere. It looks at microbial flora and how a region's bio-geochemical functions affect crops. Also discussed is the role of aerial microbes in inducing epidemics and pandemics among different crops. The final chapter details farm procedures that can be adopted in the outfield and in animal houses and how they impact atmospheric microbes.

ABOUT THE AUTHOR

K. R. Krishna, PhD (Agriculture), is an agricultural scientist. His contributions deal with soil fertility, microbiology, agroecosystems, precision farming, farm robotics, and unmanned aerial vehicle systems. He has authored many journal articles, refereed papers, books, and book chapters. He is a member of the International Society for Precision Agriculture, American Society of Agronomy, Soil Science Society of America, Ecological Society of America, and Indian Society of Agronomy and Soil Science Society of India. He has authored several books on international agriculture. He is retired from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. He has received several awards for his contributions, including the Prof APJ Abdul Kalam Gold Medal in 2017 for his contributions to international agriculture and peace.

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