Introduction to Soil Microbiology

Mark Coyne
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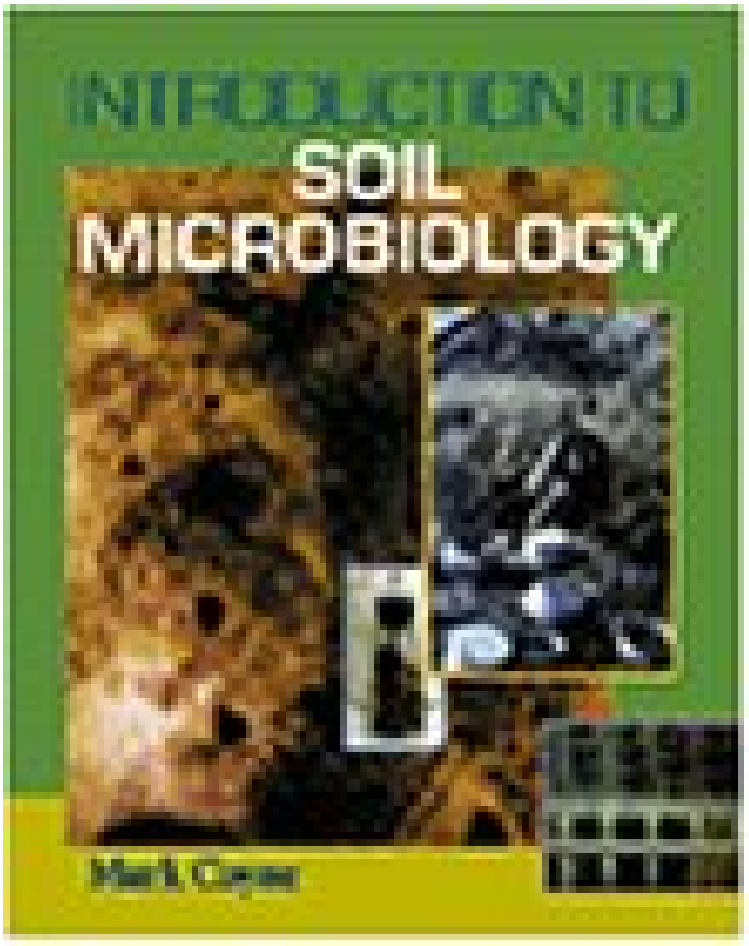

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Mark Coyne : Introduction to Soil Microbiology before purchasing it in order to gage whether or not it would be worth my time, and all praised Introduction to Soil Microbiology:

9 of 9 people found the following review helpful. Great book on MicrobiologyBy A CustomerThis is one of the best science textbooks that I have ever read. It is intended for students and others who are interested in everyday microorganisms and the roles they play in the environment. Topics include the history of soil microbiology, metabolism, enzymes, soil macrofauna and microfauna, microbial interactions, soil as a microbial habitat, nitrogen and other nutrient cycling processes, carbon cycling, heavy metal remediation, bioremediation and composting.What makes this book unique is the fun way that the information is presented (from fundamental to advanced topics). What I especially liked were the breakout sections that described especially interesting environmental "hot" topics (PCBs in the environment, Se in Kesterson wetland, vermicomposting, and many others) and simple microbial experiments (e.g. making sauerkraut at home, measuring denitrification, and many others) illustrating the role of microorganisms and other procedural steps of the methods. Another aspect that I really liked was that each subject was told in a short story

format with enthusiasm and wit.I would encourage anyone interested in natural sciences to get a copy of this book.Anonymous Faculty.1 of 1 people found the following review helpful. Make it a part of your personal library !By Said S AL-IsmailyThis book is well written one and contains a vast and updated knowledge in soil microbiology. The content of this book is easy to digest especially for individuals who are new to the field of soil microbiology. The text is enriched with easy to follow displays and figures. I strongly recommend my fellow students to get this reference and make it a part of their personal library.

Soil Microbiology is a user-friendly introduction to the incredible world of soil microbiology. The microscopic life in soil influences virtually everything in our lives from the water we drink, the food we eat, to the air we breathe. Understanding something about the life in soil, appreciating the things that these life forms do, and seeing how these activities influence our world is the goal of this textbook. This is a book you can actually read and comprehend with a minimum exposure to soil science or microbiology. It's appropriate for advanced high school students and college students just embarking on the study of environmental science. The textbook describes the life in soil in numerous short chapters that explain the basic concepts of soil microbiology in simple terms. Soil Microbiology is full of pictures that illustrate each chapter's content, and it takes the reader through graphs and figures that a soil microbiologist would be interpreting every day. For almost every topic, the textbook provides a brief description of the procedures by which that information was obtained. The questions at the end of each chapter not only test the reader's general knowledge, but also stimulate them to think in broader, more abstract terms. Each chapter also has questions that help the reader use the math skills a typical soil microbiologist might use. Three large appendixes provide the reader with a glossary of common soil microbiology terms, a complete list and pronunciation guide of all the microorganisms listed in the textbook, and a time line that puts some of the events in soil microbiology into historical perspective.

INTRODUCTION TO SOIL MICROORGANISM AND MICROBIOLOGY. A Historical Perspective of Soil Microbiology. Microbial Growth and Metabolism. Soil Enzymes. THE SOIL MICROBIAL COMMUNITY. The Macrofauna - Ants, Earthworms, and Other Creatures. The Mesofauna - Nematodes. The Microfauna - Protozoa and Archezoa. The Chromista - Algea. Fungi. Filamentous Prokaryotes - Actinomycetes. The Rest of the Prokaryotic World. Mycoplasmas, Viruses, Viroids, and Prions - The Rest of the Microbiota. THE SOIL AS A MICROBIAL ENVIRONMENT. Soil as a Microbial Habitat. Environmental Influences - Temperature, Reduction-Oxidation, and pH. Soil Water and Microbial Activity. SOIL MICROORGANISMS AND NUTRIENT CYCLES. The Sulfur Cycle. The Phosphorus Cycle. Iron and Manganese Transformations. The Nitrogen Cycle - Nitrogen Mineralization. The Nitrogen Cycle - Nitrification. The Nitrogen Cycle - Immobilization. The Nitrogen Cycle - Denitrification and Dissimilatory Nitrate Reduction. The Nitrogen Cycle - Nitrogen Fixation. The Carbon Cycle - Organic Carbon Entering Soil. The Carbon Cycle - Mineralization and Residue Decomposition. The Carbon Cycle - Soil Organic Matter and Humus. SOIL MICROBIAL INTERACTIONS. Microbial Interactions - The Community Reflects the Habitat. Symbiotic Nitrogen Fixation. Inoculation and Biocontrol. Mycorrhizae. SOIL MICROORGANISMS AND ENVIRONMENTAL QUALITY. Composting. Bioremediation. Heavy Metals. Glossary of Soil Microbiology and Biochemistry Terms. Index.About the AuthorMark Coyne is an Associate Professor in the Agronomy Department of University of Kentucky. He is a member of several organizations, including the American Society of Agronomy, American Society for Microbiology, Ecological Society of America, Soil and Water Conservation Society, and the National On-Site Waste Water Association.