Treated Wastewater in Agriculture: Use and Impacts on the Soil Environment and Crops


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TREATED WASTEWATER IN AGRICULTURE describes in great detail the use and impacts of treated wastewater in the soil environment and agricultural crops. This up-to-date book contains 14 chapters and a comprehensive index. Each chapter is written by one or more authors who are experts in their particular field of study, with references included at the end of each chapter. The book is divided into two sections: “General Aspects” and “Impacts on the Soil Environment and Crops.” The first section contains four chapters and is the more general and smaller of the two parts. Chapters 1 through 4 address the standard aspects of treated wastewater in agricultural systems. These include sources and composition, health considerations, guidelines and regulations, and economic aspects of the use of treated wastewaters. The second section contains ten chapters divided into multiple subsections and is more topic specific. Chapters 5 through 9 focus on the traditional impacts of major minerals, toxic elements, salinity, and pollutants. Chapters 10 and 11 focus on nontraditional problems and aspects such as fouling of microirrigations systems, wastewater effects on microbiology, and organic microcontaminants. While salinity and nutrients in wastewaters have long been addressed, discussions of endocrine-disrupting compounds (EDCs) and pharmaceuticals and personal care products (PPCPs) are not as common; their inclusion here makes this a state-of-the-art compendium.

As our population grows and the demand for food and fiber rises, we must increasingly utilize this valuable water resource for an alternative to fresh surface water or mined aquifer water. This book is an excellent compilation of information addressing the use of treated wastewater in agricultural soil and crop systems. The majority of the text focuses on the traditional, technical aspects and processes associated with the use of treated wastewater. The strength of the book, however, is its inclusion of nontraditional aspects such as fouling of microirrigations systems, wastewater effects on microbiology, and organic microcontaminants. While salinity and nutrients in wastewaters have long been addressed, discussions of endocrine-disrupting compounds (EDCs) and pharmaceuticals and personal care products (PPCPs) are not as common; their inclusion here makes this a state-of-the-art compendium.

This book is informative not only because it addresses the traditional pollutants of salinity and nutrients but also because it includes the novel pesticide, EDC, and PPCP pollutants. From a societal perspective, we must understand the beneficial and detrimental elements of using treated wastewater for crop production, and this book offers insight into both beneficial and harmful aspects. I recommend this book to individuals interested in the use of treated wastewater in agricultural systems.