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matrices for food packaging -- Green Approach for Biopolymer-Based Food Packaging Films Enhanced by Zinc Oxide Nanoparticles -- Biopolymer-based nanomaterials for post-harvest treatments: A Review -- Biopolymeric as agrochemicals nanocarriers -- Nano-Based Biopolymers as Adsorbent Materials -- Impact of biopolymers in a circular economy.

Sommario/riassunto

Biopolymers are polymers that are naturally sourced from renewable resources such as plants, animals, and microorganisms. These polymers are gaining increasing attention due to their biodegradability, biocompatibility, and non-toxicity, making them an attractive alternative to traditional synthetic polymers. "Biopolymeric Nanoparticles for Agricultural Applications" focuses on the use of biopolymeric nanoparticles for various agricultural purposes. It explores the potential of these nanoparticles in improving crop productivity, enhancing soil quality, and reducing the environmental impact of agricultural practices. Biopolymeric nanoparticles have gained significant attention in recent years as a promising technology for various agricultural applications such as crop protection, nutrient delivery, and soil remediation. These nanoparticles are typically made from biodegradable and biocompatible materials, such as chitosan, alginate, and starch, and offer several advantages over conventional agricultural formulations including improved stability, controlled release, and enhanced efficacy. This book provides a comprehensive overview of recent advances in the design, synthesis, characterization, and application of biopolymeric nanoparticles in agriculture. It discusses the various biopolymeric nanoparticles that can be utilized in agriculture such as chitosan, cellulose, starch, and protein-based nanoparticles. It delves into their properties, synthesis methods, and characterization techniques. The primary purpose of this book is to provide a comprehensive understanding of the applications of biopolymeric nanoparticles in agriculture. It bridges the gap between the fields of nanotechnology and agriculture, offering insights into the potential benefits and challenges associated with their use.
