1. Record Nr. UNINA990005579680403321

Autore	Pavan, Massimiliano <1920-1991>
Titolo	Antichità classica e pensiero moderno / Massimiliano Pavan
Pubbl/distr/stampa	Firenze : La Nuova Italia, 1977
Descrizione fisica	XIII, 380 p. ; 22 cm
Collana	Biblioteca di storia ; 22
Disciplina	937
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Collocazione	937 PAV 1
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
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Autore	Husen Azamal
Titolo	Emerging Carbon Nanomaterials for Sustainable Agricultural Practices : Synthesis, Plant Growth, Performance, Production and Protection / / edited by Azamal Husen
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	9789819751044 9819751047
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Descrizione fisica	1 online resource (513 pages)
Collana	Smart Nanomaterials Technology, , 3004-8281
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Soggetti	Nanobiotechnology Nanoparticles Botanical chemistry Plant Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Nota di contenuto

Carbon-based nanomaterials synthesis and their various applications in agricultural sectors -- Carbon nanomaterials for healthier crop plant growth and enhanced yield -- Crop plants' physiological features and their performance under exposure to carbon nanomaterials -- Biochemical and molecular response of crop plants exposed to carbon nanomaterials -- Positive and negative impact of carbon-based nanomaterials on plant growth performance -- Proteomic study on the effects of carbon-based nanomaterials on crop plants -- Carbon-based nanomaterials and gene expression in crop plants -- Enhancement of seed germination of important crop plant species using carbon-based nanomaterials -- Influence of carbon-based nanomaterials on cell toxicity, nutritional and active compound accumulation in crop plant system -- Carbon-based nanosensors in agricultural practices -- Carbon nanosensors for herbicides detection -- Role of carbon-based nanomaterials in crop plants drought stress management -- Role of carbon-based nanomaterials in crop plants salinity stress management -- Role of carbon-based nanomaterials in crop plants temperature/heat stress management -- Role of carbon-based nanomaterials in crop plants nutrients stress management -- Role of carbon-based nanomaterials in biotic stresses management -- Carbon-based nanomaterials in crop plant diseases management -- Role of carbon-based nanomaterials as bactericides and fungicides in an agricultural system -- Impact of carbon-based nanomaterials on plant growth promoting rhizobacteria and sustainable agricultural crop plant production -- Impact of carbon-based nanomaterials on soil microbiomes and associated activities -- Impact of carbon-based nanomaterials in tissue culture medium and plant growth performance -- Risk assessment and regulatory decision-making for carbon-based nanomaterial use in agriculture sectors -- Ethical aspects related to the use of carbon-based nanomaterials in agriculture practices.

Sommario/riassunto

The potential use of carbon-based nanomaterials in overall plant systems has not yet received much research, and the results that have been reported are typically descriptive and inconsistent with little knowledge of the underlying mechanisms of action. Changes in gene expression and enhanced ROS production are among the physiological processes that may be impacted by interactions with carbon nanomaterials. They penetrate plant cells, are readily taken up by plants, and then influence the key events of plants such as seed germination, seedling growth, root formation, photosynthesis, flowering, yield, and overall performance. Moreover, in terms of soil quality, carbon nanomaterials have the capacity to influence the health status of agricultural soils, and thus, increase sustainable agriculture practices. Currently, plant disease management depends mainly on toxic pesticides that are potentially harmful to humans and the environment. These particles have enabled their use as bactericides, fungicides, and nanofertilizers. Carbon nanomaterials, however, which may be helpful in plant nucleic acid delivery, pesticide and fertilizer application, wastewater treatment, eradication of pathogen-induced plant illnesses, and detection of significant plant molecules, are the subject of this book. The use of carbon nanoparticles in tissue culture medium and plant growth performance has also been examined. The so-called ‘safe-by-design’ strategy for a guided design of nanomaterials without harmful environmental side effects requires knowledge of the special structural properties of particles that determine the deleterious impacts on living beings. Accordingly, the environmental safety, and ethical issues related to the use of carbon nanomaterials in agricultural sectors have been also explored. Overall, the book in hand provides an extensive, important, and selected topic

related to carbon nanomaterials in agricultural sectors. This book provides valuable information to scientists, researchers, and students, working especially on agricultural science, plant science, plant pathology, plant biology, plant nanobiotechnology, plant biochemistry, soil microbiology, and other allied subjects.