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Chitosan Based Nanomaterials in Plant Growth and Protection

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ISSN 2192-1229 ISSN 2192-1210 (electronic)
SpringerBriefs in Plant Science
ISBN 978-81-322-3599-6 ISBN 978-81-322-3601-6 (eBook)
DOI 10.1007/978-81-322-3601-6

Library of Congress Control Number: 2016945011

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer (India) Pvt. Ltd.

Abstract

The aim of this brief is to explain the synthesis, properties and potential uses of chitosan-based nanomaterials in plant protection and growth. Precise assessment of chitosan-based nanomaterials' synthesis and properties are mentioned. A description of various factors which affect their synthesis and characters has been elucidated. Biological activities like antimicrobial activity (e.g. antifungal-antibacterial activity) including the mode of action have been discussed. In addition, the effect of chitosan-based nanomaterials in plant growth is also pointed out. Authors summarize the plant protection and growth regulatory applications of chitosan nanomaterials. Current and possible utilization of chitosan nanomaterials in plant nutrition, abiotic stress management and post-harvest application is also highlighted. The authors have highlighted their own research views and concluded the recent and future prospects of chitosan nanomaterials' applications in plant protection and growth.

Keywords

Chitosan, Plant growth, Antimicrobial activity, Nanomaterials, Nanotechnology