Nanotechnological interventions for plant growth and production

Garima Awasthi

Vivekananda Global University, Jaipur- 303012, India

Keywords:

Nanotechnology, Nanofilters, Nanosensors, Photosynthesis, Plant growth and development

I. Abstract Body

Nanomaterials in biology is a versatile tool for enhancing plant growth and development, and yield. Nanotechnology facilitates improvement in agricultural production by amplifying the input efficiency and reducing relevant losses. Nanomaterials provide wider and specific surface area to agrochemicals and act as inimitable carriers to enhance nutrient bioavailability and accumulation of nutrient elements in crop plants. Nanomaterials can also be used for the crop protection. For this purpose, an inclusive understanding of nanotechnology practices and the effect of nanomaterials on the physiological, biochemical, and molecular level are needed. Nanotechnology can also be helpful to plant growth through technological interventions like nanosensors and nanofilters, to help monitor and manage the crop growth and development. The synthesis of nanoparticles can be based on chemical methods and can also be achieved through green plant-based methods. This review summarizes the utilization of plants for nanoparticle synthesis through green methods, effects of nanoparticles on growth and development of plant, and the applications of nanoparticles as fertilizers, pest control agents and in post-harvest processing of crop produce. The review also addresses various physical aspects of nanotechnology i.e., nanosensors, nanofiltration, diligence farming, and fabricated nanoparticles.

II. Image: NA

III. Reference:

IV. Biography:

Dr Garima Awasthi has completed his PhD at the age of 30 years from CSIR-National Botanical Research Institute (AcSIR University) and Postdoctoral Studies from Department of Botany, University of Lucknow, India. She is working as Assistant Professor at Vivekananda Global University Jaipur India. She has published more than 15 papers in reputed journals and has been serving as an editorial board member /reviewer and holding lifemembership in many international and national scientific socities..

V. Presenting author details



Full Name: Dr. Garima Awasthi

Contact number: +91-7617859527

Twitter account: NA

Linked In account: NA

Session name/ number: Bio-nanotechnology

Category: Invited Speaker

Passport Number: J7675044