REVIEW ARTICLE

NANOTECHNOLOGY: APPLICATION IN THE FIELD OF AGRICULTURE

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Abstract: Indian agriculture, passing through various revolutions ,has made appreciable achievement in terms of production & productivity ,availability of food grains, horticultural produce,milk,meat & fish which has been possible through technological interventions and critical role played by Indian council of agriculture research (ICAR) .although are continue to be the same to 40million hectares for the last 40 years, production has increased apparently .the production of food crop has increased 4.5 times ,many of the crops which were not known before, have emerged as important, and we have become leader. Despite numerous challenges and short comings the horticulture has exhibited impressive growth. If Indian agriculture has to attain its board national goal of sustainable growth, it is important that the nanotechnology research is extended to the total agricultural production consumption system that is across the entire agricultural value chain. Nanotechnology in agriculture could be used for enhancing the efficiency of the technologies; this includes nanoparticle based disease diagnostics, nano-insecticides for insect pest control, nano-formulation for nutritional studies & various other aspects.Nanomanufacturing makes Nanoscale building blocks including nanoparticles, nanotubes &nanostructures.Nanoparticle can be formed by either milling of large particle or by directly chemical synthesis.however carbon nano tubes and most nanoparticle are synthesized directly from liquid or vapor phases.Chemical & physical vapor phase synthesis is well-established technologies for large scale production of metal, metal oxide and ceramic nanoparticles.The recent development in plant science that focused on the role of nanoparticle in plant growth & development and also on plant mechanism.

Keywords: NPs (nanoparticles), QDs (quantum dots), CNTs (carbon nanotubes), MWCNTs (multi-walled-CNTs)

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