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## Agri-nanotechnology-A conceptual revolution in agriculture and allied sciences

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Systematic prioritization of application of nanotechnology has revealed interesting challenges in biology, agriculture in particular. Agriculture has long been dealt with improving the efficiency of crop production, food processing, food safety and environmental consequences of food production, storage and distribution. Nanotechnology provides new tools to pursue these historically relevant goals in agriculture and allied sciences. Conceptual designing and synthesis of the target specific nanomaterials is been an interesting task to scientific community. A specially designed nanoscale zinc oxide particles enhanced the productivity of peanut at field scale to an extent of 30 percent compared to the existing productivity levels. Nano scale calcium oxide particles are effective in the remediation of sodic soils compared to the existing materials. Amino coated green synthesized silver nanoparticles showed novel antimicrobial activity against *bovine mastitis*. Phytochemical silver nanoparticles from maize leaf extract exhibited novel toxic properties to control aflatoxin contamination in broilers. Plant extracts of different crops are proved to be potential biosources to produce metallic nanoparticles. Nanoparticle encapsulated natural food colours lasted in relatively longer periods of time when they are mixed in the food. Thus, rapid growth in nanotechnological applications in agriculture and allied sciences lead to the development of an inter-disciplinary conceptual approach, agri-nanotechnology.

### Biography

T. N. V. K. V. Prasad is now Senior Scientist and in-charge of Nanotechnology laboratory at Institute of Frontier Technology Tirupati, and recognized as "National Resource Person in Nanotechnology", India. He got his Ph.D. in Physics with Material Science specialization from Andhra University, India. He has been awarded Endeavour Research Award from the Government of Australia in 2010 for his post doctoral research. He introduced the concept agri-nanotechnology (Applications of nanotechnology in agriculture and allied science) and filed two patents. So far, published more than 65 research papers in peer-reviewed journals and authored two book chapters and coined the term "Phyconanotechnology". He has visited several universities as a high-level delegate and as visiting scientist including Johns Hopkins University, USA, University of Kentucky, USA, Kansas State University, USA, Tuskegee University, USA, and University of Florida, USA, University of South Australia, Australia. Currently, his research focus is on the development of agriculturally beneficial nanomaterials and their applications in agriculture and allied sciences.

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