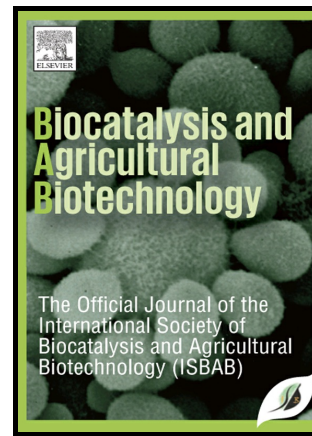


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EFFECT OF *PARTHENIUM* BASED VERMICOMPOST AND ZINC OXIDE NANOPARTICLES ON GROWTH AND YIELD OF *ARACHIS HYPOGAEA* L. IN ZINC DEFICIENT SOIL

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Abstract

Zinc is an important micro nutrient and is vital for germination, chlorophyll production, pollen function and fertilization. An investigation was carried out to explain the effect of *Parthenium* based vermicompost and nanoparticles (zinc oxide nanoparticles) on the growth profile and yield of *Arachis hypogaea* L. in zinc deficient soil. *Parthenium* mediated zinc oxide nanoparticle and zinc sulphate treated seeds were cultivated in zinc deficient soil. Presence of zinc oxide nanoparticles in the treated seeds were confirmed through atomic absorption spectroscopy. Various growth and yield related parameters, including fresh weight, dry weight, shoot length, root length, chlorophyll content, total free phenols, reducing sugar and total soluble sugar, number of pods etc. was positively affected by the nanoparticle treatment. Chlorophyll as well as total free phenols, reducing sugar and total soluble sugar levels were increased up to 300 ppm of zinc oxide nanoparticles treatments. Zinc oxide nanoparticle treatment increased the number of pods per plant when compared to control treatment. Best increase in pods and grains yield was recorded at 300 ppm of zinc oxide nanoparticle treatment. Zinc oxide nanoparticles were used as fertilizer for zinc deficient soil.

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