

International Conference on

NANOSCIENCE & TECHNOLOGY

May 21-22, 2018 | New York, USA

Preparation of Chitosan nanoparticles for growth improvement of fingermillet and protection against blast fungus

M Sathiyabama

Bharathidasan University, India

The use of bio-based nanomaterials in agriculture is receiving more attention due to their non-toxicity, biodegradability, specificity and broad range of action with improved function. Chitosan, a polymer is used in agriculture for improved growth and protection of crops from various biotic stresses. However, the size limits its wide application and hence, chitosan nanoparticles were synthesized. Synthesized chitosan nanoparticles were characterized using FTIR, DLS, TEM and XRD analyses. They were used to improve growth and yield of fingermillet plants and to protect them

from phytopathogenic fungus. Foliar application of chitosan nanoparticle promotes growth of fingermillet plants and induced ROS accumulation, peroxidase activity in treated leaves. Treated plants challenged with blast fungus showed protection. High accumulation of peroxidase correlates with decreased blast disease symptom appearance in treated plants. Treated plants showed high accumulation of ROS and peroxidase which might be the reason for suppression of blast disease incidence.

e: sathiyabamam@yahoo.com