

Myco-synthesized silver nanoparticles from *Curvularia affinis* showing inhibitory activity against phyto-pathogenic fungus *Alternaria solani*

MADHUSREE HALDER*, SOMNATH MONDAL, SARMISTHA RAY AND SUREKHA KUNDU

*Molecular and Applied Mycology and Plant Pathology Laboratory, Department of Botany,
University of Calcutta, Kolkata 700019*

Received : 19.02.2018

Accepted : 16.03.2018

Published : 30.04.2018

The present study deals with antifungal activity of silver nanoparticles synthesized from phytopathogenic fungus *Curvularia affinis* Boedijn. The fungus is the causal organism of foliar spot disease of several economically important crops. Scanning Electron Microscopy showed that the silver nanoparticles were mostly spherical in shape and less than 10-15nm in size. The effect of these nanoparticles on the first, second and third order branching of *Alternaria solani* (Ell. Martin), causing early blight of tomato was seen. Only 0.5% (v/v) of nanoparticles could alter the normal growth and branching pattern of *Alternaria solani* hyphae as well as having a potent inhibitory effect on their growth. This inhibitory effect was directly proportional to nanoparticle concentration. The inhibitory effect was tested on different media compositions. These nanoparticles were successfully used as nano-fungicide, as it had the potential to inhibit the growth of the test phytopathogenic fungi *A. solani*.

Key words: *Curvularia affinis*, silver nanoparticles, antifungal activity, phytopathogenic fungi, hyphal branching, *Alternaria solani*
