



Investigating Green Synthesis of Silver Nanoparticles from Orange Peel (*Citrus sinensis*) and the Effects of Chitosan, Sylamol, Nanosilver on *Rhizopus stolanifer* in Tomato (*Solanum lycopersicum*)

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Abstract: This research was carried out in order to synthesize green nanoparticles of orange peel extract and its effect on *Rhizopus stolanifer* control in tomato at Islamic University of Tehran Research and science branch. Silver nanoparticles were successfully prepared from orange peel. Size 8-21 and spherical shape was determined by using TEM and XRD. The effect of chitosan, sylamol, aqueous extract and silver nanoparticles was investigated with different concentrations in the response of tomatoes inoculated with *Rhizoctonia stolanifer*. This experiment was conducted in a completely randomized block design with three levels of chitosan, sylamol, aqueous extract and silver nanoparticles (10, 20 and 30 mg/ L) and with three replications. Measurement of traits was carried out at 4, 1, 3, 7, and 11 days. The growth of *Rhizopus stolanifer* was affected by increasing treatments levels. Results indicated that 30 mg l⁻¹ of silver nanoparticles had the highest inhibitory effect.

Keywords: Nanoparticles, *Rhizopus stolanifer*, TEM, XRD, Chitosan, Sylamol
