

عنوان مقاله:

Silver nanoparticles produced by green synthesis using Citrus paradise peel inhibits Botrytis cinerea in vitro

محل انتشار:

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تعداد صفحات اصل مقاله: 10

نویسندگان:

Ramesh Faghihi - *Department of Horticulture, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Kambiz Larijani - *Department of Chemistry, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Vahid Abdossi - *Department of Horticulture, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Pejman Moradi - *Department of Horticultural Sciences, Saveh Branch, Islamic Azad University, Saveh, Iran*

خلاصه مقاله:

Purpose: Our objective was to undertake the green synthesis of silver nanoparticles using Grapefruit (Citrus paradise) peel extract and evaluate the effects of silver nanoparticles on Botrytis cinerea. **Research method:** The silver nanoparticles formation was evaluated at different temperatures and concentrations of AgNO₃. The experiment was conducted during 2015 at Science and Research Branch, Islamic Azad University, Tehran, Iran. **Main findings:** Silver nanoparticles were successfully synthesized by Grapefruit s peel through a simple green and eco-friendly route. Aqueous extract of Grapefruit s peel was used synthesize nanosilver. The size of nanoparticle was determined at 5-65 nm, with SPR absorption at 420 nm in UV-Vis spectroscopy. Transmission electron microscopy (TEM) and X-ray diffraction spectroscopy (XRD) revealed that the synthesized nanoparticle was face centered. The silver nanoparticles characterized for their size and shape using scanning electron microscopy and TEM, respectively. XRD was used to determine the concentration of metal ions. Result indicated that nanosilver reduced the growth of Botrytis cinerea inviro culture. The highest antifungal effect was seen in the treatment with 40g/l nanosilver. In the other hand, the effect of nanosilver and time on diameter growth of Botrytis cinerea was not significant, individually ($p \leq 1\%$). **Limitations:** No limitations were founded. **Originality/Value:** Green Synthesis of Nano is a reliable method for the .nanoparticles synthesis and environmentally friendly approach

کلمات کلیدی:

Botrytis cinerea, Citrus paradise, Green synthesis, Silver nanoparticles, TEM and XRD

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