

Efficiency of novel nanoparticles from shrimp shells as a nematicide against plant parasitic nematodes

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Nowadays world is facing various problems regarding food security, among them, pests and diseases are causes major losses in plants and crops. In addition, shrimp waste has been used successfully as a component of plant fertilizer. During composting, shrimp byproducts have shown promise as worm feed and may be utilized in bait or agricultural worm production. In this investigation, shrimp shell of silver nanoparticles used as nematicide on plant parasitic nematodes. The nematicidal activity of biosynthesized silver nanoparticles concentrations. 50, 100, and 200 µg/mL were estimated in vitro against plant parasitic nematode (*Meloidogyne incognita*), egg hatching and movement after 24 and 48 hours. The silver nanoparticles 200 µg/ml experiment revealed that nanoparticles illustrated high nematicidal activity after 48 h up to 90% of nematode mortality. Generally, the efficiency of shrimp shells' nanoparticles was suppressed the nematode activity, mortality, egg hatching, and movement of larvae. To our knowledge, this is the first report of nematicidal action of biosynthesized silver nanoparticles shrimp shells extract and it could be applied as an effective nematicide to control the plant-parasitic nematode as it is simple, stable, cost-effective and ecofriendly where environment remains safe.

Biography

Dina Elkobrosy is affiliated to Universities & research Centers District, Egypt. He is a recipient of many awards and grants for his valuable contributions and discoveries in major area of subject research. His international experience includes various programs, contributions and participation in different countries for diverse fields of study. His research interests reflect in his wide range of publications in various national and international journals.

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