نشست هم اندیشی با متخصصین و کارآفرینان عرصه گیاهان دارویی
دومین کنفرانس بین المللی
گیاهان دارویی، کشاورزی ارگانیک
مواد طبیعی و دارویی
The 2nd International Conference on
Medicinal Plants, Organic Farming,
Natural and medicinal materials
۲۲ اسفند ماه ۱۳۹۷ – مشهد مقدس

The efficiency of silver nanoparticles in control two spotted spider mite, *Tetranychus urticae* (Acari: Tetranychidae) under laboratory conditions

Ali Mirshekar[1]- Tayebeh Hadadi[2]- Zaynab Mohkami[3]
1-Department of Plant Protection, College of Agriculture, University of Zabol, Zabol, Iran.
2-Department of Food Sciences and Technology, College of Agriculture, University of Zabol, Zabol, Iran
3-Institute of Agriculture, University of Zabol, Zabol, Iran

Abstract

The two-spotted spider mite (*Tetranychus urticae* Koch.) is one of the most harmful phytophagous pests, dangerous not only due to its fast development cycle and high fertility, but also due to its ability to rapidly develop resistance to active substances of acaricides. In this work acaricidal relative toxicity of silver nanoparticles (AgNPs) was evaluated against adults of mite. Silver nanoparticles synthesized by chemical reduction method and six concentrations (190, 285, 356, 441, 551 and 685 mg ml^{-1}) by leaf dipping method were tested under laboratory conditions. Result showed that, the silver nanoparticles were highly effective against this mite causing more 96.04% mortality in highest concentration indicating the effectiveness of AgNP to control this pest. In the experiments, the LC_{50} and LC_{90} value for Ag nanoparticles were calculated 363.10 mg $mL^{-1}$and 629.26 mg mL^{-1}, respectively. The result also showed that AgNPs can be used as a valuable tool in pest management programs of *T. urticae.*

Key words: *Tetranychus urticae*, acaricide, silver nanoparticles