

prevent the wasting of pesticide active ingredient and delivery to the target site. Therefore, it is anticipated that the non-immediate effect of nano-pesticides, in addition to reducing the harmful effects on non-target organisms, can also be reduce the over-replication of spraying and environmental pollution. In this study also examined the activity of detoxifying enzymes (Glutathione S-transferase, esterase and acetylcholinesterase) in two spotted spider mite after treatment with nano-formulations and commercial formulations of Hexythiazox and Diafenthiuran and the results showed that Hexythiazox and Diafenthiuran nano-formulations had inhibitory effect on the activity of the mentioned enzymes compared to their commercial formulation, which may delay the pest resistance Hexythiazox and Diafenthiuran nano-formulations .The results of this study demonstrate the appropriate efficacy of Hexythiazox and Diafenthiuran nanoformulation for the control of two spotted spider mite. This study was conducted in vitro, so these nanoformulations can be used in the management of two spotted spider mite after field trials.

Keywords: Detoxifying enzyme, Lethal effect, Physiological parameters, Sodium Alginate, Chitosan, Nanoacaricide, Nanoparticles



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**Effect of nanoparticles loaded by pesticides on the activity of
some detoxifying enzymes of two-spotted spider mite
(*Tetranychus urticae* Koch)**

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