



ORIGINAL ARTICLE

IN VITRO AND IN VIVO EVALUATION OF SOME PESTICIDES AGAINST THE DUST INDIAN MITE *RAOIELLA INDICA* HIRST (ACARI : TENUIPALPIDAE)

Alaa Hassan Al-Farttoosy*, Dawood Salman Hamid and Hussein Ali Mehdi

Department of Plant Protection, College of Agriculture, University of Basrah, Iraq.

E-mail: alaa.hassan@uobasrah.edu.iq

Abstract: *Raoiella indica* Hirst (Acari: Tenuipalpidae) is one of the important pests that attack poly hosts. In the present work, we have been trying to find out the best acaricide and the concentration. The experiments were applied in vitro (laboratory) and in vivo (field). Our in vitro results revealed that the Ortus Super was the best acaricide against the larvae of red mite by recording a mortality 77.76% compared to special that achieved 58.26%, predicting similar or superior outcomes in the field. In contrary, the efficiency of abamectin and Ortus Super were similar against *R. indica* in the field. The mortality % reached 63.94 and 63.91%, respectively. The adult control in the field, Ortus Super realised 77.76% mortality, followed abamectin 68.51% and the lowest was special (58.26%). Whereas the used concentrations and the timing of reading taken also were varied. The high concentration of each acaricide overcome on the two various concentrations. Furthermore, the mortality% time was different for both in vitro and vivo experiments. Overall, the last day of taking sample recorded the highest percent compared to the two various concentrations. The results indicated that the use of Ortus super and abamectin at high concentrations is important in combating red mite pests.

Key words: Chemical control, Date-Palm, *Raoiella indica* adults, *Raoiella indica* larvae, Acaricides.

Cite this article

Alaa Hassan Al-Farttoosy, Dawood Salman Hamid and Hussein Ali Mehdi (2022). *In vitro* and *In vivo* Evaluation of some Pesticides against the Dust Indian Mite *Raoiella indica* Hirst (Acari : Tenuipalpidae). *International Journal of Agricultural and Statistical Sciences*. DocID: <https://connectjournals.com/03899.2022.18.1567>

1. Introduction

Date palms are infested by various pests like a dust mite, *Oligoneychus afrasaiticus* [Al-Ealayawi *et al.* (2020)], *Batrachedra amydraula* [Oleiwi *et al.* (2021)], in addition, *Jebusaea hammerschmidtii* [Dias *et al.* (2021)], which leading to considerable quantity and quality losses. The red palm mite, *Raoiella indica* Hirst (Acari: Tenuipalpidae) is considered the common pests that attack Date Palm. This mite is also called the red palm mite, which is characterised as polyphagous hosts. It has reported in July 2009 in Brazil as an invasive mite, causing damages in bananas, coconut [Navia *et al.* (2009), AL-Bayati (2019)]. While, another study mentioned that *R. indica* has first recorded in India 1924. A previous study was carried out in Cancún, Mexico by Otero-Colina *et al.* (2016)

has shown the ability of this mite to spread on the range of hosts, leading to various levels of infestation. For example, red ginger (*Alpinia purpurata*), lobster claw (*Heliconia bihai*), coconut palm (*Cocos nucifera*). Furthermore, another published studies have shown the economic importance of *R. indica* in the Caribbean region and America continent where causing significant injury in the American on coconut palms [Yeledhalli *et al.* (2012), Da Cruz *et al.* (2015)]. According to many in the field, different acaricidee were evaluated in the toxicity of *Raoiella indica*. de Assis *et al.* (2013) studied the evaluation of 10 acaricises, including formetanate hydrochloride, milbemectin, sulphur, abamectin, fenazaquin, propargite, bifenthrin, acequinocyl, fenpyroximate and dicofol. All acaricides achieved 0-100% mortality. Other authors, According