

POPULATION DYNAMICS OF THE AVOCADO BROWN MITE, *OLIGONYCHUS PUNICAE*, AND ITS
NATURAL ENEMIES IN SOUTHERN SPAIN AVOCADO CROPS

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ABSTRACT

The avocado brown mite *Oligonychus punicae* (Hirst) (Acari: Tetranychidae) was first found in 2012 in some crops of the province of Málaga (Spain), with a sporadic presence and a distribution limited to few specific locations.

In 2014, due to a sudden increase in *O. punicae* populations detected in our study area, we monitored its populations and that of their potential natural enemies (*Phytoseiidae* mites) in four avocado plots located in La Mayora Experimental Station, during one year. We also included in the study the avocado pest *Oligonychus perseae* (Tuttle, Baker & Abatiello) (Acari: Tetranychidae), which is present in this area since 2004. The population dynamics of *O. punicae* was characterized by an exponential increase starting in late summer, with a maximum in October-November, and a decrease until December. In two plots, a second maximum was found in January, probably due to an unusual rise in temperatures. *Oligonychus punicae* population peaks were followed by phytoseiid populations peaks, suggesting that predatory mites responded numerically to the herbivore abundance. During these phytoseiid population peaks, adults were collected from avocado leaves and were identified. Results showed that two species were present, *Euseius stipulatus* (Athias-Henriot), as the dominant species, closely followed by *Neoseiulus californicus* (McGregor) (*Mesostigmata: Phytoseiidae*).

Lastly, we made laboratory experiments to determine the predatory ability of *E. stipulatus* on *O. punicae* eggs.

Keywords: Phytoseiid mites, avocado pest, predatory ability.