



## Effect of age and density on dispersal probability and distance in *Tetranychus ludeni* Zacher\*

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\*In: Zhang, Z.-Q., Fan, Q.-H., Heath, A.C.G. & Minor, M.A. (Eds) (2022) *Acarological Frontiers: Proceedings of the XVI International Congress of Acarology (1–5 Dec. 2022, Auckland, New Zealand)*. Magnolia Press, Auckland, 328 pp.

Dispersal strategies of species can affect its invasion success. Investigation into the dispersal strategies of invasive species in relation to different factors facilitates our understanding of the invasion mechanisms and provides knowledge for population management and invasion evaluation. *Tetranychus ludeni* Zacher (Acari: Tetranychidae) is an invasive species, which is native to Europe but now cosmopolitan. Here, we examined the effect of age and density on ambulatory dispersal probability and distance of mated females. Our results show that older females (3–12 days old) with more mature eggs were more likely to disperse and moved longer distances than younger ones (1 day old) with fewer eggs within 24 hours. Older females spread most of their eggs out of the natal habitats and over longer distances, which reduced competition and increased offspring fitness. Females significantly increased dispersal probability and distance with the increase of population density. The synchronization of dispersal and reproduction and the positive density-dependent dispersal strategy may facilitate habitat colonization and invasion speed of *T. ludeni*.

**Keywords:** dispersal probability, dispersal distance, age, density, reproduction, spider mite