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Response to an incursion of tomato red spider mite *Tetranychus evansi* in New Zealand*

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The tomato red spider mite (TRSM), *Tetranychus evansi* Baker and Pritchard (Acari: Tetranychidae) was first detected from black nightshade *Solanum nigrum* (Solanaceae) near Auckland Airport on 21 May 2020 (Ministry for Primary Industries. 2020a, b; Fan *et al.* 2021). A preliminary investigation revealed more mites within 0.5 km away from the original site. Subsequently, two more sites were found positive for TRSM, one was approximately 20 km north east of the original site and the other about 9 km east of the original site. The analysis of DNA sequences of the detected mites indicated that the TRSM in Auckland belonged to the Lineage I, indicating that there was a single incursion. A response was initiated, and a delimiting survey was carried out, targeting the areas along the State Highway One including the nearby agricultural production farms between Auckland and Whangarei, and Auckland and Hamilton. A total of 541 site searches were carried out and TRSM was detected in eight sites covering an area of 91.4 km^2 across the Auckland region.

The TRSM populations were largely found on *Solanum nigrum* (Solanaceae) and some other adventive plants, *i.e.*, *Malva sylvestris* (Malvaceae), *Montanoa bipinnatifida* (Asteraceae), *Rumex acetosa* (Polygonaceae), *Senecio jacobaea* (Asteraceae), *Solanum chenopodioides* (Solanaceae), *Stachys arvensis* (Lamiaceae), *Taraxacum officinale* (Asteraceae), and *Verbascum thapsus* (Scrophulariaceae)), and native plants (*i.e.*, *Coprosma repens* (Rubiaceae), *Pittosporum crassifolium* (Pittosporaceae), and *Sonchus kirkii* (Asteraceae). It was not detected on tomato *Solanum lycopersicum* in the field until 7 May 2021 but had never been found inside any greenhouse until now (31 Aug. 2022). The other species of *Tetranychus* detected during the survey were *T. lambi*, *T. ludeni* and *T. urticae*. The response was closed as the control of the spread of TRSM within the known distribution was technically not feasible and thence moved to a long term management strategy.

Keywords: Acari, Prostigmata, Tetranychidae, invasive species, Auckland

References

Fan, Q.-H., Li, D., Bennett, S. & Balan, R.K. (2021) Diagnosis of a new to New Zealand spider mite, *Tetranychus evansi* Baker and Pritchard, 1960 (Acari: Tetranychidae). *New Zealand Entomologist*, 44(1), 59–70. https://doi.org/10.1080/00779962.2021.1951932

Ministry for Primary Industries (2020a) Priority pests and diseases of biosecurity concern to plant health list. Available from: https://www.biosecurity.govt.nz/protection-and-response/finding-and-reporting-pests-and-diseases/priority-pests-plantaquatic/horticultural-pests/tomato-red-spider-mite/ (Accessed 25 May 2020)

Ministry for Primary Industries (2020b) Tomato red spider mite, *Tetranychus evansi*, two small populations of the tomato red spider mite were found in Auckland in May 2020. Find out about the mite and what's being done. Available from: https://www.mpi.govt.nz/protection-and-response/responding/alerts/tomato-red-spider-mite/ (Accessed 25 May 2020)

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