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Identity and distribution of *Sonchus* leaf-curling mite (Acari: Eriophyidae) in New Zealand

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Lamb (1960) in his summary of galls known in New Zealand lists a leaf edge roll on *Sonchus oleraceus* L. (Asteraceae) that was found in February 1951 at Mangere and Mount Albert in Auckland. The mite species associated with those damage symptoms was not identified, nor described in subsequent papers on New Zealand Eriophyoidea (Manson 1984a,b; Xue & Zhang 2008), though a European species, *Aceria sonchi* (Nalepa, 1902) (Acari: Eriophyidae), that causes leaf galls, was known (Knihinicki *et al.* 2009). This recent paper (Knihinicki *et al*. 2009) describes a new species of eriophyoid mite that induces leaf edge curling and rolling in *Sonchus* species in Australia. Knihinicki *et al.* (2009) also postulated that the New Zealand mite on *Sonchus* might be the same species as the newly described species from Australia based on the damage symptoms recorded by Lamb (1960).

After becoming aware of the symptoms of leaf edge rolling and curling on *Sonchus* species as reported in Knihinicki *et al*. (2009), *Sonchus* plants were examined and samples showing such symptoms were collected for mite identification. Plants of *Sonchus oleraceus* with leaf edge curling and rolling (Fig. 1) were found in November, 2008 and, March and July, 2009, and January 2010 at

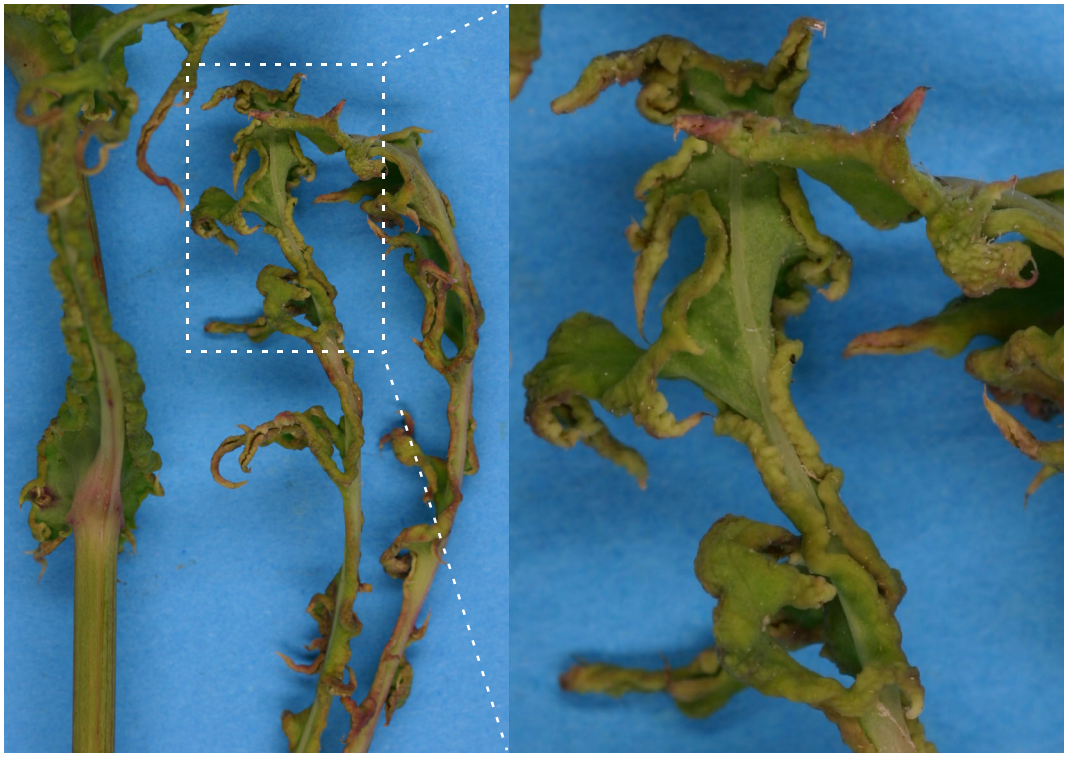

FIGURE 1. *Sonchus oleraceus* L (Asteracea) showing severe leaf curling and rolling induced by *Aceria thalgi* Knihinicki, 2009 (Acari: Eriophyidae). Collected on 1 November 2008 from Panmure Basin, Auckland, New Zealand (photograph by Nicholas A. Martin, copyright Plant & Food Research).

six locations, five in the Auckland Region and one in North Waikato. Mites from Mount Albert Research Centre, Auckland—one of the first sites recorded by Lamb (1960)—were identified as *Aceria thalgi* Knihinicki *in* Knihinicki *et al*. (2009) (See Fig. 2).

Plants showing symptoms of leaf curling and rolling were found on or close to beaches on the East and West coasts in Auckland and Waikato regions. At Raglan, Waikoto, the plant was in the hollow of a sand dune, while two west coast beaches were stony above the high tide. Plants not growing on the beach were at the base of walls, mostly concrete. One stony beach had many infested plants, but at the other sites, damage symptoms were usually found on one or two plants near each other.

The distribution of plants in New Zealand suggests that they prefer sites that get hot in sunny weather during spring and summer. The isolated distribution of plants indicates that the mites have a high level of dispersal that enables them to colonize isolated plants.

Voucher specimens. Collected by N.A. Martin on 20 Jan. 2010 from the rolled leaf edges of *S. oleraceus* in Mt Albert Research Centre, Auckland; mites mounted in Hoyers medium on 4 slides, with serial number 10-858 Z; deposited in the New Zealand Arthropod Collection, Auckland.

FIGURE 2. Photomicrograph (differential interference contrast microscopy at 1000x oil immersion, Nikon E-90 microscope with the imaging software NIS-Elements BR 3.10) of *Aceria thalgi* Knihinicki, 2009 collected in Auckland, New Zealand. Female adult in dorsal view showing the prodorsal shield pattern and arrangement of microtubercles on the dorsal annuli. Scale: the distance between the bases of two *sc* setae is 28 µm. Photograph by Zhi-Qiang Zhang.

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