



Establishment and spread of the invasive mite, *Tetranychus gloveri* Banks (Prostigmata: Tetranychidae) in Kerala, India*

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Tetranychus gloveri Banks was first recorded as *Tetranychus okinawanus* Ehara in India on an ornamental plant, *Adenium obesum* from Thrissur district, Kerala state, during 2016 (Zeity *et al.* 2016). Recently, Sharkey *et al.* (2022) synonymized *T. okinawanus* with *T. gloveri* based on morphological and molecular data. In Kerala, *T. gloveri* has emerged as a predominant species of mite infesting major agricultural and horticultural crops in the district (Arunima *et al.* 2018). In order to investigate the distribution and host range of the mite species in Kerala, periodical surveys were conducted in different agricultural ecosystems across the state during March 2020 to June 2022. Spider mite infested samples were collected from fruit crops, vegetables, ornamental plants, medicinal plants and other non-crop plants from different localities, kept in polythene bags. The GPS data of the locality and host plants were recorded. In the laboratory, a single gravid female from each sample was used to establish isoline culture providing unique accession number. Male and female specimens from each isoline culture were slide mounted on Hoyer's medium and morphological characterization of the slide mounted mite specimens were carried to establish the species identity. Characters such as chaetotaxy of hysterosoma and legs, structure of empodium and pattern of dorsal striae between *e1* and *f1* of female were used for genus level identification, while the shape of male genitalia, aedeagus, was used for species level identification. In this study, *T. gloveri* was recorded from a wide host range of 35 host plants in 24 plant families viz., Malvaceae, Cucurbitaceae, Fabaceae, Amaranthaceae, Rutaceae, Solanaceae, Musaceae, Moraceae, Anacardiaceae, Caricaceae, Adoxaceae, Rosaceae, Compositae, Gentianaceae, Convolvulaceae, Balsaminaceae, Orchidaceae, Asparagaceae, Goodeniaceae, Apocyanaceae, Euphorbiaceae, Oxalidaceae, Lamiaceae and Pontederiaceae. The mite species was distributed in seven districts covering northern, central and southern regions viz., Wayanad, Malappuram, Thrissur, Palakkad, Ernakulam, Alappuzha and Thiruvananthapuram districts of Kerala. Curry leaf, country krait (*Exacum bicolor*), sunflower, Victoria corn plant (*Dracaena* sp.), *Calotropis gigantea*, little tree plant (*Biophytum sensitivum*), holy basil (*Ocimum sanctum*) and the aquatic pickerel weed (*Monochoria vaginalis*) are new host records for *T. gloveri*. The study confirms that the mite species has established and spread across Kerala by widening its host range and expanding its geographical area of distribution, within a short span after its introduction into the state.

Keywords: *Tetranychus okinawanus*, *Tetranychus gloveri*, Kerala, host range, geographical distribution

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