



## Population dynamics of mite species on poplar trees in the Black Sea region of Turkey\*

HUSEYIN BAS<sup>1</sup>, SEBAHAT K. OZMAN-SULLIVAN<sup>1\*</sup>, EDWARD A. UECKERMANN<sup>2</sup>, PHILIPP E. CHETVERIKOV<sup>3</sup> & ISMAIL DOKER<sup>4</sup>

<sup>1</sup>Ondokuz Mayıs University, Faculty of Agriculture, Department of Plant Protection, 55139 Samsun, Turkey

✉ [hsynbs1@outlook.com](mailto:hsynbs1@outlook.com); <https://orcid.org/0000-0003-0009-3780>

✉ [sozman@omu.edu.tr](mailto:sozman@omu.edu.tr); <https://orcid.org/0000-0001-5240-8110>

<sup>2</sup>North-West University, Unit for Environmental Sciences and Management, Potchefstroom Campus, 2520 Potchefstroom, South Africa

✉ [edalbert@lantic.net](mailto:edalbert@lantic.net); <https://orcid.org/0000-0003-4213-4309>

<sup>3</sup>Russian Academy of Sciences, Zoological Institute, Universitetskaya nab. 1, 199034 St. Petersburg, Russia

✉ [philipp-chetverikov@yandex.ru](mailto:philipp-chetverikov@yandex.ru); <https://orcid.org/0000-0003-1300-1486>

<sup>4</sup>Cukurova University, Faculty of Agriculture, Department of Plant Protection, 01330 Adana, Turkey

✉ [idoker@cu.edu.tr](mailto:idoker@cu.edu.tr); <https://orcid.org/0000-0002-1412-1554>

\*Corresponding author

\*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.

The enormous number of mite species across the world includes economically important pests of agricultural plants and forest trees and biological control agents. However, knowledge of their biology and ecology is greatly lacking. Poplar (*Populus* spp.) is grown in many countries and a number of mite species have previously been recorded. This study was conducted to determine the population dynamics of mites on poplar in 2021 in Samsun Province, Turkey where it is widely grown in plantations, along property boundaries and as a landscape tree. Surveys were done at three sites during approximately five months of the vegetation period. Fifty leaves were collected randomly from each site at ten-day intervals. The mites were collected from two- and four-square centimetres areas on the upper and lower leaf surfaces under a stereomicroscope. All mites collected were preserved in 70% ethyl-alcohol, cleared in lactophenol and then mounted on slides by using Hoyer's medium. Eriophyoid, tetranychid, phytoseiid and tydeid species were identified. *Aculus mogerii* was the most common eriophyoid species. The highest density of this vagrant mite was found in July but it was low. There was only one tetranychid species, *Eotetranychus populi*. Its highest population density was in September. In association with these phytophagous species, phytoseiid mites were found, with *Amblyseius andersoni* being one of the common species. Three tydeid species were also found; *Tydeus spathulatus* was the most common species and its highest density was in October. The level of mite diversity recorded may reflect the age and size of the poplar trees as perennial habitat and the absence of pesticide use. In addition, the predatory mites might have reduced the numbers of phytophagous mites.

This research is part of the first author's Master's thesis. It was supported by the Scientific Research Foundation of Ondokuz Mayıs University in Samsun, Turkey (PYO.ZRT.1904.21.016) and The Scientific and Technological Research Council of Turkey (TUBITAK) (220N174). The fourth author was supported by the Russian Foundation for Basic Research (RFBR) under the research project #21-54-46003.

**Keywords:** Acari, eriophyoid, tetranychid, tydeid, phytoseiid, population density, ecology