

Anschrift der Verfasser:innen

Katharina PLATZGUMMER (Korrespondenzautorin), Ina HOXHA, Julia WALOCHNIK, Edwin KNIHA, Institut für Spezifische Prophylaxe und Tropenmedizin, Medizinische Universität Wien, Wien, Österreich. E-Mail: katharina.platzgummer@meduniwien.ac.at

Sandra OERTHER, Heidelberger Institut für Global Health, Heidelberg, Deutschland.

Vít DVOŘÁK, Jovana SADLOVA, Barbora VOJTKOVA, Tomas BECVAR, Petr VOLF, Department für Parasitologie, Fakultät für Wissenschaften, Karlsuniversität Prag, Prag, Tschechische Republik.

Adelheid G. OBWALLER, Abteilung Wissenschaft, Forschung und Entwicklung, Bundesministerium für Landesverteidigung, Wien, Österreich.

Wolfgang POEPPL, Abteilung für Dermatologie und Tropenmedizin, Sanitätszentrum Ost, Österreichisches Bundesheer, Wien, Österreich.

Attila J. TRÁJER, Pannonische Universität Veszprém, Sustainability Solutions Research Lab, Veszprém, Ungarn.

Exploring micro plastic pollution in bees and flowers

KENNETH KUBA, RAQUEL MORELL KESSLER, KIM KÖNIG, LORENZ GESSL & SARA D. LEONHARDT

Micro plastics are known to negatively affect bees as recent studies further highlighted. Micro plastic particles can disrupt the gut, impair cognitive functions and increase mortality. However, studies on the uptake of micro plastics by (wild)bees under field realistic conditions as well as tests on larvae especially with compound mixtures have hardly been performed. In our study, we address both the uptake of micro plastic from the environment and the effect of a micro plastic mix on bee larvae. We sampled nectar from flowering plants as well as the bee species feeding on them. Both bees and plants were sampled together to be able to link flower contents with the gut contents of the bees. Both were analysed with a newly developed method using Nile Red staining and fluorescent microscopy. The protocol followed MEYERS ET AL. 2022, but was adapted for nectar and gut samples in a terrestrial environment as well as further automatised. To additionally assess the effect of micro plastics on bee larvae, we fed wild bee larvae diets containing different concentrations of a mixture with three different micro plastics and observed the developmental processes. Our results show that the newly developed method is suitable to assess micro plastics in terrestrial samples. Using this method, we provide the first insights into levels of contamination by micro plastic in flower resources that are important for pollinators, as well as into the amount of plastic that ends up in the digestive tract of wild bees. This is especially important for assessing the potential ecotoxicological effects of these particles in insects. In combination with results of the observations and measurements of the larval development under micro plastic influence we can further assess effects on exposed wild bee populations.

Anschrift der Verfasser:innen

Kenneth KUBA (corresponding author), Raquel Morell KESSLER, Kim KÖNIG, Lorenz GESSL, Sara D. LEONHARDT, Chair of Plant-Insect-Interactions, School of Life Sciences, Technical University Munich, Freising, Germany. E-Mail: kenneth.kuba@tum.de

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Entomologica Austriaca](#)

Jahr/Year: 2025

Band/Volume: [0032](#)

Autor(en)/Author(s): Kuba Kenneth, Diverse Autoren

Artikel/Article: [Exploring micro plastic pollution in bees and owers 195](#)