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# Overview of the impacts of microplastics on terrestrial crustacean *Porcellio scaber*: from immune response to higher-tier levels

Anita Jemec\*<sup>1</sup>, Andraz Dolar<sup>2</sup>, and Damjana Drobne<sup>2</sup>

<sup>1</sup>University of Ljubljana, Biotechnical faculty – Jamnikarjeva 101, Ljubljana, Slovenia

<sup>2</sup>University of Ljubljana, Biotechnical Faculty – Jamnikarjeva 101, 1000 Ljubljana, Slovenia

## Abstract

Terrestrial invertebrates, including crustaceans, are exposed to various types of microplastics in soil. They ingest the soil with microplastics or are exposed through body surface contact. In recent years we have gathered considerable information regarding the response of woodlice *Porcellio scaber* to various types of microplastics in soil: tire wear particles, textile fibers, polypropylene microplastics from disposable medical masks, LDPE fragments from packaging, and LDPE fragments milled from non-degradable and biodegradable mulching films. We will present an overview how woodlice respond to microplastics exposure by inducing an immune response shortly after the exposure and how this alteration is gradually decreased to basal levels after longer exposure times. The immune response was followed at the cellular and humoral levels. We will shed a light upon what this change in immune status means for the overall immunocompetence of woodlice. In addition, higher-tier endpoints, such as energy related traits, survival and feeding were followed. We will discuss how the response differs between different types of microplastics and whether plastics associated chemicals might contribute to observed effects.

**Keywords:** woodlice, immune response, energy related traits, biodegradable, ldpe, textile, tires

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\*Speaker