

very little of the effects of DEP and PAHs on invertebrates. A large number of wild plants are pollinated by insects, some even predominantly or exclusively by bumblebees. Close to areas with heavy traffic highly active, flying insect pollinators are likely exposed to high amounts of DEP and thus might suffer potential negative effects. Those negative effects could trigger an even greater loss of plant diversity, which pose nutrition, hiding spaces etc. to a lot of organisms. We exposed individuals of the buff-tailed bumblebee *Bombus terrestris* to different concentrations of DEP/ sugar water solution suspensions in acute and chronic oral exposure experiments to investigate dose- dependent effects of DEP on survival and fat body content, as a proxy for an insects' health condition. Acute exposure to DEP showed no effect on survival or fat body content of *B. terrestris*. However, chronic exposure to high doses of DEP lead to a significantly reduced survival of bumblebees by almost 50 % compared to controls. Further, the fat body content of DEP exposed bumblebees was significantly reduced in bumblebees exposed to 0.5 g/l DEP compared to controls. Next to the dietary exposure we investigated the effects of DEP on bumblebees via airstream. For that, we exposed the bumblebees to an airstream with defined particle concentrations and performed electroantennography and scanning electron microscopy after exposure. There was no significant reduction in amplitude intensity in bumblebees exposed to DEP compared to the control. Our results give insights into how accumulation of high concentrations of DEP e.g., near heavily trafficked sites, can influence insect pollinators' health and survival.

#### **8.04.P-Th246 Effects of Eprinomectin on the Reproduction of Earthworms and Springtails** *Raphael Souza*<sup>1</sup>, *Cleiton Souza*<sup>2</sup>, *Ana Paula Braga*<sup>3</sup> and *José Roberto Guimarães*<sup>4</sup>, (1)University of Campinas UNICAMP, Brazil, (2)ASR Analytical & Scientific Research, Brazil, (3)São Paulo State University UNESP, Brazil, (4)UNICAMP University of Campinas, Brazil

Eprinomectin (EPR) is a veterinary drug belonging to the avermectin family and it is commonly used to combat a wide variety of parasites. Large quantities of veterinary drugs are used by rural producers in order to maintain the high productivity of the livestock sector and reduce financial losses caused by different diseases, but they can cause an environmental impact. Approximately 90% of EPR can be excreted in the dung of treated animals and can be found in soil in concentrations ranging from ng/g to ?g/g. So, the objective of this study was analyzing the effects of different concentrations of EPR in a tropical soil on the reproduction of earthworms (*Eisenia Andrei*) and springtails (*Folsomia candida*). For this purpose, soil was contaminated one day prior the experiments with the following concentrations of EPR: C1 = 0.5 ?g/g; C2 = 1.0 ?g/g; C3 = 2.0 ?g/g; C4 = 4.0 ?g/g; C5 = 8.0 ?g/g; C6 = 16.0 ?g/g; C7 = 32.0 ?g/g; C8 = 64.0 ?g/g; and C9 = 128.0 ?g/g (C9 was not carried out in the experiment with earthworms). As the stock solution used to contaminate the soil was prepared with ethanol, a treatment containing soil+ethanol was also performed. A negative control containing uncontaminated soil was also carried out. Experiments were based on ISO 11267 and ISO 17512-1. Ten adult specimens of springtails were placed in glass containers with 30 g of soil for 28 days and then the number of juveniles was counted; ten adult specimens of earthworms were placed in glass containers with 500 g of soil for 28 days and the counting of the number of juveniles occurred 56 days after the beginning of the experiment. According to the statistical analysis, reproduction of springtails was significantly reduced in all concentrations. The exposure of earthworms to the contaminated soil revealed significant decrease in the number of juveniles in concentrations C1, C2, C3, C6, C7 and C8. Decrease in the number of juvenile springtails can be related to the high mortality rate of adults during the exposure, indicating high toxicity to the species. Decrease in the number of juvenile earthworms has been found to other avermectin drugs, such as abamectin, by other researchers in both tropical and temperate climates. So, the results suggest that EPR can affect the reproduction of these two species of soil invertebrates. Financial Support: FAPESP (17/26214-8)

#### **8.04.P-Th247 Effects of Microplastic on the Population Dynamics of a Marine Copepod**

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Microplastic is ubiquitously and persistently present in the marine environment, but knowledge of its population-level effects is limited. In this study, to quantify the potential theoretical population effect of microplastic a two-step approach was followed. First, the impact of microplastic (polyethylene, 0.995 g cm<sup>-3</sup>, diameter 10-45 µm) on the filtration rate of the pelagic copepod *Temora longicornis* was investigated under laboratory conditions. It was found that the filtration rate decreased at increasing microplastic concentrations and followed a concentration-response relationship, but at microplastic concentrations below 100 particles L<sup>-1</sup> the filtration rate was not affected. From the concentration-response relationship between the microplastic concentrations and the individual filtration rate a median effect concentration of the individual filtration rate (48h-EC<sub>50</sub>) of 1956 ± 311 particles L<sup>-1</sup> was found. In a second step, the dynamics of a *T. longicornis* population were simulated for realistic environmental conditions, and the effects of microplastics on the population density equilibrium were assessed. The empirical filtration rate data were incorporated in an individual-based model implementation of the dynamic energy budget theory to deduct potential theoretical population level effects. The yearly averaged concentration at which the population equilibrium density would decrease by 50% was 593 ± 376 particles L<sup>-1</sup>. The theoretical effect concentrations at population level were a fourfold lower than effect concentrations at individual level. However, the theoretical effect concentrations at population level remain three to five orders of magnitude higher than ambient microplastic concentrations. Since the present experiment was short-term laboratory-based and the results were only indirectly validated with field data, the in situ implications of microplastic pollution for zooplankton field populations remains to be further investigated.

#### **8.04.P-Th248 Effects of Plastic on the Freshwater Snail *Biomphalaria Glabrata***

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Since the 1950s, plastic has become increasingly important as a material. However, its long life and decomposition into microplastics cause significant environmental pollution. Therefore, students of the Master's programme "Ecotoxicology and