

ARMADILLIDIUM VULGARE AND THE SURVIVAL CHALLENGES POSED BY AN ANTIBIOTIC

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INTRODUCTION: The growing concern regarding pharmaceuticals arises from their excessive use and subsequent negative impacts on public health and the environment, including selective pressure on living organisms. Among soil species, β -lactam antibiotics such as amoxicillin pose a high environmental risk. Even at low concentrations, these antibiotics have been shown to adversely affect genotoxicity, cytotoxicity, mortality, reproduction, and mobility in both aquatic and terrestrial organisms.

OBJECTIVE: This study aimed to assess the survival of the isopod *Armadillidium vulgare* when exposed to the emerging contaminant amoxicillin.

MATERIALS AND METHODS: Artificial soil was prepared with 72,5% fine sand, 22,5% kaolin, and 5% powdered coconut fiber, adjusted to 60% of the soil's maximum water-holding capacity, and a pH of 6.00 ± 0.1 . Acute toxicity testing followed adaptations of the ABNT NBR 15537:2014 standard, using adult isopods of the species *Armadillidium vulgare* exposed to five concentrations of amoxicillin: 0.65 mg/kg, 2.15 mg/kg, 7.10 mg/kg, 23.67 mg/kg, and 78.89 mg/kg, along with a control. Tests were conducted in aluminum containers with 100 g of soil and five organisms per replicate, maintained at 25°C under a 12-hour light/12-hour dark photoperiod, with food and water replenished every three days. The exposure period lasted 14 days, and survival was assessed on day 14 to estimate the lethal concentration (LC) of amoxicillin for the isopods.

RESULTS AND CONCLUSION: After 14 days, organism survival varied across treatments: 87% survival in the control; 67% at 0.65 mg/kg; 40% at 2.15 mg/kg; 93% at 7.10 mg/kg; 67% at 23.67 mg/kg; and 0% survival at 78.89 mg/kg. The results indicate that survival was influenced by the concentration of amoxicillin, with complete mortality observed at the highest concentration tested (78.89 mg/kg).

Keywords: *Armadillidium vulgare*; Amoxicillin; Survival.

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