

THE AVOIDANCE TEST WITH SPRINGTAILS

TEST ÚNIKOVÉHO CHOVÁNÍ S CHVOSTOSKOKEM

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Abstract:

Recently the avoidance tests are rapidly developing additional tests in the soil ecotoxicology. One of the biggest advantages of these tests is the shorter test period than at conventional reproductive tests. Test runs during 48 - hours, and in some cases can be used 24 - hour tests. Another great advantage of these tests is their high sensitivity. The avoidance response is often more sensitive parameter than the mortality of organisms. In this work, the avoidance behavior in tests evaluated the impact of varied pollutants on soil representatives of mesofauna collembolans species *Folsomia candida*. The influence of the age of the organisms on the test results was also evaluated. The test results were compared with conventional reproduction test conducted on collembolans. For this research was prepared soil according to the OECD guideline. This soil was contaminated with selected kinds of heavy metals (zinc, chromium, cadmium and copper) and standard substance used in soil ecotoxicology the boric acid. The age of used organisms ranged from 10 to 12 days or from 20 to 22 days. Tests lasted for 48 ± 0.5 hours. Any effect of the age of the test organism was demonstrated in tests. The differential sensitivity of the avoidance behavior and reproduction was assessed using the EC_{50} values measured or found in the literature. These data indicates that the test avoidance behavior is significantly more sensitive especially for chromium, cadmium and copper. The reproduction test has a higher sensitivity for zinc and boric acid. The results syndicated that the avoidance test can be a suitable addition to reproduction test and can quickly confirm toxicity, but it cannot be its adequate substitute.

Keywords:

Collembolans, *Folsomia candida*, avoidance test, reproduction test, heavy metals, boric acid