

Toxicity of antibacterial wet wipes according to a growth test with *Lepidium* sativum

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Abstract

The pursuit of a zero-pollution, toxic-free environment is envisaged, among other things, within the framework of the integrated approach of the EU Green Deal. The use of wet wipes in everyday life and the growth of their accumulation in the environment determines their consideration as pollutants. The aim of this study was to investigate the toxicity of antibacterial wet wipes using a *Lepidium sativum* growth test. 5 types of antibacterial wet wipes produced in Ukraine and freely available in the country's retail network were used. The seeds of *L. sativum* were germinated for 5 days on the surface of circles, cut from the studied wet wipes (experiment) or filter paper (control), moistened with distilled water. The energy of seed germination, seed germination, the length of roots and the above-ground part of seedlings were defined. A statistically significant decrease in the energy of seed germination and its germination compared to the control was established under the influence of 4 types of analyzed wet wipes. The index of the length of the roots and the above-ground part of the seedlings was significantly less than in the control under the influence of all analyzed wet wipes. Thus, the tested wet wipes are extremely toxic and may be a potential source of toxic substances. Reducing the toxicity of these products, in particular, by using eco-friendly substances for their hydration, should be one of the priorities of achieving the decrease of the pollution levels below the threshold of danger for human health and the environment.

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