The Effects of Menstrual Product Leachates on Planarian Survival

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Recent studies have identified potentially harmful substances in menstrual products. However, the biological effects of exposure to these substances through menstrual products are poorly explored. The purpose of this study was to investigate the effects of menstrual product exposure on planaria survival. An artificial vaginal fluid (AVF) was prepared, and menstrual product leachates were generated by submerging four commercially available products in it (2 tampon products and 2 pad products). Two preliminary phases and a final comparative study were conducted. During preliminary test 1, the AVF leachates were exposed to planarians without filtration. In preliminary test 2, cell strainers were used to filter debris and fibers from the AVF leachates. During the final experiment, four more leachates were created by soaking the products in spring water in order to compare survival between exposure media. This experiment resulted in significant survival differences between planaria based on product and exposure medium. One pad-based product resulted in complete mortality under all conditions, while the remaining products had varying survival outcomes. Kruskal–Wallis tests showed significant statistical differences in survival among product groups within both exposure conditions, supported by Bonferroni-corrected pairwise comparisons. ICP-MS analysis detected measurable metal concentrations in product leachates. These results demonstrate that menstrual products vary in their biological impact and that exposure conditions influence toxicity, highlighting the importance of evaluating the biological effects of menstrual product exposure.

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