Usefulness in Daily Life Sometimes Contains Danger: The Impact of Methylparaben to the Ghost Shrimp

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Methylparaben is the preservative commonly used in cosmetic, pharmaceutical, and industrial products. It is a biodegradable substance, however; it cannot be completely removed during wastewater treatment. The purpose of the experimentation is to observe how methylparaben affects the survivorship of ghost shrimp, a freshwater shrimp. It was hypothesized that the metylparaben concentration will affect the lifespan of ghost shrimp. Distilled water was poured into one of the five fish tanks. Then 0.01% and 0.05% concentration of methylparaben solutions were made by mixing methylparaben with the distilled water. Each solution was poured into two tanks. 10 ghost shrimp were put into all 5 tanks and monitored. The process was repeated for 0.001% and 0.005% solutions. It turned out that ghost shrimp in the higher concentration had a shorter lifespan. The average number of days that 10 ghost shrimp lived was 1 day in 0.05% solution and 2.5 days in 0.01% solution. 0.005% and 0.001% solutions are still in progress. However, ghost shrimp in the control group lived 31 days. Lifespan is not the only thing affected. Methylparaben also causes shrimps to hardly move. 44% of shrimps in any of the solutions did not move their entire body, but only moved their legs before they died. This experimentation demonstrates that methylparaben unremoved during wastewater treatment and disposed into river or lake can cause a huge environmental problem. It would affect the lifespans of both ghost shrimp and other aquatic organisms that feed off of the shrimps.

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