Triclosan: The Snail's Achilles' Heel

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The purpose of this experiment was to determine the effects of triclosan on the muscle functioning of a Pomacea diffusa snail. Triclosan is an antibacterial chemical found in consumer products like soap, deodorant, and toothpaste. Using distilled water and triclosan powder, 0.0%, 0.1%, 0.2% and 0.3% triclosan solutions were prepared. It was hypothesized that the snails exposed to the chemical would demonstrate a decrease in muscle functioning by failing to respond when stimulated by touch. It was also predicted that, as the concentration of triclosan increased, so would the time required for the snails to recover their touch-responses. The final part of the hypothesis was that, as the experiment progressed, the recovery time would increase. Three snails were placed in each solution and tested for a touch-response after 10 minutes of exposure. Then, the impaired snails were placed back into their own aquarium water and tested at 5 minute intervals until they recovered their touch-responses. The snails in the 0.0% solution had normal touch-responses 100% of the time and therefore had an average recovery time of 0 minutes. As hypothesized, all three groups of experimental snails displayed a pattern of generally increasing recovery time. Also as predicted, the 0.3% solution snails had the greatest average recovery time of 24.45 minutes. This was followed by the 0.2% solution snails with 18.61 minutes and the 0.1% solution snails with 8.61 minutes. Research suggests that the impairment of ryanodine receptors in their muscle cells caused the snails to experience decreased muscle functioning.

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