The Influence of Ecologically Relevant Triclosan Concentrations on the Reproductive Success of Daphnia magna

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The purpose of our experiment was to test the effect of Minnesota triclosan concentrations on the reproductive rate of Daphnia magna. We hypothesized that in D. magna samples exposed to greater concentrations of triclosan, there would be a greater observable difference on the reproductive rate. Our null hypothesis stated that the differing concentrations of triclosan would have no effect on the reproductive success of D. magna and their reproductive rate would remain the same as the control. To conduct this experiment, we ran five trials of each concentration of triclosan: 410 ng/L, 180 ng/L, 18 ng/L, and the control of pure spring water. We introduced 10 D. magna into each trial and observed the recorded the changes in population for 21 days. Our data showed that the difference in reproduction rates between the control and the 410 ng/L concentration was statistically significant. We can fully reject our null hypothesis and conclude that, at the highest concentration of 410 ng/L, triclosan did have a detrimental effect on the reproductive systems of D. magna. There was conclusive evidence to prove our alternate hypothesis correct, that the triclosan had an effect on the D. magna at the 410 ng/L level. However, there is not statistical evidence to prove that the 18 ng/L and the 180 ng/L concentrations had an effect on the D. magna.

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