Effects of Gasoline on RGB Values of Montipora capricornis and Pavona frondifera Corals

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Coral reefs are one of the most diverse ecosystems in the world. With the use of motor boats, gasoline is being emitted into the ocean everyday at an alarming rate. The objective of this study was to discover the effects of gasoline on the red, green, and blue (RGB) pixel values of Montipora capricornis and Pavona frondifera, two common hard corals. Ten coral samples of each species were submersed in water containing 1 cubic centimeter of gasoline for seven days. Water pumps were attached to each tank to create water flow. RGB values of the coral samples were recorded before and after exposure to gasoline using a Ziess Stereo Dissecting Scope that contained a built in camera. The results of the test and control groups from the final day were analyzed using a Two Way Anova Test and Tukey-Kramer Honestly Signifigance Test. A significance value of a=0.05 was used. The tests displayed a p-value of 0.0010 when the red values of both of the coral species were compared to the treatment groups. These tests displayed a p-value of 0.0071 when the same tests were run on the blue values. This shows that there was a statistically significant difference in color depletion between both species and between the treatment groups. The tests displayed a p-value of 0.0001 when the green values of the treatment groups were compared against each other. This shows that there was a statistically significant difference between the control and test groups in both species in the green values. This was supporting evidence that gasoline serves as a harsh pollutant to Montipora capricornis and Pavona frondifera corals. This study helps to give a better understanding of what else may be contributing to coral reef destruction and serves as an important step in helping to save these biodiverse habitats.

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