The Effect of Hordeum vulgare l. Extract and Phragmites australis Extract on the Growth of Algae in a Freshwater Environment

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For more than a decade, the Tarrytown Reservoirs have had a severe algae problem which has resulted in an imbalanced ecosystem and an unpleasant aesthetic. The problem has been managed with varying degrees of success, but it remains an ongoing concern. The effect of both barley straw extract and phragmites extract (an invasive plant found in abundance around the reservoirs) on algae growth was assessed in this study. Beakers were set up containing various concentrations of the barley straw extract as well as phragmites extract, and for 35 days the chlorophyll a concentration of each of the beakers was monitored. Algae growth was inhibited by certain concentrations of the barley straw extract (most effectively by the 0.05% v/v and 0.1% v/v concentration) with the average chlorophyll a concentration remaining significantly lower than that of the control. On the other hand, algae growth was stimulated by certain concentrations of phragmites extract (most effectively by the 0.5% v/v concentration) with the average chlorophyll a concentration significantly exceeding that of the control. This experiment showed that certain concentrations of barley straw extract inhibit algae growth and that certain concentrations of phragmites extract encourage algae growth.

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