The Effects of Bacillus Bacteria on the Invasive Species Lemna minor (Duckweed)

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Research was conducted testing the growth of Duckweed after the introduction of the probiotic bacteria, Bacillus. The purpose of this experiment was to restrict the growth of the invasive aquatic plant, Duckweed, using bacteria that limits the amount of nutrients in freshwater and causes root-damage to plants. To conduct the experiment, Duckweed was used in three experimental groups and one control group. The experimental groups each obtained different species of Bacillus bacteria including Bacillus cereus, Bacillus megaterium, and Bacillus subtilis. The growth of the Duckweed was monitored every two days for two weeks by measuring frond fresh weight. To calculate frond fresh weight, Duckweed fronds were carefully blotted dry on paper towels and the fresh weight was measured in grams. Two identical rounds of the experiment were conducted. The results showed that duckweed with 500 microliters of Bacillus megaterium had the greatest decrease in growth, 68.3%. The objectives of this experiment were met as results showed how different species of Bacillus bacteria affected the growth of Duckweed. This research can be used to further expand the knowledge of biological control and invasive species, such as Duckweed.

Awards Won:
Arizona State University: Arizona State University Intel ISEF Scholarship