Catching Plastics: Which Species of Algae Can Best Catch Microplastics?

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Microplastics have been spreading throughout the environment, are being incorporated into food webs and are even found in humans. It is critical that there is a system to remove microplastics from the environment and a possible solution might be algae. Algae can grow in almost any condition and has been shown to be able to catch microplastics. In this experiment, six different species of algae were tested for their ability to capture microplastics. Cladophora, Oscillatoria, Closterium, Oedogonium, Synedra, and Volvox algae were grown for a week. 50 microplastic beads from a facial scrub were added to each flask. Four of the six species tested caught microplastics when grown in a flask with microplastics for one week. New cultures of Cladophora, Oscillatoria, Closterium, Oedogonium, were each split into three petri dishes with 125 microplastics and grown for two weeks. Samples were analyzed at one and two weeks. There was significant growth in all algae at one week and all captured four or more microplastics. In week two, there was more algal growth and an increase in the number of captured microplastics. Oscillatoria was able to catch all the microplastics.

Awards Won:
Arizona State University: Arizona State University ISEF Scholarship (valued at up to $52,000 each)
University of Arizona: Renewal Tuition Scholarship