Implementation of Gracilaria as a Biofilter for Nutrient Pollution

Adusumilli, Yashwin (School: Florida Atlantic University High School)

The research conducted on Gracilaria tikvahiae seaweed as a biofilter for nutrient pollution in brackish water environments revealed promising results. Through a controlled simulation of nutrient pollution, the seaweed consistently demonstrated its ability to absorb nitrogen and phosphorus, key contributors to harmful algal blooms. The study not only confirmed the construct validity of Gracilaria nutrient absorption capacity but also established the reliability of its performance under varying environmental conditions. The observed impact of the seaweed in preserving marine biodiversity, restoring brackish water ecosystems, and promoting sustainability in various sectors underscores its potential as a valuable solution to the global issue of nutrient pollution runoff. With robust growth and efficient nutrient uptake, Gracilaria tikvahiae emerges as a sustainable biofilter with applications in water treatment, aquaculture, and coastal nutrient management, offering tangible benefits for environmental conservation and health. Along with the trial, floatation devices to hold Gracilaria in such conditions are being designed.

Awards Won: