

EFFECTS OF GLYPHOSATE (RODEO) ON THE GROWTH OF PLANKTONIC CYANOBACTERIA

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The widespread application of glyphosate as an aquatic herbicide has been disputed based on its potential secondary effects on aquatic algae, especially those that form harmful algal blooms (HABs). Glyphosate, the active ingredient in the commercial aquatic herbicide Rodeo, is thought to stimulate algal growth, primarily of cyanobacteria, with an inorganic form of phosphorus (P). In order to investigate the role of glyphosate (Rodeo) on the growth of planktonic bloom forming cyanobacteria, we inoculated *Microcystis aeruginosa* and *Aphanizomenon* sp. into BG11 supplemented with glyphosate. Rodeo (glyphosate) was applied to cultures using relative field application rates (1, 3, and 30ppm) together with both normal BG11 and BG11 without P. Cultures were incubated at 25°C, on a rotary shaker (120 rpm) for two weeks. Growth was monitored using a plate reader for *in situ* chlorophyll *a* and phycocyanin quantification. Preliminary results suggest that the addition of glyphosate to BG11 can stimulate the growth of these two planktonic cyanobacteria. Further research aims at testing the effect of glyphosate on other planktonic cyanobacteria and benthic cyanobacteria due to the possibility of differing responses based on evolutionary history, physiology, and location in the aquatic system. In addition, experiments at mesocosm scales are planned.

PRESENTER BIO: Maximiliano Barbosa is a PhD student in the Agronomy Department working at the Fort Lauderdale Research and Education Center of the University of Florida. He works under the supervision of Dr. Dail Laughinghouse in research relating to cyanobacterial algal blooms, algal ecology, and applied phycology.