

W. Hall Matthews

*Algistatic Effects of Retail Barley Products on the Cyanobacteria, Anabaena in Fresh Water*

There is an ecological crisis in Florida. Pollution rich water is being dumped from Lake Okeechobee into the Indian River Lagoon overfeeding blue-green algae and causing disastrous blooms. The purpose of this project was to test algistatic claims of retail barley products as an environmentally safe solution. I hypothesized that all of the products would more greatly decrease the growth of Anabaena, a cyanobacteria present in Lake Okeechobee, over 21 days than the control. The extract as the most processed product would reduce growth the most and the straw the least. Controlled conditions for duplicate samples of Anabaena tested barley straw, pellets, and extract in concentrations as usage labels directed. Using a Carolina® Spectroscopy Chamber and a cellular phone color analyzer app, data for red, green, and blue was recorded every 7 days. The average numerical color data collected confirmed the visual results which did partially support my original hypothesis. The extract prohibited the growth of Anabaena the most, 64% less growth compared to the control. The straw was second at 19% and the pellets were third at 18%. This project successfully tested the algistatic claims of 3 environmentally safe barley products. There was a troubling difference between growth in all of the duplicate samples. These differences may be from unequally distributed cyanobacteria at the beginning of the experiment. In conclusion, all retail barley products on average did decrease the growth of Anabaena as compared to the average control. Barley extract had the greatest algistatic affect compared to the control.