

CALIFORNIA STATE SCIENCE FAIR 2015 PROJECT SUMMARY

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Project Number

Project Title

Effect of YO12N on Hymenochirus Eggs and Ankistrodesmus Algae

Abstract

Objectives/Goals The object is to test if YO12N the affects Hymenochirus frog eggs and Ankistrodesmus algae growth. Methods/Materials

Ankistrodesmus algae growth

40 test specimens; 10ea x 3 independent variables and 10 control group specimen. 30ml of

Ankistrodesmus living algae will be placed in each of 40 individual 8oz plastic containers. YO12N will be diluted with water to 10ppm, 20ppm, and 30ppm, and then added to the algae specimen. A

spectrophotometer will be calibrated to 540 nanometers. 7ml of algae will be drawn from each specimen and placed into spectrophotometer. Readings will be taken on day 1 and every 2 days for 15 days. Hymenochirus frog eggs

40 test specimens; 10ea x 3 independent variables and 10 control group specimen. 10 eggs will be placed into each cup and the cups placed into a warm water bath. YO12N will be diluted with water to 10ppm, 20ppm, and 30ppm, and then added to the frog egg specimen. Frog egg hatch rates will be counted daily for 5 days.

Results

Ankistrodesmus algae growth

Control- 84.0, 1%-78.3, 2%- 83.0, 3%- 80.8

Hymenochirus frog eggs

Control- 5.80, 1% - 4.98, 2% - 4.10, 3% - 3.02

The 2% solution had the lowest algae growth when compared to the other solutions tested, but did not show lower growth than the control. The 1% solution had the highest egg hatch rate when compared to the other solutions tested, with 85% of the control hatch rate.

Conclusions/Discussion

With our clean water supplies decreasing, a study of YO12N (Yellow Out#) as a remediation application for eutrophication is important. YO12N shows promise in reducing eutrophication without harming other species.

Summary Statement

Can YO12N be applied to an aquatic environment as a treatment for eutrophication?

Help Received

Borrowed spectrophotometer from Mr. Aalto, Sanger High School science teacher.