CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
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Project Number
36134

Project Title
Nitrates: A Study of Fish Growth

Abstract

Objectives/Goals
The objective of this study was to determine the growth rate percentages by weight to a common goldfish raised in nitrate rich well water vs. purified drinking water with a minor study on the role aeration plays within these samples.

Methods/Materials
Ten individual 1-gallon tanks, ten common goldfish - five tanks of nitrate rich well water & five tanks of purified drinking water. Aeration source for two of each water types. Weighed fish on calibrated, digital gram scale to plot growth rate percentage by weight over the course of the study. Provided fish with a calibrated amount of food to provide equal opportunity for growth throughout the sample size.

Results
The weights of the ten common goldfish were plotted over the course of the test period and results compared. The five fish raised in purified drinking water exhibited an average growth weight percentage average of 68.5% vs. the nitrate rich well water raised fish growth weight percentage average of 59.9%. The aerated water had little to no affect on the fish growth weight percentage across my sample size.

Conclusions/Discussion
Based on my sample size of ten common goldfish, the growth weight percentage of the five subjects raised in purified drinking water proved to be greater. These results may point to a negative growth affect to fish subjected to a fed water source known to contain high nitrates such as lakes located near agricultural fields.

Summary Statement
I proved fish raised in nitrate rich well water exhibit a lower growth weight percentage than those raised in a purified water source

Help Received
I performed my own research and accepted minimal assistance from my father during the setup of my experiment at home