CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J0812

Project Title
The Reduction of Fertilizer Contaminates in Agricultural Runoff

Abstract

Objectives/Goals
The goal of my project is to find a filter which is made out of biological materials, which are effective in filtering out both nitrate and phosphorous levels from agricultural runoff.

Methods/Materials
I plan to test and prove my theory by passing agricultural runnoff through a variety of biofilters. My materials are a Hach Field Test Kit along with different biological materials which make up my biofilters.

Results
Through my trials I was able to successfully create only one filter out of the seven that reduced the contaminates in agricultural runoff. My control had a nitrate level of 1056 mg/L and phosphorous level of .33 mg/L. The filter which was most effective, fir bark and coir fiber combination, reduced the nitate level to 286 mg/L and phosphorous levels to 0mg/L.

Conclusions/Discussion
As a tool for decreasing the amount of nitrate and phosphorous in agricultural runoff, the mixing of fir bark and coir fiber resulted in being the most successful. In conclusion, I can confidently state that my project was a success. Seeing that the fir bark/coir fiber combination filter performed exceptionally well in reducing the nitrate as well as completely eliminating the phosphorous in the agricultural runoff. Through my findings many agricultural businesses will now be able to have cleaner runoff resulting in a healthier ecosystem.

Summary Statement
My project is an expirement to determine whether or not certain natural materials are effective in filtering out nitrate and phosphorous in agricultural runoff.

Help Received
My father took me to a local nurery to collect my control sample.