



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Gemma M. Taylor	Project Number J1022
Project Title Can Mushrooms Clean Up Fertilizer Runoff?	
Objectives/Goals To find if Pleurotus ostreatus mycelium is an effective ammonia remover in freshwater environments.	
Abstract	
Methods/Materials Materials: -18ml Scott's MiracleGro liquid houseplant fertilizer -3 Critter Carriers -75 grams of Pleurotus ostreatus mycelium -75 grams of alder sawdust -2 empty medium sized mesh filter bags -APA aquarium test kit -Rainwater(with zero ppm of ammonia, etc.) Methods: 1. Place an equal amount of water into each container 2. Take all the mycelium and place it into a filter bag 3. Take all the sawdust and place it in a filter bag 4. Add 6ml of fertilizer to each container 5. Place the sawdust in one container and the mycelium in another. Mark as such 6. Leave one undisturbed as a control 7. Measure daily for ammonia 8. Record all relevant information 9. Continue experiment for nine days	
Results This experiment had some very interesting data. All of the tanks tested had the same level of ammonia for the first four days, at approximately nine ppm (parts per million). Then the mycelium test dropped to eight ppm. The next day it plummeted to four ppm, then two ppm. It remained at two ppm for the rest of the experiment. The sawdust stayed at nine ppm for the first five days, then dropped to eight ppm. The control stayed the same throughout, at the original nine ppm.	
Conclusions/Discussion Pleurotus ostreatus mycelium did reduce ammonia while the other tests did not. Therefore, the hypothesis was correct. The major drops in the data of the mycelium occurred when the author tried to partially suspend the mycelium in the water using surgical gauze. This was due to the fact that the mycelium was	
Summary Statement Pleurotus ostreatus mycelium is an effective de-ammoniator in a freshwater environment.	
Help Received Mother sourced outcast work materials to be repurposed in experiment. Father assisted in formatting presentation board.	