Shrimply Clean: Effects of Mussels and Prawn on Water Quality

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The purpose of this project is to determine if mussels would be able to clean water that shrimp live in. Four mussels were put into one 10-gallon tank while another 5-10 gallon tank was setup for shrimp only. Forty shrimp were divided up into the two tanks. The shrimp were fed their standard shrimp feed which helps them grow, while the mussels feed off the waste the shrimp leave behind. Every Sunday and Wednesday the water quality was tested by putting the test strips in for 1-2 seconds after the strips were taken out they need to sit on a flat surface for one minute then data can be collected. Shrimp are territorial, so a shelf-like structure was made to give them more space. Every other day three pellets of food would be put in the tanks and left for the shrimp to eat. As the days passed, in the tank with no mussels the water got steadily cloudier and orange while the tank with both shrimp and mussels stayed clear. After the two-week mark, the shrimp only tank was opaque. The water quality decreased every day and all shrimp in the mussel-less tank failed. Analysis of the data collected showed mussels do maintain proper water quality for freshwater prawn to survive. The nitrates and the nitrites having a higher P-Value in the tank with no mussels then the tank with mussels proved this. In the tank with no mussels, the P values stayed at a higher level around1.13 or 1.10 this is bad considering that the nitrate and nitrite levels should be below 0.003.

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