The Distribution of Enterococci in Shoreline Sediment of Lake Carroll

The purpose of this experiment was to determine the difference of enterococci levels with increasing depths of shoreline sediment beneath aquatic vegetation and sediment clear of vegetation. A preliminary goal of this project was to establish which testing method (shaken, blended or vortex) was best in determining a reliable method for enumeration of fecal indicator bacteria in sediment. The hypothesis states due to substantial enterococci in shoreline vegetation, there will be significantly increased enterococci levels in sediment beneath the aquatic vegetation than will be found in sediment clear of, yet adjacent to the vegetation. There will also be decreasing enterococci levels with increasing sediment depth. Vegetation and sediment were collected along the vegetation line on the shoreline following standard protocols. Sediment was collected at 0-3 cm, 4-6 cm, 7-9 cm and 10-15 cm under vegetation area and adjacent exposed area. Vegetation samples were blended, sediment hand-shaken. Samples were filtered using Enterococci EPA Method-1604. The data collected did not fully support the hypothesis. While higher enterococci levels were observed in the sediment under the vegetation at all levels except for 10-15 cm, decreased levels in the exposed sediment were not found to be statistically different. The data in both the exposed sediment and the sediment under the vegetation supported the trend of decreasing enterococci with depth. Future areas of research could focus on the importance of naturally occurring enterococci colonies in the vegetation or sand in relation to enteric viruses, and computer visualizations of enterococci levels in freshwater environments.

Awards Won: