

Microbiological Water Safety Monitoring

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The goal of the MWSM subteam is to find a method that efficiently, cheaply, and effectively detects pathogens in drinking water following its treatment in the plant. We plan on researching and identifying relevant methods using faecal indicator organisms and comparing their strengths and weaknesses. More experimental methods will be researched and tested as well, including the possibility of using a liquid culture colony in a tube that takes advantage of the slow diffusion rate of bacteria to detect bacterial colonies.

All methods researched must be utilizable in a low resource setting such as Honduras where materials are more scarce and laboratory settings are not available.

Spring 2016

Considering the ultimate goals for the microbiological water safety monitoring team, it is necessary to research and understand the options available for pathogenic detection in water. Both established microbiological tests and the theoretical "sliding colony counter" method will be evaluated. Upon understanding the cost and efficiency of each method, it will be possible to narrow down the method that can be used as a model for microbial detection for AguaClara's purposes. Understanding the research done by others is vital to saving time in producing the desired detector.

Introduction

Once the water has left the treatment plant, final tests must be done to ensure it is safe to drink. Currently, microbiological water testing is expensive and requires an incubation time of 24-48 hours to show results. A common method the compartmentalized bag test, which is a presence/absence test using E-coli (recommended by the World Health Organization (WHO)) as an indicator. There are other methods that quantify pathogens, giving an exact amount rather than just presence or absence. The problem with any method is that it must be practical, or done without large amounts of resources, as these resources will not be available in Honduras.

Members

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Documents

	Challenges	Tasks	Symposium	Final Presentation	Final Report
Spring '16				 	 