

Pure Water's Sawyer Filter Experiment

INTRODUCTION:

In 2010, Pure Water for the World, Inc. (PWW) began a pilot project to install Sawyer PointOne water filters in homes in rural communities located in Trojes, Honduras in order to determine if they were another option to provide safe point of use water filtration to homes. PWW is always interested in finding new safe water treatment technologies. The Sawyer filters were recommended to PWW as an effective long term safe household water treatment technology. The represented longevity and effectiveness of the filters coupled with their ease of installation was encouraging; if the filter could perform as claimed. If so, then they had the potential of being a more suitable alternative household water filtration system for some of our work in remote, rural regions in developing countries.

Although the Sawyer filter technology seemed very promising, PWW knew that monitoring and follow up was required to gain empirical evidence regarding its long-term sustainability in the field. Over the course of a three-year span, after installing the initial Sawyer filters in selected communities, our Honduras team conducted ongoing monitoring and follow-up visits, along with water quality testing, to randomly selected homes.

These field tests, conducted under the leadership of Mario Goeb, PWW's Trojes Project Coordinator, were designed to provide meaningful data with which we could make an informed decision on the efficacy of these filters. PWW considers monitoring and follow-up in our programs as essential to long-term success and sustainability. PWW would like the results from the field to support important conversations on sustainable household water technologies. The PWW studies showed that, over time, the filters were not performing as expected.

To help us understand what was happening, six filters were removed from the field and sent to the University of Maine in Orono, Maine where Professors Barbara Stewart and Catherine Hopper conducted various tests on the filters. Based on the results of our field studies along with the work of University of Maine, the Civil and Environmental Engineering Department at

Tufts University was asked to conduct a scientific study to further evaluate and test the filters.

Working with a collaborative team of researchers and water experts, the study led by Daniele Susan Lantagne, PhD and Anna Murray both of Tufts University. Ms. Murray, PhD Candidate in Civil and Environmental Engineering conducted further research and was the principal author of the study accepted into the Journal of Water, Sanitation and Hygiene for Development and published in 2014. This study identified irreversible fouling, including biofouling, in Sawyer PointOne filters that were used in households for less than two years. The editors of the Journal invited representatives from Sawyer Products to respond. Their comments, along with further comments by the original study authors are included in the online article which can be found below.

As stated in the paper, the authors of the paper intend their collective findings to be illustrative of potential long-term challenges for the filter and recommend further investigation and evaluation of the filters.

The conclusion of the study recommends additional research on filters in the field to determine: 1) long-term filter microbiological performance in households, 2) the impact of variable influent water quality on filter performance, 3) fouling and breakage rates within distributions, 4) recommendations for fouling management, 5) an appropriate filter lifespan, and 6) an appropriate end-of-life indicator for the Sawyer PointOne filter.

LINKS TO STUDIES:

[San Francisco Follow- up 2013](#)

[San Ramon 2 Sawyer Follow-up](#)

[Santa Rosa Sawyer Follow-up](#)

[Summary of Evaluation Report SF 2012](#)

[Summary of Sawyer Pilot Testing 2013](#)

[Study published in the Journal of Water, Sanitation and Hygiene for Development](#)