

A Collaboration for Clean Water in Guatemala

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Discloser slide

- **Objectives:**
 - Describe the need for clean water in rural villages in Guatemala
 - Explain the collaborative project with respect to methods, protocol, outcomes, and significance
- **No conflicts of interest, sponsorship, or commercial support**

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A story



The opportunity

- **Give and Teach ministry**
- **Rescuing children through education and the Gospel**
- **Feeding program**
- **Water filters**
- **Home building**
- **Vented cook stoves**
- **Building local churches**



Medical outreach 3 villages



Awareness of needs



Prevalence of infectious disease



- UTI, RTI, parasitic infections
- Lack of awareness of importance of hygiene

The need for clean water globally

- Sanitation
- Food production
- Scarcity and contamination
- Disease burden (cholera, dysentery, typhoid)
 - UN goal “...universal access to safe and affordable drinking water for all by 2030”

Global Initiatives toward the Goal

- Boiling
 - Exposure to UV light
- Chemical disinfecting methods
 - Germicidal treatments
 - Chlorination
- Engineering projects to improve sanitation

The Guatemalan clean water project

Strategies that are inexpensive, easily understood, acceptable and community oriented can be effective in developing countries

- Installation of clean water filters
- Teaching of hygiene classes
- Follow-up visits by local MD
- Assessment of infections post intervention



Specifics

- Funding for the filters
- Offering the filters
- Teaching
- Follow-up MD
- Installation of filters
 - 83/150 families in El Amante
 - 130/500 in Bijagues
 - Overall 33% in 2 villages received filters



The Ecofiltro system



ecofiltro[®]
The solution to purified water

WATER CONTAINS MICROORGANISMS, WHICH CAUSE INFECTIONS AND DISEASES

FILTER INSERT MADE OF CLAY, SAWDUST AND COLLOIDAL SILVER

WATER IS FILTERED AT RATE OF 1-2 LITERS PER HOUR. THE CLAY REMOVES THE BACTERIA AND THE CARBON REMOVES BAD TASTE AND ODOR LEAVING FRESH TASTING CLEAN WATER.

CLAY:
Creates micro channels within the inner walls catches all contaminants that the water contains.

SAWDUST:
Removes the bad smell, taste and turbidity of water coming from any source.

COLLOIDAL SILVER:
It neutralizes and removes bacteria. It works as a bactericide.

Outcomes

- **Post-intervention assessment of infections one year later, 6 months after filters installed**

	Pre-installation of water filters	Post-installation of water filters	Marginal totals
Infection	62	44	106
No infection	122	118	240
Marginal totals	184	162	346

Chi-square with 1 df = 1.73 (*ns* at confidence level .05)

Table 1. Comparison of incidence of infection in all Guatemalan villagers assessed pre and post installation of clean water filters in the villages.


Significance

- **Representative of a trend**
- **Follow up by the Guatemalan MD: pre-intervention 53 infections/ post: 3.5 per mo.**
- **Brought safe water to 213 homes**
- **Education about water safety, health and importance of hygiene**
- **Collection of rainwater reduced**
- **Collaboration built a strong working relationship**

Continued ideas and collaborations: chicken coops!



Questions?

The image features a large, stylized logo for Appalachian State University. The word "Appalachian" is written in a large, black, serif font, with a silhouette of a bird in flight positioned above the letter 'i'. Below it, the words "STATE UNIVERSITY" are written in a smaller, black, all-caps, serif font. The logo is centered over a background image of the university's campus. The campus is a large, multi-story brick building with a green roof, surrounded by trees with autumn foliage. In the background, a large mountain is visible under a blue sky with scattered white clouds. The entire scene is framed by a thick red border.

Appalachian
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