

Soap Making- Cochabamba, Bolivia

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Abstract

CECAM Bolivia is an organization located in Cochabamba which focuses on the sustainable development in the Bolivian population who are facing problems with poverty, gender-based violence, and environmental contamination. The goal of this ETHOS project was to help empower the women in the surrounding communities so they would be able to make a living for themselves. The purpose of this project was not only to improve the existing artisanal processes used to make soap, but to give these women the tools and knowledge so they would be able to make their own profit.



Figure 1: Volunteers at CECAM



Figure 2: Break time with Chi-Chi

Introduction

Since majority of the population lives within poverty many families do not have a steady source of income. CECAM's main focus is on simple training and educational workshops for children as well as healthy and sustainable lifestyle improvements for communities. This ETHOS project worked on improving the existing soap making process as well as travelling with CECAM to surrounding schools and communities to show women and students how to make their own soap.



Figure 3: Soap workshop

Hot Process Soap

- Initial research was conducted to find which resources and fragrances were readily available in Cochabamba.
- Hot process soap requires an external heating source that speeds up the chemical reaction.
- NaOH, olive oil, and water are the 3 main ingredients.

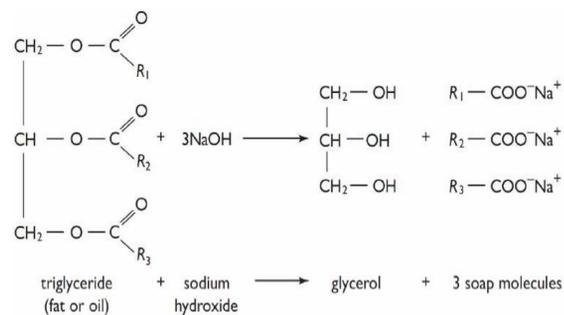


Figure 4: Saponification Reaction

Hot Process Soap

- Below a table is provided illustrating the different types of soaps and fragrances used in the experiments.

Table 1: Testing Matrix

| Type of Soap | Fragrance |
|---------------|---------------|
| Laundry Soap | Lemon |
| | Lavender |
| | Citrus Orange |
| Soap for skin | Coconut |
| | Aloe Vera |
| | Chamomile |
| | Lavender |
| Shampoo | Coconut |
| | Mint |
| | Lavender |

- NaOH, H₂O, and oil mixture was mixed thoroughly with a spoon until the liquid came to a "trace".
- After the mixture was placed on the stove on low heat until desirable consistency was achieved.



Figure 6: Hot Process Steps

- Liquid soap was an easy way to reuse soaps without the addition of any chemicals.



Figure 6-7: Examples of final product

Recommendations

- Research methods that utilize natural colorant and fragrance.
- User evaluations to provide feedback on quality and preference.
- Conduct research on natural fabrication of shampoo.



Figure 8. Fabrication of Soap

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Figure 9. CECAM Logo