

AQUARIUM WITH WASTE MATERIAL

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ABSTRACT

The world generates 2.01 billion tons of municipal solid waste annually, with at least 33 percent not managed in an environmentally safe manner, (World Bank Municipal Data). Modern lifestyle has led to more acute waste problems. One of the main waste materials that can be reused is polystyrene. On the other hand, young kids nowadays want to have their own aquarium but it's much too expensive to buy one. As a solution for these 2 problems a new idea establishes. Used Polystyrene incorporated with some other used/waste material to innovate a new Waste Based Aquarium. The usability and life span of the aquarium were tested in an Aquaponics' project. Polystyrene and Waste glass collected from identified market sellers for free. Polystyrene measurements have been taken for fit in glass so that fish growth can be monitored clearly. Base model fixed with Eco- friendly glue. To enhance the polystyrene to be more stable clay collected from stream mixed Benzoin Resin Ash. Di-chloride tap water, added to the aquaponics base tank to check for any leakage. Upon completion of 7 months, we conclude that Waste Based Aquariums in aquaponics are Cost Effective, Attract the kids Reduced disposal of glass and polystyrene and Eco friendly.

Keywords: waste, polystyrene, glass, aquarium, aquaponics

1. INTRODUCTION

Our project goals are to make use of waste polystyrene and glass. Outcome of the project is a usable aquarium. The milestone is, long last usable aquarium. Cost for this project is much cheaper than in the market now. Timeline taken to complete this is less than a week and tested for six (6) months. Our innovation is a design aquarium, which tested in an aquaponics system using waste material. For the pilot experiment, a variety of waste materials were tested and sorted accordingly. The main objective of this innovation is to enhance usage of waste materials among kids. At the same to produce a less cost aquarium and keep the environment cleaner. A particular focus is given to literature which pertains to the management of municipal solid waste (MSW) with a greater emphasis placed on information useful to organizations in the industrial, commercial and institutional (ICI) sector. The crucial elements of comprehensive waste materials are examined in detail. Specific information is given on the characteristics of MSW, existing frameworks, emerging trends, and important considerations. The literature review findings will be used in the development of an ICI waste management (polystyrene and glass) best practices guide for our aquarium.

2. MATERIAL AND METHOD

2.1 Material

Used Polystyrene (collected from market Benzoin Resin Ash (left over from praying materials)-waste material, Used Glass Pieces (collected from Aluminum and Glass Shop)- waste material.

2.2 Method

Polystyrene collected from identified market sellers for free. Waste glass pieces collected from Glass shop. Polystyrene measurements have been taken for fit in glass so that fish growth can be monitored clearly. Measured part of Polystyrene cut off and fixed with measured wasted glass. (Solvent free water-based adhesives) Base Polystyrene let dry for 48 hours. To enhance the polystyrene to be more stable clay collected from stream mixed with Benzoin Resin Ash (in correct consistency as of cement), applied to polystyrene surface (to give a strong hold aquaponics base) and let dried for 48 hours.

3. FINDINGS & ARGUMENTS (OVERVIEW)

Lesser Cost to build aquarium

No Lab/No Machinery/Less Chemical Waste Material for aquariums easy to obtain. Its Gaining Income
It meets elements from 17 Sustainable Development Goals.

4. CONCLUSIONS

As an innovative to use waste material to create the tank definitely, enhance more strength to this project. By eliminating expensive cost to set up the tank, the younger generation, especially those who cannot afford to buy an expensive tank, will benefit from this. At the same time, this kind of innovation is surely a continuity as the need for supply and demand is always there. We are very proud and happy that our project work well and we done our part at least to show our concern to the eco-friendly manner. Our plants and fish grow very well and we did it with Waste material aquarium

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4. Discussion with aquaponics shop owners in our project, the future purpose of our project is finding an optimized situation for the aquaponics system to produce food and save water more efficiently and eco-friendly.



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