# Experimental Investigation on Woven Geotextile Water Hyacinth Stalk for Soil Reinforcement

An Undergraduate Thesis Presented to the Faculty of
College of Engineering, Architecture and Technology
De La Salle University – Dasmariñas
Dasmariñas City



In Partial Fulfillment of the Requirements for the
Degree in Bachelor of Science in Civil Engineering

Manilyn C. Lapidez
Almira S. Luna
Luchie Marie S. Pacatang

October 2014

## Abstract

Many rising structures and construction projects in soft soil weaken the performance of the ground, and that causes soil failure like soil erosion. Soil erosion is one of the major problems that the world is facing today. One of the most effective, reliable and yet natural ground improving techniques in erosion control is the use of Geotextiles fabric (Woven Geotextiles) like Coir Geotextile Fabrics.

One of the natural fibers that have the potential to be made into a woven geotextile is water hyacinth. Water hyacinth (Eichhnorniacrassipes), as one of the natural materials abundant in the country, has been described as the most troublesome weed because of its rapid growth. Water hyacinth in the country causes major problems to the people in terms of obstruction to water transportation, micro-habitat for disease vectors, and obstruction to fishing.

In this study, the researchers aimed to provide a solution for soil erosion control and for the complications caused by the water hyacinth through making it as a woven geotextile. Standard tests, rainfall simulation, and field application process were discussed to know the effectiveness of water hyacinth geotextile. The researchers concluded that the use of water hyacinth geotextile can control or lessen soil erosion.