

# **THE BIOLOGICAL TREATMENT FOR COLOR REMOVAL OF DISTILLERY EFFLUENT**

A dissertation submitted to the  
Faculty of Science & Technology  
UvaWellassa University  
In partial fulfillment of the requirements for the award of the  
Degree of Bachelor of Science  
by

**LOKU MARAMBAGE LAHIRUKA DILINI**

**Mineral Resources and Technology Degree Programme**

**UvaWellassa University, Sri Lanka**

**2013**

## Abstract

Distillery effluents should be treated before disposal into the environment. Spent wash is the major polluting waste of distillery industry. These effluents may cause severe soil and water pollution, specially in aquatic environments. It reduces the sunlight penetration causing decreased photosynthetic activities. Various studies have been carried out on removing these effluents from the water bodies, using physical and chemical methods. But these methods are very hard, could be very expensive and could be destructive to the environment. In this study we used biological method to remove these effluents from aquatic systems which is more economical and environmentally friendly. In this study we planned to remove the colour by using five polyporus fungal species that is commonly found in Matara area. Basidiomycetes decomposing fungi has exhibited extensive bioremediation activities that are mainly based upon their capabilities to produce one or more extracellular lignin-modifying enzymes which have the potential to decolorize distillery effluent. In this study over the five polypores fungal species were collected and cultured. The absorbance was measured for seven days, after 5 days incubation period. Results revealed that most of fungal species were removed up to 50% of color. The most efficient color reducing fungal species was fungal "C" (*Lenzites botulin*).

Key words: Polyporus fungal, spread plate, streak plate, ligninolytic enzymes, liquid broth