

Air Pollution Response Analysis of Selected Roadside Plant Species Found in District IV, Quezon City

Thesis Proposal By: Paul Ezekiel M. Losaria

MS Environmental Science

Adviser:

Dr. Mylene G. Cayetano

Abstract

Air pollution in an urban area is continuously increasing due to stresses from human population growth, rapid urbanization, and industrialization, which have influenced the demand for vehicle use and in turn emissions. Even with the implementation of air pollution control measures, air pollution in urban areas continues to worsen. Unlike other types of pollution, we currently have no technology to treat air pollution, on a larger scale, that is already released into our atmosphere. The presence of plants (trees, shrub etc...) in urban setting acts as filters that help alleviate the presence of pollutants in the environment and are an integral part indirectly increasing the quality of air. However, not all plants are able to thrive in a heavily polluted environment. Benefits of using plants as bio-indicator are that they allow monitoring of the large area, low plant cultivation, and low maintenance cost. Screening which plants species to plant in urban areas is necessary to maximize the benefits.

This study aims to do three things: (a) to determine which plant species planted along and near the road around selected areas around Quezon city are tolerant or sensitive to air pollution, through determination of their Air Pollution Tolerance Index (APTI) values; (b) to determine which ones are suitable to be planted in urban areas, through computation of their Anticipated Performance Index (API) gradation score; (c) to observe the response of selected plants species to air pollution at their early developmental stage. The study can be used as the

basis for planning and mitigating measures for local government units as well as government agencies to address the increasing air pollution problems in urban centers.

Key Words: Air Pollution Tolerance Index (APTI), Anticipated Performance Index (API), Biomonitoring, Bioindicator, Response Analysis,