

ASSESSMENT OF THE GROWTH KINETICS OF SELECTED MICROALGAE SPECIES IN SYNTHETIC WASTEWATER FOR THE PRODUCTION OF BIODIESEL

U.L.D. Inush Kalana

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

The need to reduce the dependence on petroleum based fuel is becoming important mainly due to global warming and energy crisis. Continuous combustion of fossil carbon has an effect on the increasing amount of greenhouse gases (GHG). Biodiesel is one of the substitutions of fossil fuels. Production of biodiesel from microalgae is categorized under third generation biofuel which is considered to be a viable alternative energy resource. This study is focused on investigating growth kinetics of microalgae, cultivated under laboratory conditions. Three freshwater microalgae species were isolated, from the water samples collected from two reservoirs included Victoria and Ulhitiya, representing only the Intermediate climatic Zone of Sri Lanka. Algae species were cultivated in a synthetic wastewater medium followed by a kinetic study, in order to identify the species with the highest potential for the production of biofuel. Light intensity, aeration and temperature were varied as the physical parameters during the experiment. According to the statistical analysis, *Chlorella* sp. showed highest growth rate than *Monoraphidium* sp. and *Scenedesmus* sp. in all three conditions.