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**University of Ruhuna, Matara, Sri Lanka**

**P 11 Effect of light intensity on dry weight and oil content of microalgae**  
***Nanachloropsis sp.***

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Biodiesel is one of the alternative fuels obtained by the trans-esterification of triglyceride oil with monohydric alcohol. Few studies have been conducted for microalgae producing biodiesel under Sri Lankan condition. The objective of this study was to find out the effect of light intensity and duration of light supply on growth of microalgae in indoor condition in the Department of Agricultural Engineering, Faculty of Agriculture. The Guillard and Ryther's F medium was selected as the medium for microalgae cultivation. The 5 ppt diluted sea water was used for growing the pure culture of *Nanachloropsis sp.* The growing media was volumed upto 5 L from 10 ml. The experiment was carried out with different light intensities during different time durations. The provided light intensities were 950, 1800 and 3000 lux and different time durations were given as 12 hrs and 24 hrs due to examine the effect of duration of light supply on photo-inhibition of microalgae. The oil content of each sample was extracted using Soxhelt unit. The effect of light intensity on dry matter yield and oil content of microalgae is significant and positive relationship was observed at 12 hrs light duration. The dry matter content can be increased further by increasing the light intensity higher than 3000 lux. The effect of duration of light supply on dry matter content of micro algae is significantly different and a positive relationship was observed. The oil content of microalgae was significantly different between the light supply durations. Higher oil percentage was observed under 12 hrs light duration, therefore algae cultivation can be done in outdoor condition under natural day light to get more oil yield.

**Keywords:** micro algae, light intensities, light duration, oil yield, dry matter content