DETERMINATION OF BIOCHEMICALCOMPOUNDS (CARBOHYDRATE AND PIGMENTS) OF SINGLE CELL MICROALGAE, TETRASELMISCHUIICULTIVATED IN DIFFERENT LIGHT INTENSITIES LEVELS

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In this study the effects of three levels oflight intensity (1000, 2000 and 5000 Luxury) each with three replications on the amount of carbohydrates, carotenoids, chlorophyll a, b and total chlorophyll in Tetraselmischuii, was investigated. The duration of study was 11 days. Conway's medium was used for growing microalgae under controlled laboratory conditions including salinity, dissolved oxygen and pH in the order of 27 parts per thousand (PPT), 5.45 mg/l and 7.8, respectively. After sampling microalgae cultivated in different treatments at stationary phase of growth curve (8 day of the study) using phenol-sulfuric acid and Arnon methods to measure carbohydrates and carotenoids, chlorophyll a, b, respectively. The results showed that the highest amount of carbohydrates and total chlorophyll measured in 5,000 lux treatment by the amount of 0.75 ± 0.09 and 4924.74 ± 0.821 mg/g of dry matter sample ($P<0.05$). Whereasinhigher levels of chlorophyll b and carotenoid pigments compared with 5,000 lux, no significant difference was observed ($P> 0.05$). Based on obtained results, it can be concluded that in microalgae with increasing light intensity, production of intracellular compounds will be enhanced. In this study the highest level of biochemical compounds were observed in light intensity of 5000 Luxury.

Index Terms - Tetraselmischuii, Light Levels, Carbohydrates, Chlorophyll, Carotenoid.