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GROWTH RESPONSE OF *Oedogonium* TO THE DIFFERENT NUTRIENT SOURCES AND CONCENTRATIONS

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ABSTRACT

Growth response of *Oedogonium* cultivated in media which were supplemented by different Nitrogen and Phosphorus sources in various concentrations was investigated in this study. This study showed the best *Oedogonium* growth performance was observed in control media (water only media), the performance was indicated by biomass produced (wet 27,69 ± 1,67 g/L; dried 6,01 ± 0,21 g/L). Two N sources (ammonium chloride and urea) and one P source (kalium phosphate) were used to study the *Oedogonium* growth response over 60 days of experiment. During the growth, Oedogonium was grown in water only media showed the best performance of all the parameters such as biomass production, health indications (e.g. biomass color score, the color score was 1 (the scores were ranged from 1 – 10; score 1 - for very healthy up until score 10- for death) and oxygen gas production in the media were scored as 3 (the score were ranged from 0-3; score 0 for indicating no oxygen gas was observed, score 1 for low gas production, 2 for medium and 3 for high gas production, the scores were used as the indication of photosynthetic activities. Total chlorophyll content trends showed different response to the N and P sources; the increasing ammonium concentration resulted in a decrasing trend of chlorophyll total; otherwise, the increasing urea concentration resulted in the increasing trend of chlorophyll total. Different trends of pH were observed during the 8 days of *Oedogonium* growth in the media with difference sources of N and P, for the N (Urea)/P (K-Phosphate) experiment, there were decreasing of pH trends along with the decreasing N:P ratios from day 1 to day 6, but they were gradually increased until achieving straight lines at day 7 and 8. Instead, there were increasing trends of pH were evidenced from day 1 to day 8 along with the decreasing of ammonium chloride (N)/K-Phosphate (P) ratios.

Keywords: Biomass, growth, chlorophil, Ammonium chloride, Urea, Kalium Phosphate, *Oedogonium*.