



Effect of temperature, phosphorous and light on growth of *Oscillatoria agardhii*

Ahmadi Livani M.^{1*}; Khoshbavar Rostami H.¹; Yelghi S.¹

1-Inland Water Aquatic Stocks Center, Gorgan, Iran

*Corresponding author's email: Ahmadi777@yahoo.com

Abstract

In this study the sampling operation has been done in Gorgan's gulf water in the beaches of Caspian Sea and alga pile *Oscillatoria agardhii* was separated from the water with algae sample by pipet and hookpang method. Then they have been kept on the agar plate for the first culture. *O. agardhii* was obtained in medium Z8-N with limited mass. The different density of phosphorus (100 and 200 μ g/lit) and temperature 25-30 and 30-35 °C in optic intensities 3000, 3500 and 4000 lux with different light alternation (10/14 and 14/10 L/D) was grown. The results showed that the most rates of cell numbers for the period 10/14 and temperature of 25-30 and 30-35 related to the Z8-N medium on the tenth day, which was 3.46 and 3.42 respectively. For light period 14/10 and temperature of 25-30 in 3 medium, the highest cell amount was on the fourth day. The weight of alga in Z8-N medium and in 25-30 temperature and in light period 10/14 in comparison with the other two medium had the most rates, which was 0.78 and 0.77 respectively. In light period 10/14, it was found that the highest rate of alga's weight in the fourth day in all three medium and was 3/57. Additive process in alga's cell time division showed in all three medium at 25-30, 30-35 °C, 10/14 light period, and at the 25-35 °C, 14/10 light period showed the highest rate in 200 medium on the fourth day. The highest growth rate in comparison with three other mediums related to Z8-N medium and the least related to 100 medium on the fourth day. The most rate of cell division in 30-35°C, 10/14 light period was seen in Z8-N medium and the least rate was in 100 medium.

Keywords: *Oscillatoria agardhii*, light period, temperature, medium, darkness and lightness