Determination of Effective Parameters on Growth rate and Protein Content of *Spirulina platensis* Under Laboratory Condition

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Abstract:

In order to provide optimum growth and protein content, *S. platensis* cells were grown in modified Zarrouk (1966) media culture at different salinity (30, 32 and 35ppt), temperature (20, 23, 26 and 28ºC) and intensity (50, 75 and 90 µmol $m^{-2}s^{-1}$). The results of the present study clearly showed that the highest alga biomass and growth rate was obtained following culture under the 32 ppt salinity, 26°C temperature, and under a 13h light:11h dark photoperiod regime at a light intensity of 90 µmol $m^{-2}s^{-1}$ provided by cool white fluorescent tubes (figure 1). Maximum alga biomass and growth rate of *S. platensis* in a 5 liter Erlenmeyer flask for twelve days reached to 8 gr L^{-1} and 0.28 day^{-1}, respectively. However, the mean alga biomass of *S. platensis* in temperature regimes 20, 23, 26 and 28ºC (under salinity of 32 ppt, and 75 µmol $m^{-2}s^{-1}$ irradiance) were 4.72, 5.15, 7.69 and 7.03 gr L^{-1}, respectively. The results clearly showed that *S. platensis* successfully cultivated under different physical condition and maximum protein content was produced in the 30 ppt salinity, 28°C temperature, and 75 µmol $m^{-2}s^{-1}$ irradiance. Based on the results from the present study, providing suitable media culture and physical condition can be considered as a promising method to *S. platensis* cultivation for achieving optimal biomass and protein production.

Figure 1: Alga biomass following culture under the 32 ppt salinity

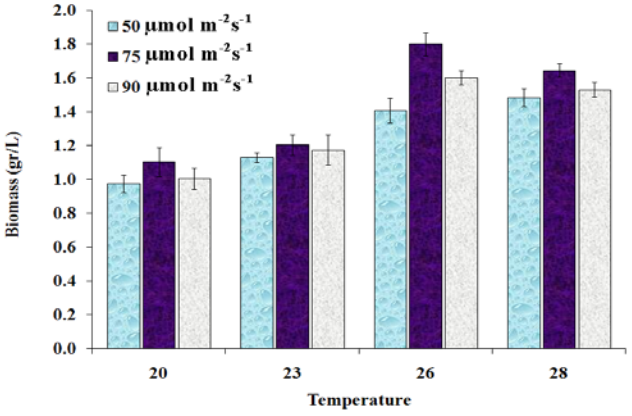
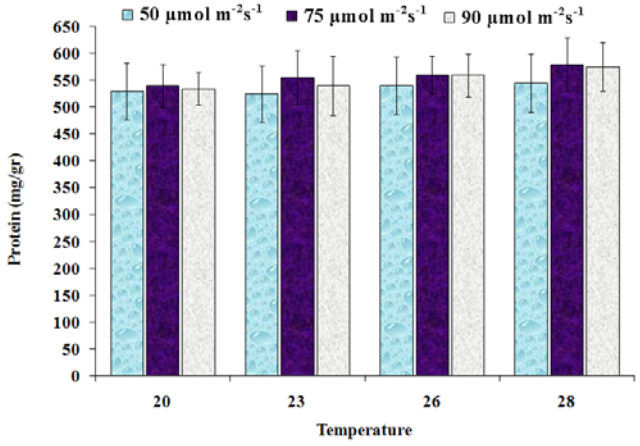


Figure 2: Protein content following culture under the 30 ppt salinity



Recent Publications:

Gorgij Jaski, M.; Rohani-Ghadikolaei, K., Growth Performance of White Leg Shrimp *Litopenaeus vannamei* in Different Stocking Density under Outdoor Tank Conditions. Paper presented at the *2nd International Conference on Fisheries, Aquaculture and Environment in the Indian Ocean, Sultan Qaboos University Muscat, Oman*, 24-26 February 2015

Rohani-Ghadikolaei, K.; **Gorgij Jaski, M.** Shahrivar, M. 2015. Growth and survival rate of pearl oyster spat (*Pinctada margaritifera*) fed on fresh/concentrate microalga *Isochrysis galbana* and *Chaetoceros muelleri*. Paper presented at the *2nd International Conference on Fisheries, Aquaculture and Environment in the Indian Ocean, Sultan Qaboos University Muscat, Oman,* 24-26 February 2015.

Gorgij Jaski, M.; Rohani-Ghadikolaei, K., Optimizing of biomass production and protein content of *Spirulina platensis* using different nitrogen regimes. Paper presented at the *Middle East and Central Asia Aquaculture 2015,* 14-16 December, 2015, Tehran, Iran.

Gorgij Jaski, M.; Kamrani, E.; Salarzadeh, A. 2014. The study effect of sun light on growth performance and survival of post larvae with leg shrimp and salinity stress resistance. *Pelagic Research Library European Journal of Experimental Biology*, 4 (2): 7-12

Biography:

Mohammad Gorgij Jaski has completed his MSc. on aquaculture at the age of 28 years from Islamic Azad University, Iran and now he is PhD student in Aquaculture nutrition. He is the head of Shrimp hatchery production named, ***Sontderaf*** in Jask, Iran. He has published more than 3 papers in reputed journals and presented more than 3 papers in International Conferences.

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