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Culture of *Spirulina platensis* in different source of nitrogen for optimizing of protein content

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The major nutritional interest in *Spirulina* is due to its high protein content, ease of digestion and a significant content of vitamins, minerals, amino acids and pigments. Nitrogen is known to have a strong influence on the metabolism of lipids and protein in various microalgae. In the present study, the production of *S. platensis* was optimized in terms of biomass and metabolites by using different nitrogen regimes. *S. platensis* was grown in Zarrouk's medium in a 3000 ml Erlenmeyer flask, in which the NaNO_3 was replaced by NH_4Cl , NH_4NO_3 and KNO_3 with concentrations of 0.010, 0.025 and 0.050 M. Cultures were incubated at temperature of 30°C and initial pH of 9.5 under 12/12 hour light-dark photo period with normal white light. The results clearly showed that *S. platensis* successfully cultivated by using different nitrogen regimes and maximum biomass was produced in medium containing NH_4NO_3 . The maximum protein content was obtained in culture containing NH_4NO_3 followed by NH_4Cl and KNO_3 . Moreover, in all *S. platensis* cultures, increase in nitrogen concentrations, led to an increase in maximum biomass and minimum protein content; whereas with increasing nitrogen concentrations, chlorophyll-a content increased more slowly and reached relatively high values only at very high nitrogen levels. However, chlorophyll-a content did not show any significant, when the nitrogen were varied in term of regimes and levels. Overall, the results of present study clearly showed that using NH_4NO_3 can be considered as a promising nitrogen source for *S. platensis* cultivation for achieving optimal biomass and protein production.

Biography

Mohammad Gorgij Jaski has completed his MSc from Azad University of Bandar Abbass, Iran and now is a PhD student in Aquaculture. He is the Head of Sontderaf Shrimp Production Company, Bandar Abbass, Iran. He has published more than two papers in reputed journals.

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