



Evaluation of microalga *Chlorella sorokiniana* LBA 39 isolated in the Brazilian Savanna (Cerrado) cultivated in different culture media

Primary Topic Areas:

1. Biology (to include Algal Biology and Systems Ecology and System Biology)

Secondary Topic Areas:

Algae-strain development, improvement, selection and breeding

Type of presentation requested: oral presentation

Dágon Manoel Ribeiro^{abc}, Lorena Costa Garcia^c, Letícia Jungmann Cançado^c, Thomas Christopher Rhys Williams^a, Luiz Fernando Roncaratti^b, Bruno dos Santos Alves Figueiredo Brasil^c.

^aLaboratory of Plant Biochemistry, University of Brasília, Brasília, DF, Brazil

^bPhotobioreactor Laboratory, University of Brasília, Brasília, DF, Brazil

^cLaboratory of Algae Biotechnology, Embrapa Agroenergia, Brasília, DF, Brazil

Brasília DF, email dagonribeiro@hotmail.com, Phone. +5561999582067

The characterisation of new strains of microalgae represents an important and continuous activity as part of the analysis of algal biodiversity in Brazil and search potential candidates for biotechnological applications.

Here we evaluated the effects of different culture media on growth of *Chlorella sorokiniana* | LBA39, a strain isolated in the Brazilian Savanna (Cerrado) and identified by Hadi et al. (2016). Three media previously described in the literature were used; the Basal Bold medium described by Bischoff and Bold (1963), the BG 11 medium described by Stanier, Kunisawa, Mandel, & Cohen-Bazire, (1971) and the NitrU medium described by Dragone, Fernandes, Abreu, Vicente, & Teixeira (2011).

Cultures were carried out in triplicate in 250 ml Erlenmeyer flasks with a medium volume of 150 ml, and were maintained on a rotating orbital shaker with a photoperiod of 16/8 with 40 lux at 25 ± 0.5 °C and 150 rpm.

After 7 days growth *Chlorella sorokiniana* | LBA39 grown in NitrU medium produced more biomass with 583.3 mg/L based on dry weight, followed by BG11 with 400 mg/L (dw) and BBM with 166.67 mg/L (dw). This difference may be related to different amounts of nitrogen in the medium as NitrU contains more than double that of BG11, and ten times more than BBM. Algae grown in NitrU medium accumulated greater levels of fatty acids especially the C18:3 and was detected no difference in protein content between BG11 and NitrU.

In conclusion, based on measurements of biomass production and oil accumulation, the NitrU medium appears a promising choice for use in the production of the microalga *Chlorella sorokiniana* LBA 39.