Final evaluation of the biomass in prolonged growth of different Brazilian microalgae of the order *Chlorococcales* in culture with aeration and shaker in a medium composed by Fertilizers

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

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The production of biomass algae to supply the chains of bioeconomics, such as food and energy, is also linked to the use of great biodiversity present in own land. Chlorella it's an important candidate for biomass production and accumulation of values components such as lipids, carbohydrates, proteins and pigments.

Here we evaluated four microalgae isolated in different regions of Brazil, LBA 29 (Atlantic Forest), LBA 32 (Amazon), LBA 39 (Cerrado), and LBA 50 (Pantanal) and the quantification and characterization of fatty acid profile growed in fertilization medium BGUF.

Cultures were carried out in duplicate in 250 ml Erlenmeyer flasks with a medium volume of 150 ml , and were maintained on a rotating orbital shaker and in duplicate in 500 ml Erlenmeyer flasks with a medium volume of 350 ml, were maintained on constant aeration with 6 L^{h-1} both with a photoperiod of 12h/12h with 40 lux at 25 ± 0.5 ° C.

After 30 days, the LBA 29 cultivated in constant aeration reach 1.9 g/L based on dry weight, followed by LBA 32 and LBA 50 with 1.7 g/L (dw) and LBA 39 with 1.2 g/L (dw) in cultures with constant aeration, in general the cultures maintained in shakes obtain less biomass with no statistic difference beetwen the species varying 0.4 g/L to 0.7 g/L (dw), the higher amount of FA was found in the cultures with constant aeration, among the microalgae tested the best results was founded in LBA 29, 32 and 39, with in average 10% (w/w) of FAME accumulated.

In conclusion, based on measurements of biomass production and oil accumulation, the LBA 29 growned in fertilization medium BGUF shows a promising choice for use in the production of algal biomass.