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Validation, characterization and comparison of microalgae *Chlorella vulgaris* and *Chlamydomona reinhardtii* growth kinetics

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Abstract : Abstract: Growth bioassays of microalgae *Chlorella vulgaris* and *Chlamydomona reinhardtii* were performed at biotechnology laboratory of SENA - Centro Internacional Náutico Fluvial y Portuario, Colombia using modified Conway medium. For microalgae cell count, Neubauer chamber method was used and also optical density was measured by spectrophotometry at 685 nm for this purpose. The results were validated using analysis of variance (ANOVA), obtaining 95% confidence in the culture method. Linear relationships between the population growth and optical density parameters for both microalgae were found with an R^2 of 83.4% for *Chlorella* and 89.3% for *Chlamydomona*. The characterization and comparison of growth kinetics, showed a significant difference between the growth of the species, reaching maximum growth values of $5'082,500 \text{ cel} \cdot \text{mL}^{-1}$ for *Chlorella* and of $1'590,000 \text{ cel} \cdot \text{mL}^{-1}$ for *Chlamydomona*, this was verified with the kinetic parameters obtained from the culture of the species.

Key words : microalgae, *Chlorella vulgaris*, *Chlamydomona reinhardtii*, statistics, kinetics.

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