

***Spirulina platensis* Growth in Open Raceway Ponds Using Fresh Water Supplemented with Carbon, Nitrogen and Metal Ions**

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To investigate the feasibility of using fresh water from Mangueira Lagoon (Rio Grande do Sul, Brazil) for biomass production in open raceway ponds (0.7 m long, 0.18 m wide, 0.075 m deep) we studied the influence of nutrient addition (carbon as sodium bicarbonate, nitrogen as urea, phosphate, sulfate, ferric iron, magnesium and potassium) on the growth rate of the cyanobacteria *Spirulina platensis* using a 2^2 factorial design. In unsupplemented lagoon water production of *S. platensis* was 0.78 ± 0.01 g/l (dry weight basis) while the addition of 2.88 g/l of sodium bicarbonate (without added urea, phosphate, sulfate or metal ions) resulted in 0.82 ± 0.01 g/l after 400 hours of culture. The further addition of phosphate and metal ions resulted in growth for up to 750 h and a final *S. platensis* biomass of 1.23 ± 0.04 to 1.34 ± 0.03 g/l.

Key words: Cyanobacteria, *Spirulina platensis*, Urea