

**FERMENTABLE SUGARS SYNTHETIZED AS OSMOPROTECTANT COMPOUNDS
BY PHOTOSYNTHETIC MICROORGANISMS**

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At present 80% of the energy used comes from fossil fuels which in addition to being limited involve major environmental drawbacks. The current challenge is to find sustainable fuels as biodiesel and bioethanol, obtained from cheap and renewable raw materials that do not compete with the human feeding.

A new approach is to use sugars produced by algae, as result of photosynthesis; which accumulation can be raised under osmotic stress (osmoregulation). The aim of this paper is to show the production of sugars from algae, isolated from natural sources and the effect of osmotic stress in fermentable sugars accumulation. Strain isolation, production of sugars for each algae and the effect of the osmotic stress on growth and sugar production are showed.

Twelve strains were isolated, showing growths between 0.6 and 1.8 g/L of biomass dw, all with production of intracellular and extracellular sugars. The strain identified as *Chlorella* spp. Show an increase in the sugar production by osmotic stress from 23.64 to 421 mg of sugars/mg of biomass dw. After 24h of osmotic stress with NaCl, 0.4 M. The isolated strains are potential producers of fermentable sugars, using the photosynthetic pathway and osmotic stress.

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