

## **Microalgae as a source of starch**

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For millennia, aquatic environments have been a source of food, minerals and natural products. Concomitant to the increase in human population and its needs, there is an urge for the discovery and sustainable development of new resources. Among aquatic microorganisms, microalgae are a very interesting source of a wide range of compounds. Photosynthetic microalgae are microorganisms that can convert solar energy, water and carbon dioxide to algal biomass. Their growth rates and photosynthetic activities are widely higher than superior plants, representing at least 50% of the photosynthetic biomass production on Earth. Microalgae have important applications for the food industry due to their capacity to produce pigments (carotenes and phycobiliproteins), polyunsaturated fatty acids (eicosapentaenoic and docosahexaenoic acids) and other high-value compounds. Among photosynthetic microalgae, *Chlorella vulgaris* is one of the most studied as it shows high growth rates under optimum conditions and it is an important potential source of starch. The main goal of this work was to evaluate the effect of macronutrient limitations on starch accumulation in the microalgae *C. vulgaris* cultivated in a photobioreactor. The assays were performed at 25°C under continuous fluorescent light. The results showed an increase of starch accumulation in the microalgae under different nutrients limitation. Our study demonstrated that the microalgae *C. vulgaris* can be successfully used as a source of starch by selecting appropriate cultivation conditions.