

**STUDY OF THE REMOVAL OF CHEMICAL OXYGEN DEMAND
OF THE CHEESE WHEY AND WASTEWATER FROM
DAIRY INDUSTRY USING *Spirulina platensis***

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Spirulina platensis is a filamentous cyanobacterium, photosynthetic tissue that can live in soil, marshes, alkaline lakes and freshwater, brackish and marine. Microalgae cultivation is a beneficial process, not only due to the production of proteins of high biological value for human and animal nutrition, but also for obtaining other products like vitamins, pigments and lipids. The microalgae can be used for biodiesel production in the pharmaceutical industry and also in wastewater treatment because it has the ability to consume organic substances and inorganic nutrients from wastewater. The wastewater from a dairy industry refers to water for washing machines and production equipment. This carries significant quantities of dairy products. Whey is the residue from cheese-making which retains significant part of the nutrients of milk. Both the dairy effluent as cheese whey have high values of Chemical Oxygen Demand (COD) and therefore need appropriate treatment avoiding they become pollutants when reach water bodies. This study aimed to evaluate the potential of *Spirulina platensis* in COD reducing of two alternative cultivation medium: one containing wastewater from a dairy in three different dilutions (1000, 800 and 500 mg COD L⁻¹) and another containing whey, even in these three dilutions. Culture was performed in Erlenmeyer flasks of 500 mL containing 200 mL of culture medium, added 10 mL of the suspension of *Spirulina*. The bottles remained during the ten days of cultivation in a shaker at 100 rpm, room temperature and illuminance of 3000 lux provided by 6 fluorescent lamps Phillips, 20 watts, arranged at a distance of about 40 cm from the flasks and photoperiod of 12 h light / dark. Chemical oxygen demand (COD) were analyzed at the beginning, middle and end of treatment, in order to monitor the COD decrease. Analysis was carried out in spectrophotometer at 620 nm. The results showed that *Spirulina platensis* reduced the COD of the effluents studied. The largest percentage reductions obtained were 86% for the treatment with dairy wastewater and 83.5% for the treatment with whey. Therefore, the results were satisfactory and *Spirulina platensis* is efficient for COD removal of the dairy wastewater and the cheese whey.

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