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THE GROWTH OF MICROALGAE USING AN EFFLUENT FROM A BREWERY AS THE CULTURE NUTRIENT MEDIUM

S. Oliveira, M. F. J. Raposo, P. M. L. Castro and R. M. Morais

Escola Superior de Biotecnologia, Universidade Católica Portuguesa, Rua Dr. António Bernardino de Almeida, 4200-072 Porto, Portugal

The treatment of effluents from Agro Food Industries is a major issue in EU due to its industrial and economic importance. Microalgae can be used in wastewater treatment where they may be able to recycle nutrients. Besides, they can reduce the nutrient load through stripping and precipitation, by producing oxygen for bacterial decomposition of organic matter, by eliminating pathogenic bacteria through bactericide action, and by solving odour problems. Treatment efficiency and nutrient removal are managed in function of algal growth, wastewater characteristics (nutrient imbalance, chemical and biological toxicity), and operational parameters. In this study, the effluent coming from a brewery was used as the culture medium for biomass production, which can be processed for valorisation or directly used as a biofertilizer. We evaluated the growth of microalgae, either *Chlorella vulgaris* or the autochthonous flora, using the effluent of a brewery as the nutrient medium. We also evaluated whether the microalgae used the compounds of the effluent as nutrients. The microalgae were grown in different proportions of effluent, 33%, 50% and 100%. The effluent was diluted with distilled water and a control experiment was established using BG Medium (Blue Green). In addition, nitrogen of the brewery effluent was brought to the BG medium concentration, and pH was also corrected. Growth was enhanced when using 50% effluent, with a significant decrease in the amounts of ammonia, nitrates and phosphates of the effluent. Moreover, the malodour of the effluent has disappeared by the end of the experiment.