

Influence of the harvesting strategy on biomass yield

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In algae cultivation different strategies are followed to improve the process productivity. Optimizing the light supply by changing the reactor geometry is most common in process engineering for microalgae cultivations. For a given reactor type, the light distribution inside the reactor is mainly dependent on cell densities and sun intensity. In cases of non-batch cultivations – e.g. repeated batch or continuous cultivation – the time point of harvesting, the extraction period and the extracted volume are influencing daily productivity. In the first part of the project different extraction scenarios from repeated batch, over chemostae and turbidostae continuous processes (during daytime) have been studied. Based on numerical simulation, light supply and the growth behavior were calculated. The growth behavior combined with the mass flows allows to determine the daily productivity.

Those data will be taken in the next step for the dimension of the filtration unit which is the main goal of this project.