

عنوان مقاله:

Improvement of medium composition for phototrophic cultivation of green microalgae, *Chlorella vulgaris* as a suitable feedstock for biodiesel production

محل انتشار:

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خلاصه مقاله:

The green microalgae *Chlorella vulgaris* is one of the most interesting feedstocks for biodiesel production because of its fatty acid composition. In order to enhance biomass productivity, response surface methodology (RSM) was used with Box- Behnken design (BBD) to optimize the medium composition of microalgae. The results included a second-order polynomial regression equation with a high coefficient of determination in analysis of variance. By using this experimental design the interaction of parameters was revealed. The greatest biomass productivity reached 152 mg/l.d under the optimal conditions of sodium bicarbonate concentration 0.94 g/l, sodium nitrate concentration 2.75 g/l and magnesium sulfate concentration 1.47 g/l. By using this optimization method, the biomass productivity of *C. vulgaris* enhanced from 83.3 mg/l.d in unoptimized phototrophic medium to 152 mg/l.d giving 1.8-fold increase in biomass productivity

کلمات کلیدی:

Chlorella vulgaris, Biomass productivity, Optimization, Response surface methodology

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