**Phototrophic cultivation of Lipid-rich Microalgae for Bio-fuel Production**

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**ABSTRACT**

Due to continued use of fossil fuels is not sustainable as they are a finite resource and their combustion lead to environmental problems, the recent investigations started to focus on more renewable energy resources. As an alternative energy resource Biodiesel is an environmentally friendly and renewable fuel source obtained from vegetable oils and used in diesel motors. Since some of terrestrial plants, such as soybean, canola, corn, coconut and palm tree oils used in food purposes and they require huge areas to grow, in recent years studies on microalgae as renewable fuel resources gained more attention due to their surprising ability to grow in unused areas.

Microalgal lipid production is very important for the aquatic ecosystem. Algae can synthesize methabolites such as fatty acids, sterols, carotenoids and lipids that have similar composition found also in the terrestrial plants. The lipids produced by algae and stored as unsaturated fatty acids are the main energy resources of the aquatic invertebrate and fish species. Additionally, these lipids are considered as potential diesel fuel resources.

Aim of this study was to summarized biomass yield and lipid production of various microalgal species of cultured in phototrophic systems.

**Key Words:** Microalgae, energy, biofuel, biodiesel, global warming.