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# STRESS RESPONSE ANALYSIS ON LIPID PRODUCTION BY MICROALGAE ISOLATED FROM ESTUARIES BY UV RADIATION

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**Abstract**

Rapid depletion of fossil fuels with increasing energy consumption and global warming have resulted in a move towards alternative energy sources with less emissions of greenhouse gas. Oil rich microalgae might be alternative sources of lipids for biodiesel production. Microalgae offer a high potential for lipid storage as well as high growth rates. Ultraviolet (UV) irradiation was applied to various microalgae for lipid induction. In this study various microalgae such as *Scenedesmus*sp, *Pseudokrichneriella*sp, *Nannochloropsis*sp and *Chlorella* sp was studied for the microalgal lipid production. Two strains such as *Scenedesmus*sp, and *Chlorella* sp shows increased dry cell weight and lipid content of 45.7µg/ml and 49.4µg/ml respectively which led to a general increase of biomass and total lipid content. The highest lipid content was observed in *Chlorella* sp of about 49.4 µg/ml. All these results indicate that UV mutation is an efficient method to improve probability for using microalgae as the potential raw material for biodiesel production. This study highlights that UV mutation for microalgae can be a viable approach to improve biomass and lipid productivity in microalgae. This process resulted in a significant increase of both biomass and lipid productivity of microalgae. Such strains could subsequently be used as commercial oleaginous algae and serve as an alternative to conventional petrol.

**Keywords:** Microalgae, Microalgal lipid, Alternative energy, UV mutation.