

Algae biofuel: A global exploration for green energy

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Our dependence on fossil fuel is not going to last forever and for fulfilling the need for energy, new and renewable resources of energy need to be explored. Till date many feed stocks like sugarcane, maize, Jatropha, palm oil, Linseed oil etc. have been attempted but none of these feed stocks became a sustainable source of energy.

Algae, an autotroph is rapidly growing microorganism even under stress conditions. Besides consuming good amount of Carbon dioxide, it is capable of synthesizing carbohydrates, lipids, fatty acids and pigments through definite metabolic pathways. Use of algal strains as a potential feedstock for the production of green energy and to combat the future requirement of energy is of paramount importance and need to be addressed worldwide. Trouble shooting and hurdles in

utilizing algae as feedstock for biodiesel need rectification for initiating commercial production of biodiesel.

Micro-algal biomass has been considered as the potential source of biodiesel production because of high growth rate, appreciable lipid and fat synthesis, carbohydrate etc. Biomass production in a hybrid pond system and its harvesting are of major concern to make biodiesel production cost effective. Postharvest technologies for the extraction of lipids and their trans-esterification are more important and can be executed in consortium mode with the laboratories which are already functional. Besides this, the quality and quantity of product is very important for observing techno-economic feasibility along with the least detrimental impact on the environment.

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