

## MEDIA OPTIMIZATION FOR CULTIVATION OF FRESHWATER MICROALGA *SCENEDESMUS* SP. UNDER CONTROLLED CONDITIONS

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**ABSTRACT :** Microalgae are photoautotrophic organisms found in diverse habitat of fresh water as well as sea water and have several applications in aquaculture, nutraceuticals and CO<sub>2</sub> mitigation etc. Microalgae can also be utilized in production of biofuels, lipids, proteins and many high value chemicals. The large-scale production of biofuels and other value-added products from algae has several challenges and the most effective growing media with a robust contamination control strategy are critical for economic production of algal biomass. In this study, media recipes were optimized for cultivation of *Scenedesmus* sp. under laboratory conditions. Three media were used with and without 0.25% sodium bicarbonate. The results revealed that the Bold's Basel Media (BBM) with and without sodium bicarbonate were most effective for the growth of *Scenedesmus* sp. and the highest growth (4.51 OD) was observed in BBM with sodium bicarbonate followed by (4 OD) BBM media without addition of sodium bicarbonate. Both media recipes yielded statistically higher biomass growth compared to other media. The nutrient consumption and Fv/Fm data of *Scenedesmus* sp. in BBM with sodium bicarbonate was comparable with the BBM without sodium bicarbonate containing media. As path forward these media compositions are required to be validated at larger scale outdoor.

**Key words :** Media optimization, Microalga cultivation. *Scenedesmus* sp.