

Enhancement of *Spirulina platensis* Growth Using Humic Acid for Soap Production †

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Abstract: *Spirulina* is a pure and natural whole food, containing no synthetic ingredients or preservatives, consumed as Single Cell Proteins (SCP) by human beings and animals. This study focused on the use of *Spirulina*. Influence of Humic acid (HA) along with the medium was studied in this paper for the enhanced production of *Spirulina platensis* for soap production. *Spirulina platensis* was cultivated with an optimum concentration of humic acid. This study used *Spirulina* for manufacturing natural soap with various components such as Olive oil, Aloe vera, and NaOH by employing RSM (Response surface methodology) – CCD (Central composite design). Optimization of soap production from *Spirulina* is done using different concentrations of Olive oil, Aloe vera, and NaOH, which included (30th trail). The TFM (Total fatty matter) of soap is 80%, and its alkalinity is 9.0 ± 0.5, respectively. The present study suggests that *Spirulina platensis* grown in OFERR medium with 0.9% of humic acid was found to produce maximum biomass. The ideal composition for the improvement of soap was *Spirulina* - 3.75gm, Olive oil - 37.5ml, Aloe vera gel - 15gm, and NaOH - 2gm with *Spirulina* being the key component.

Keywords: *Spirulina plantensis*; Humic acid; Olive oil; Aloe Alkalinity; soap production.

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Conflicts of Interest

The authors declare no conflict of interest.