

# Characterization of the Fatty Acid Composition of *Nannochloropsis salina* as a Determinant of Biodiesel Properties

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*Nannochloropsis salina* was cultured batch-wise to evaluate the potential of the alga to produce biodiesel. The cells were harvested at the end of the exponential growth phase when the concentration was  $18 \cdot 10^6$  cells/mL culture. The growth estimated as dry weight from this cell number was  $(3.8 \pm 0.7)$  mg/L. The lipid and triglyceride contents were 40% and 12% on a dry weight basis, respectively. The amount of the ratio triglycerides/total lipids was approximately 0.3.

The composition of triglyceride fatty acid methyl esters (biodiesel) was analysed by gas-liquid chromatography and identified as: C14:0, C16:0, C16:1, C18:0, C18:1, C18:2, C18:3, C20:1, and C20:5. The ratio of unsaturated to saturated fatty acid contents was approximately 4.4. Additionally, the characterization of each individual fatty acid ester was discussed with regard to the fuel properties of biodiesel produced by the alga.

**Key words:** Biodiesel, Lipids, *Nannochloropsis salina*