

COMPARATIVE ASSESSMENT OF THE EFFECT OF WATER SOLUBLE FRACTIONS OF FUEL OILS ON MICROALGAE

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Abstract

A laboratory study of the effect of water soluble fractions (WSF) of petroleum products (diesel, kerosene and petrol), on two test microalgae – *Selenastrum capricornutum* and *Eudorina elegans* was conducted in the laboratory for 14 days using various concentrations of 0%, 5, 10%, 15% and 20%. The growth response was measured spectrophotometrically using absorbance at 680nm. The study revealed that growth at the various concentrations were generally comparable to control and were more or less stimulatory, especially in diesel and kerosene with minimal inhibition observed in *Eudorina elegans*. There was overall growth stimulation of *Selenastrum capricornutum* in all the three fuel oils whereas *Eudorina elegans* was inhibited. Petrol was most inhibitory to the growth of the two algae than diesel and kerosene and the order of toxicity of fuel oils is petrol>diesel>kerosene for *E. elegans* and petrol>kerosene > diesel for *S. capricornutum*. The data showed that different fuel oils have different potential environmental damage depending on the type of fuel oils and their concentrations of water soluble fractions.
