Thesis Title Biodegradation of crude oil by freshwater microorganisms

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ABSTRACT

Freshwater samples were incubated in minimal media with the 'Far East' crude oil as the sole carbon source at room temperature under shake-flask conditions. The yeast *Debaryomyces hansenii* var. *fabryii*, isolated from the water samples, was able to degrade crude oil. Analysis by capillary gas chromatography showed that almost 80% hexane soluble hydrocarbons and 100% n-alkane (C_{12}-C_{22} fraction) disappeared during 6 days of incubation. *Debaryomyces hansenii* var. *fabryii* was able to degrade oil better at pH 4-7 than at pH 8. Adding salinity in oil-minimal media from 0-3% NaCl, did not influence crude oil degradation. Decreasing initial inoculum size of *Debaryomyces hansenii* var. *fabryii* from 10^5 cells/ml to 10^4 cells/ml resulted in decreased growth and degradation significantly.