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Utilisation of agro alimentary wastes for bio surfactants production by a thermophilic bacterial strain novelty isolated from an Algerian crude oil contaminated soil

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ABSTRACT/RESUME

Abstract: *In this work we have undertaken a study based on the production and characterization of biosurfactants from a thermophilic bacterial strain bacteria isolated from soil contaminated with petroleum hydrocarbons. The results indicate a reduction in the surface tension (32 mN /m) by the strain 1J. The influence of various parameters (carbon source, nitrogen source, pH, salinity) on the emulsifying activity and the surface tension reduction revealed that the olive oil mill effluent (0.5%) and ammonium chloride present the best carbon and nitrogen sources for biosurfactant production by this strain. The maximum of biosurfactant production was obtained at near neutral pH and a salinity of 2%. The biosurfactant produced by our strain improved a resistance to extreme conditions of temperature (4 to 121°C), pH (2-12) and salinity (up to 250 g / l). These interesting characteristics of our local biosurfactant find numerous applications in various food areas.*