

13th International Conference on

Microbial Interactions & Microbial Ecology

July 19-20, 2018 | Rome, Italy

Isolation and identification of palm oil and soybean oil degrading bacteria from bio extract

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Vegetable oils are substances that cause water problem. They released into the environment with wastewater derived from the food processing industry, restaurants and kitchens. They can cause problem in environment due to their physical properties. One method to solve this problem is the use of bio-extract. Bio-extract derived from the fermentation of vegetable and fruits residues with sugar. It contain an organic substances and microorganisms that can degrade oils. The isolation and identification of bacteria from bio-extract which can degrade palm oil and soy bean oil is the aim of this research. The isolation of microorganisms was carried out, using M9 liquid media enriched with 1% (v/v) soybean or 1% (v/v) palm oil added with 2 ml bio-extract. The samples were screened for lipid degrading organisms using serial dilution and spread onto the M9 agar plates enriched with 0.2% (v/v) soybean oil or palm oil and 0.5X PCA media enriched with 0.2% (v/v) palm oil or soybean oil. Thirty microorganisms were isolated from bio-extract that showed ability to degrade palm oil and/ or soybean oil. The bacteria categories in three groups, The first group degrade soybean oil. The second group degrade palm and soybean oils so, these group select as good bacteria due to degrade palm oil and soybean oil. The third groups of bacteria did not degrade oils. So, seven strains of bacteria were selected according to the size of clear zone in soybean and palm oil containing agar plate. The selected bacteria strains were identified using, morphological and physiological characteristics according to the method of "Bergey's manual of determinative bacteriology". The bacteria can be categorized in to three groups. The first group consisting of three strains, they are Gram-positive, rod shape, oxidase negative. The second group consisting two strains they are Gram-negative, rod shape and fermented glucose. The third group consisting two strains, they are Gram-negative, rod shape, and did not fermented glucose.

Biography

Nahid Esmaeili associated with Department of Food Biotechnology, Assumption University, Thailand. She has published several papers in reputed journals.

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