

Application of Phenol Degrading Microorganisms for the Treatment of Olive Mill Waste (OMW)

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Abstract : The growth of the olive oil production in Saudi Arabia peculiarly in Al Jouf region in recent years has been accompanied by an increase in the discharge of associated processing waste. Olive mill waste is produced throughout the extraction of oil from the olive fruit using the traditional mill and press process. Deterioration of the environment due to olive mill disposal wastes is a serious problem. When olive mill waste disposed into the soil, it affects soil quality, soil micro flora, and also toxic to plants. The aim of this work is to isolate microorganism (bacterial or fungal strains) from OMW capable of degrading phenols. Olive mill wastewater, olive mill waste and soil (beside oil production mill) contaminated with olive waste were used for isolation of phenol tolerant microorganisms. Four strains (two fungal and two bacterial) were isolated from olive mill waste. The isolated strains were *Candida tropicalis* and *Phanerochaete chrysosporium* (fungal strains) and *Bacillus* sp. and *Rhodococcus* sp. (bacterial strains). These strains were able to degrade phenols and could be used for bioremediation of olive mill waste.

Keywords : bioremediation, bacteria, fungi, Sakaka

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