INTRODUCTION

Petroleum hydrocarbon continues to be used as the principle source of energy and hence an important global environment pollutant. Apart from accidental contamination of the ecosystem, the vast amount of oil sludge generated in refineries from water oil separation systems and accumulation of waste oily materials in crude oil storage tank bottoms pose grave problems because of the expensive disposal methods. Biosurfactant are amphiphilic compounds that reduce surface and interfacial tension by accumulating at the interface of immiscible fluids or of a fluid and a soil increase the surface areas of insoluble compounds leading to increase the mobility. They are produced by many bacterial strains that can degrade and transform the components of problem products. They are non-toxic, non-hazardous, bio-degradable and environmentally friendly compounds [Banat et.al.2000]. The total surfactant production has exceeded 2.5 million tons in 2002 [Delu and paquot, 2004] for many purposes such as polymers, lubricants and solvents. The growth rate is related to the world demand in detergents science these sector uses over 50% of surfactant production [Delu and paquot, 2004].

The Biosurfactant are complex molecules covering a wide range of chemical types including peptides, fatty acids, phospholipids, glycolipids antibiotics, lipopeptides etc.[Anandaraj et.al.2010 ]. Biosurfactants, lead to an increasing interest on these microbial products as alternatives to chemical surfactant [Banat et.al.2010]. Current world wide surfactant market are around $ 9.4 billion per annum and their demand is expected to increase at a rate of 35% to word the end of the century. Moreover, many commonly used synthetic surfactant are toxic [Desai and Banat, 1997; Batista et.al.2006] and poorly biodegradable; their application may lead to the accumulation of ecologically harmful compounds in soil [Kuyukina et.al. 2005]. Biosurfactants have several advantages over the chemical surfactant such as lower toxicity, higher
biodegradability, better environmental compatibility, higher foaming high selectivity and specific activity at extreme temperature, pH and salinity and the ability to the synthesized from renewable feedstock [Desai and Banat 1997, Kuyukina et.al. 2005].

The most important surface active properties evaluated in screening for microorganism with potential industrial application are surface tension reduction [Batista et.al. 2006]. Surface tension is a parameter that is commonly used to describe the effectiveness of a surfactant [Bodour et.al. 2003] criterion used for selecting biosurfactant producer the ability to reduced surface tension below 40mN/m (Cooper et.al. 1979, Batista et.al. 2006). Marine biosurfactants produced by some marine microorganism have been paid more attention, particularly for the bio remediation of the see polluted by crude oil, the use of biosurfactant protect the marine environment seems possible since a number of marine bacterial strains can produce biosurfactant during growth on hydrocarbons [Bodour et.al. 2003].

Numerous microorganisms such as yeast, bacteria, and filamentous fungi have been widely used in the production of biosurfactant [Meta Sandoval et.al.2000]. These microorganisms have been found in contaminated sites containing problem hydrocarbon by products and industrial waste. For example, Cupriavidus sp.BSNC28C isolated from hydrocarbon-contaminated environment can reduce surface tension in the culture medium by up to 37.1 million [Ruggeri et.al.2009]. Pseudomonas aeruginosa B189 isolated from a milk factory exhibited higher surfactant activities that the artificial surfactant such as SDS and tween 80 [Thanom et.al. 2007]. Thus, the isolated bacteria producing biosurfactant from the environment can provide excellent materials and resources.