Editorial

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# Environmental Bioremediation of Industrial Effluent

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Deaden the use of microorganisms or condense the concentration of hazardous waste contaminated plant is called biodegradation. Biological cleaning systems have a variety of applications such as decontamination of contaminated areas such as water, soil, sludge and flows. Rapid industrialization, urbanization, intensive agriculture and other human activities have led to land degradation, pollution and decrease crop productivity in all sectors of agriculture. Human activity has increased pressure on natural resources and has become a source of countless impurities. Several methods were designed and developed, but more often the process again produces secondary contamination, which again stood environment. Bioremediation appears to be effective and attractive tool to treat and recycle environment in an environmentally friendly manner. Bioremediation was used in many places around the world, with varying degrees of success. Bioremediation, both *in situ* and *ex situ* also had a strong scientific growth, partly due to increased use of natural suppression, because most natural attenuation due biodegradation. Bioremediation technology leads to the degradation of pollutants can be lucrative and environmentally friendly alternatives. Industrial emissions are a major source of toxic contaminants in all environments. Globally, rapid industrialization and urbanization have improved levels of organic pollutants in the environment [1]. Using the heterotrophic bacteria showed the huge potential of wastewater and industrial wastewater, bioremediation of soil and water, detoxification of chemical waste, bio fertilizers, and food, feed and fuel industries. The composition of the activated sludge treatment of municipal wastewater is composed mainly from microorganisms such as *Pseudomonas, Flavobacterium, Alcaligenes, Acinetobacter*, and *Zooglea sp*. This group of bacteria is primarily involved in the biological treatment of municipal wastewater; the presence of organic matter in the aerobic system supports the growth of heterotrophic in the inhibition of the oxidation of ammonia. Heterotrophic microorganisms compete favorably oxygen due to a lower growth rate and exchange of nitrifying microorganisms. *Pseudomonas pseudoalcaligenes*, when introduced in polluted areas may adversely affect higher concentrations of tributyl phosphate, use it as the only carbon source Previous studies have shown that *P. pseudoalcaligenes* employing nitrobenzene as one of nitrogen, carbon and energy, and also has the ability to use 2 -4 flurobiphenyl as the sole carbon and energy source. *Pseudomonas pseudoalcaligenes* has a high potential degradation of tributyl phosphate was also isolates. *Bacillus megaterium, Bacillus subtilis, Alcaligens faecalis, Pseudomonas sp. and Zooglea remigera* proved to be one of the best microorganisms for the biological purification of emissions textiles. Bacterial species *Pseudomonas stutzeri* and *Pseudomonas putida* has potential application for bioremediation of heavy metals from domestic and other industrial waste water with moderate levels of heavy metals [2]. *Bacillus*, and *Pseudomonas* is important in aerobic degradation and biodegradation, and therefore play a key role in the carbon cycle. *Pseudomonas* is known for their ability to degrade the compound which is very sensitive to other organisms, including aliphatic and aromatic hydrocarbons, fatty acids, insecticides and other pollutants. However, increased concentrations of chloride observed increase in specific nitrogen or chemical rates removing oxygen during nitrification fishmeal vegetable waste experiment decomposition of black liquor from cellulose sulphate and paper mill in a continuous reactor, with *Pseudomons stutzeri, Pseudomonas mendocina* and *Alcaligens faecalis* showed promising agent chemical oxygen demand, and removeal lignin. Pseudomonas is responsible for the effective removal of chemical oxygen demand, biochemical oxygen demand and at some stage also Ammonical nitrogen removal activated sludge. During the nitrification process, chemical consumption of oxygen is removed from 95% to 60%, and nitrification ranged from 65-25%. *Pseudomonas putida, Bacillus sp and Citrobacter* sp recorded only deinked waste water to 97%, but can also effectively reduce the biochemical oxygen demand, chemical oxygen demand, and 96.63 to 96.80%, respectively, within 24

 

hours. Furthermore, these bacteria can also remove heavy metals up to 82 to 99.8%. Biodegradation of microbial activity stimulated by adding nutrients, electron and substrate or introducing microorganisms with desired catalytic performance. Some common microorganism used in the decontamination process is *Bacillus, Achromobacter, Pseudomonas stutzeri, Pseudomonas putitda, Pseduomonas mendocina, Zooglea remigera, Arthrobacter, Alcaligens faecalis, Flavobacterium, Micrococcus*, and *Rhodococcus* species. The main types involved in efficient wastewater treatment include lactic acid bacteria *Lactobacillus casei*, *L. planterum*, *Streptococcus* and *Rhodopseudomonas*. Nutrients in the paint contaminated solution plays an important role in the process of removing ink color, a greater quantity of nutrients significantly affects the growth of microorganisms and enhance degradation of dyes in aqueous solution. Pseudomonas sp. isolated from azo contaminated soil was capable azo black discoloration-E for use as a nitrogen source and use almost 300 ppm to 36 hours. Bioremediation provides a technique for cleaning up pollution improve the natural biodegradation. So develop an understanding of microbial communities and their reactions to the natural environment and pollution, expansion of knowledge about the genetics of microbes that can improve our ability to be broken debris. Identifying the right microbe treatment of biological and management of these field trials identified microbes for bioremediation techniques would certainly provide cost-effective techniques and offer opportunities for significant progress in this area. Each microbe has different requirements for growth, they each need to be isolated form which can be easily grown in the laboratory with minimum requirements and may used in the treatment of many different contaminants [3]. Use of genetically modified microorganisms is not necessary, because in most cases there is a number of naturally occurring microbial strains. Since natural resources are an important asset for the people will bioremediation of contaminated areas and ecosystems to be the best ecological way to preserve a limited resource, and ensure efficient recycling. Bioremediation is a growing field with many players already in this area, creating a myriad of products that have overcome nutritional deficiency in fish farms, improve releasing nutrients into the soil, improving the composting of industrial waste, eliminate toxic chemicals, and the list is growing, Still here is scope to develop new products that can contribute to our goal of cleaning up our environment.

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