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Microorganisms in Bioremediation

Maulin P Shah*

Division of Applied and Environmental Microbiology, Enviro Technology Ltd, India

Due to the industrial revolution and emergence of large scale industries consumption of raw materials has increased many folds thereby huge quantities of chemicals, radioactive wastes, are being dumped into local streams and waste lands causing irreparable damage to the biosphere. There is an emergency need to mitigate and find ecofriendly solutions to solve the problem. Bioremediation is gaining attention worldwide in mitigating hazardous pollutions and in the treatment of industrial wastes.

Journal of Bioremediation and Biodegradation is an international open access peer reviewed journal that publishes scientific articles related to Environmental toxicology, Industrial pollution, Bioremediation, Toxicogenomics, Public health, etc. The current Volume 7, Issue 4 of the Journal published nine research articles and a research communication.

Olubunmi et al. in their research article evaluated the Bioremediation potential of cow dung and a microbial consortium (*Aspergillus niger, Pseudomonas aeruginosa, and Penicillium chrysogenum*) combination in mitigating the tannery effluent pollution in soil. Author found that the combinatorial treatment had increased the soil pH from 5.8 to 6.9-7.2. Authors concluded the combination of cow dung and microbial consortium in potential application in bioremediation of soil polluted by tannery effluents [1]. In the research article Prabhavathi et al. demonstrated the binding energy between ThrH and 3D crystal structures of indigo dye and calculated the gliding score and gliding energy based on the hydrophobic interactions between amino acids and dye residue. Authors concluded that the binding energy was due to the presence of magnesium ions and the catalytic molecules present at the binding sites [2].

Godsgift et al. isolated, characterized and screened three species of bacteria namely Bacillus subtilis SA7, Citrobacter sp. SB9 and *Pseudomonas aeruginosa* SA3 and two species of microalgae *Chlorella minutissimma* and Aphanocaps for their hydrocarbon degradation potential. Authors found that effective synergism and excellent PAH degradation can be achieved and by micro algal-bacterial consortium and the success is highly dependent on the microbial composition of consortium [3]. Cao et al. gave an updated review on the development of lignocellulose-based biobutanol production and his description helped in understanding of the structure of the pretreatment technologies, and fermentation processes of feedstock. Authors have also discussed the challenges and perspectives for the conversion of lignocellulosic biomass to biobutanol [4].

In the research articles Loretta et al. studied the Palm Oil Mill Effluent (POME) *in vitro* degradation pattern by *Bacillus sp* and *Pseudomonas* sp., Abdullah et al. studied the degradation of λ-Cyhalothrin and Profenofos using Endogenous Bacterial Isolates, Roshtkhari et al. studied the Application of Rhamnolipid and Microbial Culture for the improvement of Oil Sand Tailing Sedimentation [5-7].

Venkatraman et al. in their research article analyzed the Foliar Nutrient Composition of 19 Tree Species Grown on a Phytocapped landfill site. While Liu et al. described the use of Ecopilingin remediation of PAH-Contaminated Storm-water Lagoon Sediment; Mutua et al. described the meat processing wastewater biological treatment using lab-scale aerobic/anoxic sequencing operated batch reactors [8-10].

References

1. Akpomie Olubunmi O, Ejechi Bernard O (2016) Bioremediation of Soil Contaminated with Tannery Effluent by Combined Treatment with Cow Dung and Microorganisms Isolated from Tannery Effluent. J Bioremed Biodeg 7: 354.
2. Prabhavathi P, Rajendran R, Karthik Sundaram S, Dinesh Kumar S, Santhanam P, et al. (2016) Molecular Docking Studies on Potent Adsorbed Receptor of Protein: A New Target for Biodegradation of Indigo Dye. J Bioremed Biodeg 7: 356.
3. Gods'gift OE, Fagade OE (2016) Microalgal-Bacterial Consortium in Polyaromatic Hydrocarbon Degradation of Petroleum – Based Effluent. J Bioremed Biodeg 7: 359.
4. Cao G, Sheng Y, Zhang L, Song J, Cong H, et al. (2016) Biobutanol Production from Lignocellulosic Biomass: Prospective and Challenges. J Bioremed Biodeg 7: 363.
5. Loretta OO, Stephen E, Ezeata A, Usman E (2016) In Vitro Biodegradation of Palm Oil Mill Effluent (POME) by Bacillus subtilis, Pseudomonas aeruginosa and Aspergillus niger. J Bioremed Biodeg 7: 361.
6. Abdullah RR, Ghani SBA, Sukar NA (2016) Degradation of Profenofos and λ-Cyhalothrin Using Endogenous Bacterial Isolates and Detection of the Responsible Genes. J Bioremed Biodeg 7: 360.
7. Roshtkhari SJ, Mulligan CN (2016) Application of Microbial Culture and Rhamnolipid for Improving the Sedimentation of Oil Sand Tailings. J Bioremed Biodeg 7: 358.
8. Venkatraman K, Ashwath N (2016) Foliar Nutrient Composition of 19 Tree Species Grown on a Phytocapped Landfill Site. J Bioremed Biodeg 7: 357.
9. Liu X, Kiwanuka S, Cleary K, Ryan D, Dowling DN, et al. (2016) Use of Ecopiling to Remediate PAH-Contaminated Storm-water Lagoon Sediment. J Bioremed Biodeg 7: 355.
10. Mutua DN, Njagi ENM, Orinda G, Obondi G, Kansiime F, et al. (2016) Biological Treatment of Meat Processing Wastewater Using Lab-Scale Anaerobic-Aerobic/Anoxic Sequencing Batch Reactors Operated in Series. J Bioremed Biodeg 7: 362.