

An executive summary of the final report of the work done on the Minor Research Project of Sushma Patrao entitled ‘Degradation of Surfactant in Detergent by Soil Bacteria’ sanctioned by UGC, vide sanction letter no. MRP (S)-777/10-11/KAMA002/UGC-SWRO dated 22nd December, 2010

Surface active agents (Surfactants) are chemical compounds which are largely used as raw material in detergent production and their introduction into the environment in large concentrations causes harm to the aquatic bodies. *Bacillus subtilis* and *Bacillus cereus* were analysed for their capacity to degrade surfactants in laundry and dish washing detergents. Bacteria were isolated from soil at the outlet of these detergents and identified by biochemical tests. Methylene Blue Photometric Assay and Methylene Blue Active Substance Test were used to determine the amount of degradation by the bacteria. *Bacillus subtilis* showed better degradation for both dish and cloth washing detergent. Degradation was highest during the first 24 hours of incubation. Increase in surfactant concentration after 24 hours is attributed to the production of biosurfactant by both bacteria further *Bacillus subtilis* and *Bacillus cereus* were studied for their surfactant degradation capacity at varied conditions such as temperature, pH, agitation and inoculum concentration.

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SUSHMA PATRAO