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## Novel biological method for iron rust removal

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Rust is the reddish brown oxide of iron formed by the action of moisture and oxygen on the metal. It is an electrochemical corrosion which weakens the iron structures. It was estimated that the corrosion alone causing a loss of over \$5000 bn USD to global economy every year. According to a recent report of NACE the corrosion cost in any developing countries predicated by 5% of the GDP, for India the cost of corrosion is estimated to be Rs 1.52 lakh crores per year. All available methods for rust removal and corrosion prevention are having their own limitations. Therefore, it is an urgent need to find out suitable method to check the corrosion. A fungal based biological derustification process was observed and reported by us already. This present investigation deals with our further experiments and experiences on the fungal based technology for iron rust removal. The derustification process was repeated once again to conform the reproducibility of the technology in polybag fermenters. Rusty iron mesh which were rolled in the form of cylinders were placed in the fermenters to expose them to the aerosol particles generated by the fungus. The rate of derustification was noted. Attempts were also made to enhance the aerosol generation from the substrate (straw) by coconut water supplementation. It was observed that the rusty metals placed in the supplemented substrate were derusted quickly than the raw substrate. Various level of supplementation was also correlated with rate of derustification. Further works on rust removal process are under progress.

## Biography

S Rajendran holds MSc, MPhil, PhD degrees and is an Associate Professor at Saraswathi Narayanan College and a Coordinator of Unit of Rural Biotechnology at Saraswathi Narayanan College, India. He has over 50 scientific papers and projects either presented or published. He is an internationally recognized expert in many areas of Environmental biology including solid waste management, waste water treatment, anaerobic digestion, biofuel, bioenergy production and formulator of bio-pesticide and herbicide. He has delivered key note speech in various international conferences and also given invited lectures in various educational institutions and universities. He is one of the leading Scientific Writers in Tamil Dailies. He has conducted more than 30 scientific workshops for the upliftment of rural people and women self help groups. He also had given training to municipalities employees about garbage disposal. Because of his excellence in environmental science, he was awarded with Patron of Environment by Tamil Nadu Government in 2006. His research group is actively working in the following aspects: MSW management, mushroom culture, biofuel generation, waste water treatment and bio-pesticide and herbicide development. His work in biological derustification is a novel pioneer technique and growing area in the environmental biotechnology.

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