PREFACE

Environmental pollution has now become a formidable danger that confronts mankind. Out of various pollutions, water pollution is more dangerous to developing nations like India. The water bodies are highly polluted due to the discharge of waste water from industries without proper treatment. In Kerala, coir based industries are more pronounced than other and provides economy to the state and employment to around 3 lakh people. But the discharge of waste water from the small scale dyeing units makes the water bodies coloured and makes unfavourable for the life of aquatic organisms. The depletion of aquatic life and bioaccumulation through entire food web finally damages the health of humans.

Biodegradation can effectively be used for the removal of contaminants from waste water which is eco-friendly and cost effective. Development of new bacterial consortia which can remove structurally different dyes would be a boon to industries. Optimization of process parameters improves the capability of strain to degrade the dyes effectively. Moreover, identification of the degraded products helps in proposing the degradative pathways of these dyes.

“Biodegradation of dyes” has been taken up for detailed study as a part of our commitment to the health problems of the society. In this study, we have made an attempt to develop a bacterial consortium which is eco-friendly and could be effectively used both in small scale and large scale industrial effluent treatment plants.

The above aspects are discussed in nine chapters with this concept in mind. General introduction is given in chapter I, Review of literature in chapter II, Physicochemical characterization of dye effluents is given in chapter III. Toxicity of dyes on aquatic fauna by taking fish as model is given in chapter IV, Isolation, identification and characterization of bacteria capable of dye
degradation is given in chapter V, Optimization of process parameters is given in chapter VI, Development of new bacterial consortia is given in chapter VII, Analysis of degraded products and phytotoxicity studies are discussed in chapter VIII and Summary and conclusion in chapter IX.