SUMMARY

Water is most essential for all living organisms. The water quality situation is highly variable reflecting social economic and physical factors. We have to face serious problems associated with degraded water quality up to some extent. Due to rapid industrialization urbanization and increasing use of chemicals in agriculture, Pollution imposes of water bodies. The environmental pollution now becomes threatening to mankind and a common phenomenon for towns and villages throughout the country. The storm of modernization and industrialization has not only uprooted man but in fact, has destroyed his habitat and environment. Water is a vital source for human existence, has been adversely affected by human activities. However, if this gift is misused and mismanages, results are disastrous. In dealing with pollution of nature and natural resources, nature's mechanism, are falling short of and finding it difficult to cope with, and hence efforts of mankind to keep the environment green and clean are wanting to maintain the balance of the nature intact. The rapid development of industry and discharged effluent has created serious problems of water pollution. A distillery industry is one of the most polluting industries. It is a major agro based industry. A large amount of wastewater is generated during the manufacture of alcohol. These effluents have high pollution load in terms of physicochemical parameters. When it is discharged not only pollute river but also the ground water. As such the water quality and aquatic biota is changed.

In the present study, the physicochemical parameters of the effluent like pH, colour, DO, BOD, COD, CO2, Hardness, chloride, TS, TDS, TSS, Sulphate, phosphate and nitrate have been analyzed using standard methods. In distillery effluent (S1 reported high values of BOD, COD, Chlorides, TSS, and TDS, Sulphate phosphate due to high organic and inorganic load. Dairy is agro based industries in India. It is another site selected for physico-chemical analyses of effluent. The Dairy discharges most decomposable effluent, which deplete oxygen
level of a natural water body.

Dairy effluent (S2) also showed high values of BOD, COD, Chlorides Phosphate, sulphate and absence of dissolved oxygen. Well water (S3) and bore well water (S4) were showed contamination due to percolation of distillery effluent.

Present study was planned for two years for periodical and seasonal analysis of city M.I.D.C. area of Aurangabad from listed sampling stations.

To study the acute toxicity, *Puntius ticto* has been used as test fish. Dairy and distillery effluents were used for the toxicity test. The LC$_{50}$ value of distillery effluent has been recorded at 25%, 24%, 23% and 22% of the effluent for 24, 48, 72 and 96hr respectively. For dairy effluent, the LC$_{50}$ values have been recorded at 40%, 39%, 38% and 37% of the effluent for 24, 48, 72 and 96 hr. respectively.

To study of histopathological changes gill, liver and kidney have been selected. Large amount of cellular damage observe in the gill, liver and kidney for different concentration of effluent for certain time period.

To substantiate the study, count of microbiological population Most Probable Number (MPN) for total coliform group has also been considered as one of the prime factor for the pollution studies.

These comprehensive reports have been recorded in different chapter accordingly with exclusive descriptions highlighting the reasons and the depth of pollution load in Aurangabad city. To know the physicochemical parameters of the samples collected at different sampling sites are selected.

1. Distillery effluent (S1)
2. Dairy effluent (S2)
3. Well (S3)
4. Borewell (S4)

Keeping in mind the severity of water pollution due to industrial discharge
and toxic effect of this (waste) effluent on fish considering cellular damage on target organs, the present study has been assimilation of the experimental data of a different pollutants procured through the experimentation carried out in this regard. It could be predicted that, in the present study, essentially take precautionary measures against the discharge of effluent, to some the health for tomorrow.