PREFACE

In the present day world, all the resources available in nature are being destructed by sophisticated devices due to the installation of industries. The misuse of the natural resources, deforestation on large-scale, elimination of toxic and harmful substances into the environment and by the negligent action of man against nature have boomeranged and they are endangering life on earth.

There are many sources, which are reducing the quality of the environment. Among them, the biological agricultural chemicals, collectively called as pesticids, form a major part of poisonous substances like insecticides, nematicides, rodenticides, herbicides and fungicides. The immense use of these pesticides has led to their accumulation in the environment and results in the harmful effects on the biota leading to ecological imbalance.

Due to increase in pollution, rapid growth of population and rapid industrialization there had been changes in the environment. As there is an increase in the demands of the growing population, depletion of the natural resources occur, as a result pollution becomes the important limiting factor for man. As a result of population explosion, there is degradation in the quality of air, water and land.

Studies on the fatal effects of pesticides involving their uptake, persistence and general physiological effects have gained momentum in fishes both marine and freshwater. The studies involving sublethal effects of the pesticides during long term exposure indicates series of events in their physiological and biochemical systems leading to the maintenance of homeostasis for the adjustment and adaptation of the fishes to toxic stress. Studies on the effect of pollutants involving long term of experiments on the
biota of fresh water organisms like fishes have been carried out both in extensive and intensive ways. Recently a large number of synthetic compounds especially pyrethroid insecticides have drawn attention of scientists. This is due to their high photostability, degradability, non-persistent nature and low mammalian toxicity. Use of these pesticides on large scale against insects and their immense usage in agriculture had made them to enter water system, which is supposed to tilt the aquatic ecosystem because of their wide spectrum of action.

Based on these above features, an attempt has been made here to understand the lethal and sublethal effects of cypermethrin on physiology, biochemical responses and compensatory mechanism adapted by the fish *Labeo rohita* during cypermethrin exposure.