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The relationship of man with the environment is necessarily symbiotic. The equilibrium between the two must be maintained at all costs. Through the existence of the man on the earth he has depended upon a neat balance among the various elements of the earth. During the last few decades man’s relationship with his environment has drastically changed due to a vast increase in his expectations and activities.

The threat to the human environment from the progressive deterioration of the biosphere has emerged as one of the major issues of modern times. Advancement in technological change has increased the pollution level above the self-cleaning capabilities of environment. Further investigation efforts in industrialization and urbanization due to growing energy consumption modern agricultural and transportation techniques rising living standards, have contributed much in disturbing the ecological balance on which the quality of our environment depends.

With the growth of civilization an increasing number of chemicals were being introduced to the environment. These chemicals are hazardous to living organisms, to humans and to our ecosystem. The aquatic environment is particularly sensitive to the toxic effects of contaminants since a considerable amount of chemicals used in agriculture and in industries enters to the aquatic ecosystem by the toxicants has been of particular interest in recent years. Since man has to depends on the aquatic environment mainly as source of food.

Wide spread and indiscriminate use of the pesticides in agriculture and discharge of untreated industrial effluent, sewage into river has been causing a
great concern to the environment. The ultimate impacts of physical, chemical and biological parameters have direct and indirect effects on the aquatic fauna. The pesticides are widely used in controlling the agricultural pests and as such likely to make their way through run off from agricultural lands and drifts from aerial and land application to nearby water bodies. These pesticides possess a critical stress on the non-target aquatic biota like fishes, crustaceans, molluscan and other used for human consumption.

Generally there are two main reasons for studying the chemical behavior of pesticides in aquatic habitat to understand the biological cycling of pesticides. The biological cycling includes bioaccumulation, elimination, toxicity and biotransformation. Bioassay of toxicants studies contribute one of the most commonly used methods in aquatic environments studies with suitable organisms. The necessity to determine the toxicity of substances to aquatic forms at the lower level of the food chain has been useful and accepted for water quality management. Several studies have been conducted in assessing the toxicity of pesticides to the aquatic environment.

The molluscan used in the present research work are widely distributed in fresh water habitat and are known to act as intermediate hosts for several helminthes diseases of cattle and man in certain areas of India. The present Snail is also act as bio indicator of pollution in the fresh water environment.

Perusal of literature reveals that paucity of information is available on effect of folicure pesticide on physiology of fresh water snail *Lymnaea*. Hence the present study has been undertaken to evaluate the toxic effect of folicure pesticide on the physiology of fresh water snail *Lymnaea auricularia* as a bioindicator.
Aim and objectives of the investigation =

a) To evaluate the toxicity of folicure pesticide on fresh water snail *Lymnaea auricularia*.

b) To study the acute and chronic effect of folicure pesticide on respiratory mechanism of fresh water snail.

c) To study the acute and chronic impact of folicure pesticide on neurosecretary cells of fresh water snail.

d) To study the lethal and sublethal impact of folicure pesticide on biochemical changes of fresh water snail.

e) To study the acute and sub-acute effect of folicure pesticide on histopathological changes of gonads of fresh water snail.

The present research work is divided in to five chapters. The first chapter deals with the isolation and characterization of neurohormones enfluencing the physiological process of fresh water snail *Lymnaea auricularia*. The literature reveals that the neurohormones effluence all the physiological processes in Molluscan.

Second chapter deals with the effect of folicure pesticide on neurosecretary cells during acute and chronic exposure. The Lc50 values of folicure pesticide was calculated by using the probit analysis chart (Finney) and *Lymnaea* were exposed to Lc50 values of 24, 48, 72 and 96 hrs. respectively. In the present probe a severe damage in neurosecretary cells of brain and thoracic ganglia was observed after lethal and sub lethal exposure to folicure pesticide. During acute exposure decrease in the cell diameter was observed. Chronic expose under pollutant stress leads to damaged neurosecretary materials in the neurosecretary cells.
Third chapter comprises the effect of folicure pesticide on respiratory rate (oxygen consumption) after acute expose and sublethal (exposed to 1/10\textsuperscript{th} \textit{LC}_{50} values of 48hrs.) and oxygen consumption was measured by using the modified Winkler’s azide method. Change in respiratory activity of the fresh water snail \textit{Lymnea auricularia} acts as a sensitive indicator to folicure pesticide. In general the rate of oxygen consumption was significantly affected during lethal and sublethal exposure to folicure pesticide.

Fourth chapter concerned with the biochemical studies in Snail \textit{Lymnea auricularia} after lethal and sublethal exposure to folicure pesticide. After exposure periods, protein, carbohydrate, lipids and ascorbic acids were estimated from the tissues like hepatopancreas and gonads. Present investigation reveals wide fluctuation in the biochemical constituents of various tissues like gonads and hepatopancreas were observed after lethal and sublethal exposure to folicure pesticide.

Fifth and last chapter comprises the toxicity of folicure pesticide on histological changes in gonads of fresh water Snail \textit{Lymnea auricularia} after lethal and sublethal exposure to the histological studies of gonads. During acute studies vacuolization, damages to testicular layers, degeneration of tissues in tastes and degeneration of nutritive cells damage to ooplasmic materials and vacuolization in ovary was observed.

The author hopes that this work would contribute a little to the understanding of toxicity of the folicure pesticide to the freshwater snail \textit{Lymnaea auricularia}. 
The Central ganglia of the snail, lymnaea showing the location of neurosecretory cells, the position of the mediodorsal and laterodorsal bodies above the cerebral ganglia are also shown.
Scientific classification

Kingdom: Animalia

Phylum: Mollusca

Class: Gastropoda

Subclass: Pulmonata

Order: Basommatophora

Superfamily: Lymnaeoidea

Family: Lymnaeidae

Subfamily: Lymnaeinae

Genus: Limnaea

Species: Limnaea auricularia
Fig-1: Fresh water snail Lymnea auricularia