



# **Zoologie Innovante**

## **Series 2**

### **Chief Editor**

Dr Sr. Beena Jose

### **Editors**

Dr. Meera K M | Sr. Freny Jacob

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*An initiative of PG Department of Zoology,  
Vimala College (Autonomous), Thrissur-9*

## **ZOOLOGIE INNOVANTE SERIES 2**

**PG Department of Zoology**

**Vimala College (Autonomous), Thrissur – 680009**

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## CONTENTS

1. Study of Physical Properties of Primary and Secondary Feathers in rock Pigeon (columba livia), German Beauty Homer (fancy breed of pigeon, columba livia) and Scarlet Macaw (Aramacao) - Amrutha E A, K B Sumena, Indu M S, Honey Sebastian .....	11
2. Toxicological Profiling of Dimethoate on Aquatic Microbes, Pheretima Posthuma and Dania Rerio - Aiswarya James, KayeenVadakkan, Meenakshi Nair, Dixy B.A, Sheeba P .....	16
3. Mecp2 Mutations in Rett Syndrome Patients from South India - Anagha.K U, Anitha Ayappan Pillai, Rahna Parakkal, Indu M.S, Petrisia Joseph.....	28
4. Pioneering Bioremediation using Biofabricated Nanoparticles - Asha Varghese, KayeenVadakkan, Meenakshi Nair, Meera K.M, Freney Jacob.....	34
5. Importance of Circulating Tumor cells in Oral Tongue cancer Patients - Christy K Saju, S Kannan, Noble T Baby, Indu M S, Freney Jacob .....	39
6. Genetic Association study of the Reelin snp rs736707 with Autism Spectrum Disorder in Kerala Population - Haritha H, Anitha Ayyappan Pillai, Rahna Parakkal, Meera K M, Sheeba P.....	45
7. Effect of heavy Metal Contamination upon Bacterial Population - Riya Abraham, KayeenVadakkan, Meenakshi Nair, Dixy B A, Freney Jacob .....	50
8. In-Vitro Antihyperlipidemic Activity of Aqueous Extract of Myristica Fragrans Riya Sajan A, Kayeen Vadakkan, Meenakshi Nair, Vidya P M, Dixy BA, Petrisia Joseph.....	55
9.. Study of UV Protection Activity of Bacterial Pigment Extracted from Pseudomonas Putida - Rose Mariya P L, Kayeen Vadakkan, Meenakshi Nair, Meera K.M, Sheeba P.....	62
10. Proximate Analysis of hoof Capsule in Hogdeer (Hyelaphus Porcinus) Savitha P S, Sunil Kumar N S, Indu M S, Feebarani John .....	73
11. Analysis of Histological and Morphological Changes of Larvae Culex Quinquefascitus on Addition of Chloroform Extract of Piper Betle - Silla Antony, Kayeen Vadakkan, Meenakshi Nair, Meera K M, Feebarani John .....	78
12. Synthesis and Characterization of Copper Nanoparticle using Pheretima Posthuma - Stemy M.J, KayeenVadakkan, Meenakshi Nair, Dixy B.A, Honey Sebastian.....	83

# **TOXICOLOGICAL PROFILING OF DIMETHOATE ON AQUATIC MICROBES, PHERETIMA POSTHUMA AND DANIA RERIO**

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## **Abstract**

Though the pesticides have been an essential part of agriculture to protect crops and livestock from pest infestations, it could pose potential risks to food safety, the environment and life. The extensive use of pesticides has an impact on the health of aquatic and terrestrial flora and fauna. Here an attempt is made to study the impact of a pesticide, Dimethoate on aquatic microbes *Pheretima posthuma* and *Dania rerio*.

**Key words:** Pesticide, Dimethoate, aquatic microbes, *Pheretima posthuma*, *Dania rerio*

## **Introduction**

Pesticides are chemical, biological or physical agents intended for destroying, repelling or mitigating any animal, microorganism or plant pest. Many people equate the term pesticide with insecticide. Pesticides are classified as insecticides, fungicides, herbicides, rodenticides, nematocides, molluscicides and plant growth regulators. The pesticides applied to the agricultural field should only be toxic to the target organisms, biodegradable and eco- friendly to some extent (Rosell *et al.*, 2008). But most of the pesticides are non-specific and kill organisms that are harmless and very useful to the various ecosystems. Multifarious and tremendous uses of pesticides are causing harm to the environment and its components. Some of the adverse effects emerged in the form of an increase in resistant pest population, decline in beneficial soil microorganisms, predators, pollinators and earthworms. Hence the concern about these environmental impacts prompted the study and research into the environmental fate of these agents.

Soil ensures the survival and existence of organisms and the terms soil health and soil environment are used to describe the soil property such as physical, chemical, biological characteristics, which promote the health of plants and animals. Earthworms are the supreme component of soil macrofauna and are the most important soil invertebrates responsible for developing and maintaining the nutritive