

# **GENETIC TOXICITY OF DIAZINON IN SOMATIC AND GERM CELLS IN THE RAT**



**S. SAROTHAMAN, B.V.Sc  
(I.D.No. MVM 98042) (PHA)**

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**MASTER OF VETERINARY SCIENCE**

**in**

**PHARMACOLOGY AND TOXICOLOGY**

**to the**

**Tamil Nadu Veterinary and Animal Sciences University**

**DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY  
MADRAS VETERINARY COLLEGE  
TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
CHENNAI - 600 007.**

**2000**

## CERTIFICATE

This is to certify that the Thesis entitled "**GENETIC TOXICITY OF DIAZINON IN SOMATIC AND GERM CELLS IN THE RAT**", submitted in partial fulfilment of the requirements for the degree of **MASTER OF VETERINARY SCIENCE in PHARMACOLOGY** to the Tamil Nadu Veterinary and Animal Sciences University, Chennai is a record of bonafide research work carried out by **Dr.S.SAROTHAMAN** under my supervision and guidance and that no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journals or magazine.

  
(Dr.INBARAJ CYRUS, Ph.D.)  
Chairman

Place : Chennai - 7.

Date : 23.11.2000

Approved :

Chairman :

  
(DR.INBARAJ CYRUS, Ph.D.)


Members

1. (DR.K.V.VENKATESWARAN, Ph.D.)

2. (DR.S.PRATHABAN, Ph.D.)

Date : 22.02.2001

External Examiner

  
Dr. Chandrasekharan  
H.N.

## ABSTRACT

**TITLE :** GENETIC TOXICITY OF DIAZINON IN SOMATIC AND GERM CELLS IN THE RAT

**Name of the Student :** S. SAROTHAMAN

**Degree for which the thesis is submitted :** MVSc in Pharmacology & Toxicology

**Chairman :** Dr.INBARAJ CYRUS, Ph.D.  
Associate Professor  
Dept. of Pharmacology and Toxicology  
Madras Veterinary College  
Chennai - 600 007.

**Year and Name of the University :** 2000 : Tamil Nadu Veterinary and Animal Sciences University, Chennai.

The organophosphorus compound, Diazinon is extensively used in Commercial, animal husbandry practice and agricultural sectors. The potential of the compound as genotoxic agent was determined both in somatic and germ cells employing *in vivo*, *in vitro* cytogenetic assays and sperm abnormality test in rats. The results indicated that the genotoxic effect of diazinon in both *in vivo* and germ cells assay was dose related, whereas it failed to induce genotoxicity in *in vitro* system.

The effect of diazinon on sperm indices was assessed and the results indicated a dose dependant testicular toxicity evidenced by histopathology.

Diazinon administration at subchronic dose levels in rats produced a significant elevation in the level of enzymes such as serum aspartate transamine, serum alanine transaminase and serum alkaline phosphatase indicating hepatotoxic effect.