Acknowledgement

It is my proud privilege to convey my deepest sense of gratitude to my guide, Dr. C.K. Sahu, Ph.D., Professor, Department of Zoology, University of Kalyani, for his guidance, suggestions, constructive criticism and keen interest throughout the entire period of research programme and preparation of manuscript.

I am grateful to all Head, Department of Zoology both past and present, University of Kalyani for providing necessary facilities.

I would like to express my sincere thanks to all the non teaching members, Laboratory staffs of the Department of Zoology, University of Kalyani for various help and assistance.

It is my great pleasure to extend my thanks to Registrar, University of Kalyani, Registrar, West Bengal University of Animal & Fishery Sciences, Kolkata-22 and Director of Animal Husbandry and Veterinary Services, Govt. of West Bengal for their help during my research study.

My grateful acknowledgement are also due to Dr. K.C. Bhowmik, Dr. D. Majumdar, Dr. Ashish Ranjan and Shri Raju Das for extending help in experimental works related to study.

I am also indebted to Prof. S. Sarkar, Prof. A.K. Samanta of W.B.U.A.F.S., Dr. N. Ghosh, Reader, B.C.K.V. and Dr. U. Dutta, Senior Lecturer, W.B.U.A.F.S. for their constant and valuable help during my research work of the project.

Thanks are also due to Dr. P. Das, Asst. Director, A.K.D. Harinaghat Farm, Dr. C. Lodh and Dr. S. Guha of W.B.U.A.F.S. for their mental support and extensive help.

I express my sincerest gratitude, indebtedness and affection to my reverend father, brother, sister, wife, daughters and all other relatives for their constant inspiration throughout my academic career.

Last but not the least, I have again an opportunity to recall my late beloved mother who used to dream for my higher studies.

Dated: 21-03-18
Place: Kalyani

(PRAMODE RANJAN NANDI)