Acknowledgement

I would like to express my sincere gratitude to my guide Dr. A. Ramachandran, Professor, School of Industrial Fisheries, Cochin University of Science and Technology, for his guidance, constant interest and valuable suggestions during the course of the study.

I place on record my sincere thanks to Dr. M. Shahul Hameed, former Director and Dr. C. Hridayanathan, Director, School of Industrial Fisheries, Cochin University of Science and Technology, Cochin, for the interest shown in this study.

I am thankful to Dr. K. Gopakumar, DDG (Fy), ICAR, and former Director of Central Institute of Fisheries Technology for granting me the study leave. The interest shown by the former Director Dr. K. Ravindran is thankfully acknowledged. I am grateful to Dr. K. Devadasan, Director, Central Institute of Fisheries Technology and former Head, Biochemistry and Nutrition Division for the interest and encouragement shown during the study leave period.

I am thankful to Mr. Rajan, owner of Kambivelikkal fish Farm and Hatchery, Thiruvankulam, for providing fish as and when required during the study period.

My sincere thanks are due to Mr. M.K.R. Nair, former Director, Integrated Fisheries Project, Cochin for the support during the initial period of the study. I am also thankful to Mr. Venu, IFP for the help rendered.

The encouragement extended by Dr. T. S. Gopalakrishna Iyer, HOD, Fish Processing Division, Dr. P.K. Surendran, HOD, Microbiology Fermentation & Biotechnology Division, and Dr. Jose Joseph, Dr. Srinivasa Gopal, Mr. Muraledharan and Dr. M.R. Raghunath, Scientists of CIFT is gratefully remembered.

I place on record my special thanks to Mrs. K. Ammu, Scientist, CIFT for critically going through the manuscript. My thanks are also due to Mrs. Suseela Mathew, Scientist, CIFT and my other colleagues of the Biochemistry & Nutrition Division for their help. The encouragement given by my other friends is also gratefully acknowledged.

My sincere thanks are due to my fellow research scholars, Mr. M.R. Boopendranath, Mrs. Saly N. Thomas, Mr. A.V. Shibu, Mr. B. Hari, Mr. Ranjit and Mrs. J. Shyma for the help and cooperation during my attachment to the University. I also thankfully acknowledge the help and encouragement given by the teaching and non-teaching staff of School of Industrial Fisheries.

Finally, I am indebted to my family - my parents, my wife and my children for their constant encouragement, forbearance and help during the course of my work.

T.V. Sankar