ACKNOWLEDGEMENT

Firstly, I bow my head before "The Almighty" whose unseen presence I could feel at every moment and by whose grace; I could successfully complete this endeavor.

I wish to place on record my deep sense of immeasurable gratitude and unbound-full indebtedness to Dr. K. K. Seethalakshmi, Supervising Guide for her valuable guidance, untiring interest, constant inspiration, esteemed advice and immense help rendered throughout the course of this study. I feel greatly honored by getting a chance to work under her guidance.

I express my deep sense of gratitude to Dr. R.C. Pandalai, Co-supervising guide, for his keen interest and unparallel support during the course of this study and in the preparation of thesis.

I am indebted to P. Mara Pandiyian IAS, Executive Vice President and Dr. V. N. Rajasekharan Pillai, former EVP, Kerala State Council for Science, Technology and Environment (KSCSTE), for the financial support provided. I acknowledge the encouragement and facilities provided by Dr. P.G. Latha, Director, KFRJ, Dr. P.S. Easa and Dr. K. V. Sankaran, former Directors, Kerala Forest Research Institute for the successful completion of this study. I express my sincere thanks to Dr. E.A. Jayson, Research coordinator, KFRJ, Dr. M. Balagopalan and Dr. K Swarupanandan, former research coordinators for their valuable suggestions and help rendered during the course of study. I would like to express my special thanks to Dr. T.K. Dhamodaran, Nodal Officer for the whole hearted advices and encouragement throughout the study period and also for fulfilling the official requirements of Ph.D.

My warm thanks go to Dr/s. George Mathew, M. Sivaram, Mallikarjunaswamy, G. E., members of Research Advisory Committee for their valuable suggestions and encouragement during the course of investigation. Thanks are also due to Dr. Sunanda for her great support during statistical analysis and interpretation of data.

No words can truly represent my esteemed gratitude to Dr. C. M. Jijeesh and Dr. T.J. Roby for their keen interest and critical advice for carrying out this work. Their timely suggestions helped me a lot in shaping the manuscript.
I am grateful to Mr. K.K. Unni, Dr. C.K. Somen, Scientists (Rtd.) of Kerala Forest Research Institute, Dr. B.N Satish, Forestry College, Ponnampet and other officials of Kerala and Karnataka forest department for providing the facilities for sample collection.

I am thankful to Mr. V.P. Raveendran, Scientist, Extension and training Division for his valuable help rendered during the study especially in field work. I am grateful to Dr. P.K.C Pillai, Scientist, Silviculture division for providing relevant facilities for this work. The valuable suggestions and positive criticism offered by Dr. Jose Kallarakkel, Dr. S. Sankar, Dr. Thomas P. Thomas, Dr. Sajeed, Dr. Suma, Dr. T. Surendran, Dr. K. V. Bhat and Dr. M.S. Mukthes Kumar is also deeply acknowledged. Mr. Kuruvila Thomas, Chief Conservator of Forest, Uttar Pradesh was always with me as a source of inspiration and his care and support rendered during the study is deeply acknowledged. I greatly acknowledge Dr. E.M. Muralidharan for providing facilities in the instrumentation lab for biochemical studies. I would like to express my gratitude to Ms. Sheela George and Veni, K for helping me in biochemical analysis and interpretation of data.

I owe my deepest gratitude to Smt. N Sarojam and all staff in the KFRI library. I wish to acknowledge Dr. Suganthan Ramamoorthy for helping me in the organization of the thesis. I would like to convey my special thanks to Mr. Jibi PO and Santhosh Kumar, M. for helping me a lot in carrying out the field work. I would like to extend my deep thanks to Ms. Hema P. who was always with me to support in each phase of study. I owe my deepest gratitude to my friend Mr. Rakesh R.R. for his valuable help rendered during the course of study. I fondly memorize the love, concern and help of Renuka, R, Lathika C and Biji C.P for the successful completion of thesis work. Profound thanks are due to my friends, Keerthy vijayan, Suresh K, Govind and Kripa P.K for their constant encouragement and support throughout the study period. I am indebted to all my colleagues in KFRI for their greater support during the investigation. I would like to specially mention the names of M/s, Smija Suresh, Sabeena, C.S., Remya, E.B, Sutheesh V.K., Kabeer, T.K., Sreedevi, M., Prasanth, K.M, Revathy U.S., Saumya M.T, Sruthi G., Bharath Nair, Swethamol, kavitha, M., Aryasilpa, Sajitha K.L, Sijimol, K, and Jiji santhosh for their kind co-operation and help during this work.

The moral support, constant encouragement and the love and affection extended by my parents and family members were always with me. I owe my hearty thanks to all of them.

LAKSHMI.C.J.