ACKNOWLEDGEMENT

I express my heartfelt gratitude to my respected research supervisor Dr. P. Venkatachalam, Associate Professor, Department of Biotechnology, Periyar University, Salem-636 011, TN, India, for his untiring inspiration, laudable counselling and surpassing guidance. This work was possible only because of his valuable suggestions and he shaped the problem and provided insightful and indomitable lead with much for his expert technical guidance, and unfailing moral support during the entire period of my research work. I am ineffably thankful for his patience and endurance throughout the study. It is his valuable suggestions, critical reading and effort, which has made it possible for me to shape my thesis in the present form.

I am greatly indebted to Prof. P. Perumal, Head, Department of Biotechnology, Periyar University, Salem and my doctoral committee member for his encouragement, support during the course of my study.

I owe a debt of gratitude to my doctoral committee members Dr. S. Nagalakshmi, Professor, Horticultural Research Station, Tamil Nadu Agricultural University, Yercaud-636 602, Salem Dt., and Dr. S. Girija, Assistant Professor, Department of Biotechnology, Bharathiyar University, Coimbatore-641046, for their valuable suggestions and encouragement in completing my research work.

I am immensely grateful to the Periyar University for granting me and providing a valuable UGC-University Research fellowship (URF) during my research work.

I sincerely wish to express my thanks to Dr. N. Elangovan, Dr. P. Indra Arulselvi, Dr. D. Natarajan and Dr. M. S. Shiva Kumar, Assistant Professors, Department of Biotechnology, Periyar University for their support and incessant help in completing my research work.

I would also like to convey my thanks to Dr. Geetha Natesan, Professor and Head, Department of Biotechnology, Mother Teresa Women’s University, Kodaikanal for her valuable suggestions.

I am extremely grateful to Dr. Srivaramanan Subramaniam, Senior Lecturer, School of Biological Sciences, Universiti Sains Malaysia (USM), Georgetown, Malaysia for his valuable suggestions and advices during the course of my research work.
My heartfelt thanks to Dr. R. Yasodha, Head and Scientist E, Department of plant biotechnology, Institute of Forest Genetics and Tree Breeding (ICFRE), Forest Campus, Coimbatore for her technical advises and encouragement during the course of my study.

I specially thank my colleagues Mr. M. Thiyagarajan, Mrs. S. Malar, Miss. P. Sangeetha, Mrs. T. Kayalvizhi, Mr. R. Manikandan and Mr. K. Murali Krishna who accompanied me in my research work and extended their full cooperation in research activities.

I wish to thank my juniors Mr. G. Prasannaraj, Mrs. A. Sujima Anbu, Mr. D. Mahendran, Mr. R. Raja and all others for providing a stimulating and fulfilled environment in completion of this work.

I express my thanks to all the staff members of Periyar University for their official assistance throughout my research period.

I am immensely thankful to my family members who brought into reality this very moment which enabled me to achieve my dreams. It would not have been possible to be what I am today, if not for the constant support of my family.

My deepest gratitude goes to the Almighty God who has blessed me abundantly to complete my research work with grant success.

K. Kalarasari (KKALAMARASI)