Acknowledgements

I consider myself to be very lucky to be associated with my mentor for my doctoral research, whose ever encouraging and highly positive approach has influenced and benefited me a lot. Therefore, I express my deep sense of gratitude to Dr. Bhagyalakshmi Neelwarne, who laid a very strong foundation for my research career.

I wish to express my heartfelt gratitude to Dr. V. Prakash, Director, CFTRI, Mysore, for granting me the opportunity to utilize the excellent facilities available at CFTRI and submit the results of my work in the form of a thesis.

I am ever grateful to Dr. G. A. Ravishankar, Head, Plant Cell Biotechnology Department, CFTRI, for his constant encouragement and support during the pursuit of my research work. I enjoyed the company of Dr. M. S. Narayan a lot by way of scientific discussions (especially instrumentation) during tea times, who was more than willing to lend his helping hand during the needful hours. Therefore I am ever grateful to him.

My special thanks to the senior staff of PCBT Dr. M. Mahadevaswamy, Dr. Arun Chandrasekar, Dr. T. Rajasekharan, Dr. R. Sarada, Dr. P. Giridhar, Srinivas Yella, Karuna, Shivanna and Palaksha who have always been so helpful and I enjoyed the friendly environment at PCBT which is because of all these senior colleagues.

I thank my seniors Dr. R. Thimmaraju, Dr. Vinod kumar, Dr. K.N.C. Murthy and Dr. B.C.N. Prasad who as senior colleagues helped me when I joined CFTRI. I have greatly benefited from their experience and enormous skills. It was pleasure working in the environment constituting of research students like Vidhyavathi, Sreedhar, Lokesh, Roohi, Gururaj, Dayananda, Ashwani Sharma, Sandesh, Sathivelu, Kathiresan, Desai and many others. I would thank them all for creating friendly surroundings during my stay in this lab. I thank all other research fellows in the Department of Plant Cell Biotechnology for their affection and encouragement.

I acknowledge the timely help and cooperation of staff of supporting departments: Stores and Purchase section, CIFS, FOSTIS, HRD, Photography, Health centre, Computer centre and administration.

I greatly acknowledge Dr. Sooriyanatha Sundram, Tamil Nadu Agricultural University, Coimbatore for providing the needed banana clones for my work. Material support in the form of Statistical software from Dr. P. Meenakshi Sundram, Vellore Institute of Technology is gratefully acknowledged.
I sincerely acknowledge the Council of Scientific and Industrial Research (CSIR), New Delhi for a research fellowship, which enabled me to undertake the research project. The financial support by Department of Science and Technology, India and CSIR to attend the ISHS conference held at Seoul, Korea is also gratefully acknowledged.

I reverentially express my gratitude towards my parents, brother and all other family members for their unwavering support and understanding. Without their moral support and continuous encouragement, it would not have been possible to accomplish the task.

L. Venkatachalam