ACKNOWLEDGEMENTS

It is a matter of pleasure to recollect and glance back the fond memories of all the teachers, friends, near and dear ones who have been quintessential in bringing this journey of research to a fruitful end.

I would like to express my heartfelt appreciation and gratitude to my supervisor Dr. D. C. Lakshmana Reddy, Senior Scientist, Division of Biotechnology, ICAR-IIHR, for priceless constant supervision, constructive criticism, time and effort provided throughout the direction of this research goal.

I am extremely grateful to Dr. C. Aswath, Principal Scientist, Division of ornamental crops, ICAR-IIHR. He provided a continuous guidance, vivid encouragement, empathy, endless inspiration and affectionate dealing during the period of this research work.

My sincere gratitude to my co-supervisor Dr. Kumudini Belur Satyan, Assistant Professor, Department of Biotechnology, Centre for Post-Graduate Studies, Jain University, Bangalore, for her useful advises consistent help and regular encouragements during my study.

I extend my heartfelt gratitude to Dr. T. H. Singh, Dr. E. Sreenivasa Rao, Principle Scientist, Division of Vegetable Crops, ICAR-IIHR, for valuable suggestions, encouragement and providing priceless inputs in breeding techniques throughout this tenure.

It gives me immense pleasure to express my respectful gratitude to Dr. Leela Sahijram, Division of Biotechnology, ICAR-IIHR, for encouragement and valuable inputs in preparation of this thesis.

I also express my sincere thanks to Dr. Duleep Kumar Samuel, Division of Pathology, ICAR-IIHR, for valuable inputs in analyzing sequence data.
I record my sincere thanks to all the staff of Division of Biotechnology, ICAR-IIHR, especially to Dr. P. Nandeesha, Dr. M. Manmohan, Dr. R. Asokan, Dr. J. B. Mythili, Dr. Pious Thomas, Dr. H. S. Vageeshababu, Dr. T. R. Usha Rani, Dr. K.V. Ravishankar, Mrs. N. S. Nirmala, Mr. S.A. Sreedhar, Mr. M.V Giri, and Mrs. Geetha, for helping me on various occasions during the course of my Ph.D.

I would like to thank Dr. M. R. Dinesh, the Director, ICAR-IIHR for providing all the necessary facilities, support, and encouragement throughout the research work.

I also record my indebtedness to my affectionate friends and colleagues who always stood with me in all happiest and miserable moments. I find no words to express heartfelt gratitude to my friends and colleagues Mr. Hema Chandra, Dr. Sharath, Dr. Sunil, Dr. Naresh, Dr. Sudarshini, Dr. Chaitanya, Dr. Bhoopal, Mr. Padmakar, Mr. Prasad, Dr. Kavitha, Mr. Saravan, Mr. Suresh, Mrs. Lavanya, Mrs. Tejaswi, Mrs. Arpita, Dr. Ellango, Dr. Arun, Mr. Kamal, Mr. Pandyaraj, Mr. Nagesh, Mr. Naveen, Mr. Arya, Mrs. Vidya, Mr. Sadiq, Mr. Bharath, and Dr. Tanuja.

I record my respectful gratitude to my parents, family, relatives, native friends, and well-wishers for support, encouragement, and blessings.