ACKNOWLEDGEMENTS

My profound gratitude and foremost thanks, with limitless humility to God, the supreme and the merciful, for providing me strength and courage to go through all odds successfully at this juncture. I thank to Almighty for giving me everything.

I emphatically express my deep sense of gratitude towards my esteemed teacher and Chairman of my Advisory Committee, Dr. K.S. Chandel (Professor) for his sensible and freehearted guidance, discreet approach, illative and appraise critique and perpetual encouragement during the entire course of investigation.

I express my sincere gratitude to Dr. Y.S. Chauhan (Prof. & Head Deptt. of Vegetable Science and Floriculture) and other members of my advisory committee; Dr. H.K. Chaudhary (Professor and Head, Deptt. of Crop Improvement), Dr. D.K. Banyal (Principle Scientist, Deptt. of Plant Pathology) and Dr. Akhilesh Sharma (Professor, Deptt. of Vegetable Science) for their help and cooperation during entire degree programme. I record my sincere thanks to Dr. Vidyasagar, Dr. N.K. Pathania, Dr. Sonia Sood, Dr. Viveka Katoch, Dr. Sanjay Chadha, Dr. Praveen Sharma, Dr. Pradeep Kumar and Dr. Deshraj for providing me help as and when required. The co-operation and assistance extended by the faculty, office, laboratory and field staff department of Vegetable Science is duly acknowledged.

Every effort is motivated by ambition and all ambitions have an inspiration behind. I owe this place to my parents Mr. Ramesh Chauhan and Mrs. Leela Chauhan who encouraged me to undergo higher studies. The perpetual support and tenacity of my dada and dadi ji has always been a perennial source of inspiration for the attainment of my success. Nevertheless, my successful accomplishment of the task, sat hand also owes much to my husband Dr. Shakun Rana for his cooperation, personal inspiration, unfailing encouragement and moral support. My words cannot substitute my feelings towards my in laws Mr. S.S. Rana and Mrs. Lata Rana and my younger brothers Amit and Shanu and my sister in law Shivani Rana for their love and support.

Friendship is a golden chain made stronger with each minute. Each link is forged of memories that make you still dearer. The thoughtful things you say and do become the links of gold that I will treasure through the years and in my heart will hold sweet memories of M.S. Bilashini, Nisha Thakur, Rachna, Anupam, Anima, Rajni, Gunjan and Minakshi for being with me and making my stay in this campus memorable.

Thanks are due to Mr. Ajay Walia for giving final shape to the manuscript.

This acknowledgement will not be complete until I pay my sincere thanks to Department of Science and Technology, GOI for providing me financial assistance through INSPIRE Fellowship during the Ph.D. programme.

Needless to say Errors and Omissions are mine.

Place: Palampur

Dated: 14th August, 2015

(Aanchal Chauhan)