ACKNOWLEDGEMENTS

The success of this study depends mainly on the encouragement and guidelines of many personalities. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this study.

It is a genuine pleasure to express my deep sense of thanks and gratitude to my mentor, philosopher and guide Dr. Keshav Kant Sahu, Professor, School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur 492 010 Chhattisgarh, India. I consider it an honor to work with him. His dedication and keen interest, above all his overwhelming attitude to help his students had been solely and mainly responsible for completing my work. His prompt inspirations, timely suggestions with kindness, enthusiasm and dynamism have enabled me to complete my thesis. His meticulous scrutiny, scholarly advice and scientific approach have helped me to a very great extent to accomplish this task. Without his guidance and constant feedback, this Ph. D. would not have been achievable. I’m indebted to him for his faith in me at every stage of my research which was the sustaining factor in carrying out the work successfully.

I owe a deep sense of gratitude to Dr. S.K. Jadhav, Professor and Head, School of Studies in Biotechnology, Pt. Ravishankar Shukla University, Raipur 492 010 Chhattisgarh, India for his keen interest on every stage of my research. I thank profusely Professor K.L. Tiwari, Dr. Afaque Quraishi, Dr. K.K. Shukla, Dr. N.K. Chandrawanshi and Dr. Shubhra Tiwari for their kind help and co-operation throughout my study period.

I cannot find words to express my gratitude to my best buddies Mrs. Jipsi Chandra and Mr. Ravishankar Chauhan. They have always helped me and believed that I could do it. I would like to thank both of you for the moral support, encouragements and bonding that I’ll forever treasure. We travelled a long journey together and it was fun having all those craziest memorable moments spent with you. During the course of this work, the constant association with the members of my lab Ms. Bhumika Yadu and Ms. Roseline Xalxo has been most pleasurable. I greatly appreciate the support and love received by them and helping me in numerous ways during various stages of my work. Their contributions are sincerely appreciated and gratefully acknowledged.
The completion of this undertaking could not have been possible without the participation and assistance of so many people whose names may not all be enumerated. However, I would like to express deep appreciation and indebtedness particularly to the following Research Scholars of my department Ms. Shweta N., Mrs. Alka Kaushik, Mr. Tikendra Verma, Mrs. Shweta Dave, Ms. Esmil Beliya, Dr. Veena Thakur, Ms. Gyan Mani Ekka, Ms. Mona Tandon, Mrs. Reena, Mrs. Samiksha Sharma, Mr. Jaishankar Paul, Ms. Inder Pal Kaur, Mrs. Tripti Agarwal, Mr. Vikram Singh and Mrs. Ankita Choudhary for their support, kind and understanding spirit during my whole work. To all relatives, friends and others who in one way or another shared their support, either morally, financially and physically, thank you. Above all, to the Great Almighty, the author of knowledge and wisdom, for his countless love.

It is my privilege to thank my Parents Mr. Ashok Chandrakar and Mrs. Shakun Chandrakar, who have given me the opportunity of an education from the best institutions, constant encouragement and support throughout my life. I would like to express my appreciation to siblings Mrs. Bhavana Chandrakar and Mr. Ankit Chandrakar for supporting me and allowing me to follow my ambitions throughout my childhood. Without your endless support, enduring love, constant guidance, motivation and encouragement, I could not have made it this far. They always stood by me and dealt with all of my absence from many family occasions with a smile.

I take this as an opportunity to thank Mr. Ramesh Verma, Mr. Santosh Manikpuri, Mr. Raghuram Markam and Mrs. Manju Bhagat for their encouragement and support, during this journey.

I am extremely thankful to Dr. Rakesh Meena, Scientist, Aditya Biotech Lab and Research Pvt. Ltd., Raipur for providing us necessary technical suggestions regarding gene expression analysis and Dr. Amit Dubey, Scientist, Central Laboratory Facility, Chhattisgarh Council of Science and Technology, Raipur for providing us Atomic Absorption Spectroscopy for the elemental analysis during my research pursuit. I also express my deep sense of gratitude to Ms. Suruchi Parkhey, Mr. Balram Sahu and Mr. Alok Sahu for their valuable suggestions regarding non-denaturing electrophoresis and calculations. I would like to thank Dr. Nishtha Vaidya and Dr. Rashmi Dwivedi, post-doctorate fellows, National Centre for
Natural Resources, for their valuable technical assistance in carrying out polymerase chain reaction. I owe my special thanks to Professor S.C. Naithani, Mrs. Ranjana Naithani, Professor A.K. Pati and Professor Aditi Poddar for carefully reading and commenting on scientific papers.

I take this opportunity to express my greatest regards to my husband Mr. Girish Kaushik for his co-operation, understanding, constant encouragement and for always being so supportive for me.

I am indebted to Department of Science and Technology, New Delhi for the financial support in the form of INSPIRE fellowship (No. DST/INSPIRE Fellowship/2013/791, dated 23.01.2013) for this educational journey. I am grateful to Department of Science and Technology, New Delhi, for financial support through DST-FIST scheme (Sanction No. 2384/IFD/2014-15, dated 31.07.2014) sanctioned to the School of Studies in Biotechnology. I would like to acknowledge and appreciate to all those farmers of Kabirdham district, who have provided us seeds of Glycine max L. to carry out the present work. I wish to apologize to all those who have been with me either directly or indirectly over the course of the years and whose names I have failed to mention.

Vibhuti Chandrakar