ACKNOWLEDGEMENTS

After a journey of my research work, time has come to look back and remember all those without whom this journey would have been quite uneasy. It is true that nothing comes worthwhile in life without efforts. These people, in their own way, have helped me to face difficult situations.

I consider myself honored to have worked under my guide Dr. M. K. Mandavia, Professor, Department of Biotechnology. Her admirable foresight, helpful nature, and sense of discipline, profound knowledge and devotion to her work was always a source of inspiration which helped me to complete this study. Words are inadequate to express my gratitude.

I am particularly beholden to my minor guide Dr. U. K. Kandoliya, Assistant Professor, Department of Biotechnology, College of Agriculture, JAU, Junagadh for his kind counsel during my study, for his invaluable suggestion and constant encouragement.

I wish to express my deep sense of gratitude to Dr. B. A. Golakiya, Professor and Head, Department of Biotechnology, for teaching me minute things whether it was related to my topic or not. His belief in me helped me to strengthen my mind during all ups and downs.

I wish to express my sincere gratitude and thanks to members of advisory committee: Dr. S. V. Patel and Dr. S. M. Upadhyay.

I express my sincere and heartfelt thanks to Dr. R. S. Tomar, Dr. H. P. Gajera, Mr. M. V. Parakhia, Dr. G. V. Maraviya, Dr. S. P. Kachhadiya, Dr. B. P. Talavia, Dr. L. F. Akabari, Dr. Shradha Bhatt, Mrs. Viraj Rathod and Dr. Ashish Vala of Department of Biotechnology, JAU, Junagadh for their help during my research work.

I also record my sincere thanks to the authorities of the Junagadh Agricultural University Junagadh, Dr. A. R. Pathak, Vice Chancellor, Dr. V. P. Chovatia, Director of Research and P. G. Dean and Dr. B. K. Sagarka, Principal, College of Agriculture, JAU. Junagadh; to providing necessary facilities during this scrutiny.

I express my sincere and heartfelt thanks to Dr. D. N. Vakharia, and Dr. D. R. Mehta, for teaching me to learn in enjoyable manner. I am thankful to Dr. P. V. Patel, Director of student welfare, College of Agriculture, J. A. U. Junagadh.

I also express my unboundful and sincere thanks to Mr. H. Z. Hirpara, Naynaben, Mr. Vijay G. vyas and Mr. H. M. Chavada and Mr. Vijay K. Bajaniya, who spent their lots of time helped in purchasing the laboratory requirements and assistance for completing the research in time bound and for their help during my research work.
I take this opportunity to express my gratefulness to every staff person, Moribhai, Mr. J. M. Sodhabhai, Rahul Bhai, Rajan, Kishorbhai, Hirenbhai and Abdul from Department of Biotechnology for providing encouraging and friendly atmosphere.

It was a wonderful experience to work in a lab with Visha, Shital, Vishalbhai, Rohitbhai, Shruti and Riddhi.

I would like to thank my senior Friends Priteshbhai, Tusharbhai, Disheeta didi, Sacheenbhai and Jayeshbhai. I would like to thank my colleagues Nirav, Jasmin, Abhijeeta, Komal, Avni, Ankita, Rucha, Ashok, Nilam, Nimita, Hiral, Priyanka, Suhail and Bharose sir for joyful course work. I would like to thank my junior friends Harshita, Rushita, Kruti, Sheffali, Nidhi and Darshana.

Roshaniben, Hirenbhai, Kavita, Viralbhai and Tejasbhai deserve a special mention for their immense help and moral support during persuasion of my research work. Thank you for showing me a path when I could see fog around me.

Life is miserable without blessings of parents and close ones. I cannot forget their role throughout my studies. Their love and sacrifice cannot be expressed by words. Thank you mummy-pappa for your constant support, encouragement and prayers. I am also obliged to Hemubhai, Bhabhi, Tanay and Parthbhai for their motivational support.

I take an opportunity to thank Nirav, my life partner, for always being with me. His emotional support, constructive criticism, love and prayers helped me to reach here.

All cannot be mentioned but none is forgotten.

I am always thankful to almighty God.

Grateful and indebted

Place: Junagadh
Date: /01/2018

Halak