ACKNOWLEDGEMENT

I am immensely indebted to Dr P. Giridhar, my research supervisor, for recognising the spark of scientific attitude in me. Through his peaceful attitude, encouragement and timely guidance, I could convert the scientific spark in my mind to this thesis. Freedom to think, plan and execute my work further made my doctoral journey smooth one.

No words can describe my gratitude for Dr Sakina Khatoon, retired Senior Principal Scientist, who nurtured my basic research skills. I owe her for introducing me to chemistry, in general, and oil chemistry, in particular. I will always identify her with chemistry.

The seeds of my research career were sown by Dr B. R. Lokesh, Chief Scientist, during my Masters Dissertation work in his laboratory (Lipid Science and Traditional Foods department). He made me hard and sincere worker. He helped me to develop scientific spark and research mind.

It is my duty to express heartfelt thanks for Former Director, Dr V. Prakash, and current Director Prof. Ramrajsekhara for pruning my research work and extending facilities to carry out the same.

I acknowledge Dr G. A. Ravishankar’s (retired Chief Scientist and former Head, Plant Cell Biotechnology department) role in this journey as instrumental in fine tuning my research work through periodic discussions and most importantly his friendly guidance.

Without the expertise, friendly and passionate guidance of Dr Muralidhara, Dr H. P. Ramesh, Biochemistry and Nutrition department, safety assessment would have not accomplished.

My sincere thanks for my Doctoral Committee members Dr Lalitha R. Gowda and Dr K. S. M. S. Raghava Rao, Dr Muralidhara.

Other collaborators of my work Dr. A. S. Chauhan, Fruit and Vegetable Technology department, Dr M. R. Asha, Sensory Science department, Dr S. V. N. Vijayendra, Food Microbiology department helped me carry out my work with confidence.

Council of Scientific and Industrial Research, New Delhi awarded senior research fellowship to me and the project under which I worked was funded by Department of Biotechnology, Govt of India. My gratitude for them.

Profuse thanks to Dr. Bhagyalakshmi N., Head, Plant Cell Biotechnology for her scientific as well as concerns. For general suggestions and helping hand, I sincerely thank scientists and staff of Plant Cell Biotechnology department, Dr R. Sarada, Dr. Nandini P. Shetty, Dr V. S. Chauhan, Ms V. Karuna, Mr K. Shivanna, Mr A. Narayan.

At different stages of this journey I got guidance and help from many scientists in this Institute namely Mr K. K. Bhat, Dr T. Jeyarani.

Indeed, without central instruments facility and the guidance I received from the staff, this thesis work would have not completed. Special thanks to Mr Shivaswamy, Mr Mukund P. Laxman, Ms A. M. Asha and Mr C. Lokesh.

Without the help and expert guidance of Avinash Kumar, my dream for working on gene expression studies would have not realised. My co-worker P. S. C. Sri Harsha lent his hand generously to complete some part of this thesis. For a brief but productive period, P. Prabhakar
joined me and we could do cell line studies successfully. K. M. Denny Joseph extended help in safety assessment.

My labmates were very supportive as well as entertaining in their own ways. They are V. Lokesh, K. G. Mallikarjuna Gouda, Ramesh Kumar Saini, A. Kumudha, M. D. Kavitha, V. Sridevi, P. S. Simmi, M. K. Akitha, P. Bijesh, P. Divya, Daris P. Simon, S. Vidyashankar, G. V. Swarnalatha, Sinjitha Nambiar, Kirti Rani Saad, Priyanka P. Sonbarse, Nadininti Vishruthi, Kami Reddy Kiran, Sravan Kumar, Manoj Prabhakaran, Matam Pradeep.

My senior labmates were even more interesting scientifically and otherwise. Dr R. Parimalan, Dr R. V. Sridhar, Dr C. Dayananda, Dr Jyothi M. Veigas, Dr L. Venkataraman, Dr R. Vidhya, Dr S. Kathiresan, Dr S. Sakthivelu, Dr A. Ranga Rao, Dr A. Ramakrishna, Dr Anila N., Dr Akshatha Venugopalan, Mr Shibin Mohanan, H. B. Gururaj, Padma Mallya, Dr G. Manjunatha. As a senior, Mr Gururaj helped me in various ways to accomplish my work.

My friends Rekha Basavalingappa, S. S. Umesh, Y. Poorna Chandra Rao and Meesha Sharma made my life at CFTRI enriching and comfortable. S. Khurshida, student of M. Sc. Food Technology, joined me in the autumn of my CFTRI life and made it memorable. Some senior friends M. B. Reena, Anitha Nagaraju, A. M. Mamatha were really wonderful companions of my initial days in CFTRI.

My younger sister Baseimayum Washima, younger brother Baseimayum Arish and cousin Baseimayum Farida shared much of my Ph. D. Journey’s frustrations and mood-swings. I thank them specially my sister for being understanding and patient.

My elder brother Alhaj Mohammad Illiyas Ali’s support and my beloved, courageous, and most importantly, highly intelligent mother Alhaj Rahamjan Begum’s love, care, warmth and confidence in my ability acted as sail of my journey’s ship.

My life, ability, health, spirit and everything that I am and have is gift of the most merciful Almighty Allah. Allah is great.

(Mohammad Imtiyaj Khan)