ACKNOWLEDGEMENTS

First and foremost, I would like to express my sincere gratitude to my research supervisor Prof. Tek Chand Bhalla, Department of Biotechnology, Himachal Pradesh University, Shimla, whose exceptionally versatile guidance, valuable suggestions, critical appreciation and keen interest brought this thesis to completion. I am extremely grateful to him for giving me an opportunity to work under his tutelage.

My thanks are also due to Prof. Per Saris (Head division of Microbiology, Dept of Food and Environmental sciences, vikkii Biocentre, University of Helsinki), for giving me an opportunity to work in his Lab and for guiding me for my Ph.D work during my entire stay in University of Helsinki.

My deepest thanks to all my faculty members Prof. S.S. Kanwar, Prof. Reena Gupta, Dr. Arvind Kumar Bhatt, Dr. Wamil Azmi, Dr. Duni Chand and Er. J.S Sodhi of the Department of Biotechnology, Shimla who have motivated me to work.

I acknowledge Mrs. Leena Mishra, for her ever helping nature whether in administrative work or other works who really made my stay in Shimla comfortable. I cannot forget to acknowledge Bioinformatics Centre and staff (Nikhil, Manoj) for providing computing facility. I also do thanks to all non-teaching staff (Babu Ram sir, Dr. Ram Chander and Nepta), Department of Biotechnology, for all the help they rendered me during my whole study in this department.

I also record my appreciation to the senior researchers and fellow researchers of our group Dr. Dinesh, Dr. Savitri, Dr. Jog Raj, Dr. Shreenath, Dr. Nitya Nand, Dr. Monika, Dr. Amit Seth, Dr. Amit Pratosh, Dr. Praveen Mehta, Dr. Sashi, Anila, Kunzes, Shikha, Monu, Neerja, Nirmal, Vijay, Vijaya, Monika, Asif, Verender and research scholars from other labs Dr. Deepak Pandey, Dr. Chander kant, Dr. Meenu, Dr. Sarita, Dr. Simran, Ashok, Dr. Manisha, Nisha, Shivika, Sukhdev, Nitin, Anu, Anita, Jeevan lata and other M.Sc students for their kind cooperation during my stay.

I cannot forget to thank Sanna Laksonen, Yurui Tang and Roshan Deuja from Prof. Per’s group who went out of the way to help me n make my stay homely in University of Helsinki.
My thanks also to my lovely friends Lata, Sunil, Hukum, Chhotu, Dr. Lalit Mohan and Dr. Brianda Barriol for constant motivation and providing me friendly environment.

The support and encouragement extended by my loving family (Sara, Isha, Uday, Naveen, Deepak, Shreyas, Shaurya) and Prof. Saraswati, Mrs. Anjana, Ankur for love and affection they bestowed on me and specially the constant motivation of my Parents to complete my Ph.D cannot be expressed in words.

Thanks also to Kashyap Uncle and Aunty for making my stay really comfortable in Shimla and all the love & affection.

My thanks to Mr Room Singh Thakur, Dr. Moolu Ram, Dr Prem Lal and villagers of Lug valley (Kullu distt), Dr. Savitri’s family in Gondhla and Tholang village (Lahaul) for giving me all the requisite information relating to traditional beverages and raw materials.

I am thankful to Ms. Neelam for editing and giving a final shape to thesis.

Fellowship provided by UGC (RFSMS) in form of JRF and SRF and Indo-Finnish scholarship by CIMO (Finland) and UGC, is gratefully acknowledged.

Last but not the least Thanks to Almighty for giving me strength to complete this endeavor and helping me to overcome all the odds in my life smilingly.

All may not be mentioned but no one is forgotten.

Thank You Everyone...........

(Navdeep Thakur)