ACKNOWLEDGEMENT

My utmost gratitude to my supervisor, Prof. N.K. Chrungoo, Department of Botany, NEHU, Shillong, for the continuous guidance, tireless efforts and support during the course of my work.

I am grateful to Prof. M.S. Dkhar (Head) and Prof. H.N. Pandey (Former Head) for their encouragement, useful suggestion and allowing me to access to all necessary facilities of the Department of Botany.

I extend my gratefulness to Prof. A.K. Mishra, Prof. S.K. Barik, Dr. Kharluki, Dr. H. Kayang, Prof. N. Venugopal, Prof. A.N. Rai and Prof. R. Lalthantluanga for providing all necessary help and the access to the laboratory facilities for executing my research work.

I express my sincere gratefulness to Dr. D.K. Verma, Plant Breeding Section, ICAR, North East Region, Umroi, Shillong, for providing maize germplasm to carry out my research work successfully.

I am forever indebted to my friends, Tia Molier, Cressida Jamir, Shiny Ch. Sangma, Nabanita Devadasan, Dr. Anusuya, Manoj, Mathung, David Biate, Manik, Lalngura, John Zohtanzama, Dr. Sama, Dr. Apuii, Dr. Mafaka, Dr. Ruatsanga, Dr. Thlatea, Khup, Kumar, Meena, Neeta, Felly, Gangarani, Getashree, Jelu and Makimi for their useful suggestions, continuous help and cooperation.

My deepest gratitude specially to my parents, my dear brother and sisters for their constant inspiration, support and motivation during my academic pursuits. My heartfelt gratitude are for my cousin sister, brothers and my auntie for the consistent encouragement and support rendered all along.

I would like to thank the non-teaching staff of the department of Botany for help rendered during the course of my study. I also thank all others who have directly or indirectly extended their help during the course of my research and compilation of this thesis.

I thank the University Grant Commission (UGC) for the Rajiv Gandhi National Fellowship during my tenure as JRF.

"Above all, thank you Lord".