ACKNOWLEDGEMENT

I express my profound sense of indebtedness to my internal supervisor Dr. Dhirendra Singh, Reader and Head, Department of Agricultural Botany, Janta Vedic College Baraut, Baghpat for his talented, untiring and able guidance throughout the course of present investigation. His helpful criticism in solving several intricate problems and endless patience, kind encouragement, unending goal throughout the period of this research work and during the preparation of this manuscript are gratefully acknowledged.

I, with immense pleasure, feel elevated to express my deep sincere regards and profound sense of gratitude to my external supervisor Dr. Devi Singh, Professor (Genetics and Plant Breeding), Sardar Vallabh Bhai Patel University of Agriculture & Technology, Meerut for his continuous inspiration and invaluable guidance, persistent encouragement and supervision, critical suggestions and constructive criticism throughout the course of this investigation and preparation of the dissertation.

My sincere and heartiest thanks to Dr. Yeshveer Singh Tomar, Principal, Janta Vedic College Baraut, Baghpat, for providing me the necessary facilities during the tenure of present study.

I am also thankful to Dr. Ravindra Singh, Dr. Ashok Chaudhary, Dr. Satyaveer Singh and Dr. V.K. Dwivedi, Reader, Department of Agricultural Botany, Janta Vedic College Baraut, Baghpat for their constructive and valuable suggestions.

I am thankful to Sh. Karan Singh, Farm-in-charge, Janta Vedic College Baraut, Baghpat, and Dr. I.B. Singh, Director Research, Sardar Vallabh Bhai
Patel University of Agriculture & Technology, Meerut for the kind help rendered for conducting the experiments.

I, with immense pleasure, feel elevated to express my deep sincere regards and profound sense of gratitude to Dr. S.K. Sharma, Ex. Project Director, Project Directorate for Cropping Systems Research, Modipuram, Meerut for his kind cooperation into providing permission for Ph.D. and inspiration and invaluable guidance. I am also thankful to Dr. M.S. Gill, Project Director, Project Directorate for Cropping Systems Research, Modipuram, Meerut for kind cooperation and constructive suggestions during the preparation of the Thesis.

I am thankful to Dr. S.R. Kushwaha, Technical Officer, Division of Plant Physiology, I.A.R.I., New Delhi, for his valuable advice and help during the analysis of experimental data.

It is time to express hearty thanks to my all friends, Sh. J.P. Singh, Sh. Vipin Kumar, Sh. K.P. Singh, Dr. Surender Kumar and Sh. Suresh Kumar Sharma for giving me valuable time for completing this manuscript.

Indeed there are no words to my command to express my profound reverence and deep seated obligation to my parents and my wife for there affection, encouragement and blessing without which this dream could have not been materialized.

I am also thankful to Mr. Satyavir Singh and Mr. Daya from M/s Shiva Computer, New Delhi, for magnificent type work of my thesis.

Place: Baraut (Baghpat)
Date: 26/1/08

(Om Kumar Tomar)