Acknowledgements

I wish to express my sincere appreciation to my career Guru and advisor Dr. Marcus M. Alley for his guidance, supervision, assistance, pragmatism, patience and above all encouragement throughout the graduate program of study. I strongly feel that my potential as a professional Agronomist has increased multifold because of our association. I would like to thank my committee members Drs. Brann, De Datta, Dillaha, Martens, and Zelazny for their continuous support, scientific input, positive attitude and advice.

I am indebted to the faculty, staff, and graduate students of the Department of Crop and Soil Environmental Sciences for their help and support at all the times. My special appreciation is for Mr. Jim Hammons and Mr. Paul Davis for their on-going support in conducting field experiments with utmost precision and willingness, and for Ms. Rhonda Shrader for final preparation of all the annual reports over the years. I would like to thank all the people who helped in analyzing the soil and tissue samples in the lab and field. Special thanks to Tom Pridgen, Trisha Tillman, Matt Alley, Scott Jessey, Shauna Russell, and Carolyn Langdon. I would like to acknowledge the cooperation of all the farmers who demonstrated interest in this work and allowed me to perform these experiments on their fields.
I am grateful to my parents Usha R. and Satya P. Khosla for their support and blessings, and my wife Reena for her love and companionship. I have successfully completed this work with their constant encouragement to do good scientific work, gain knowledge, and be successful in life.

This research was supported by the Fluid Fertilizer Foundation. Their continuous support is greatly appreciated.