

***I dedicate this work to my parents***

## ACKNOWLEDGMENTS

My sincerest appreciation goes to my major professor, Dr. Tony K. Wolf, for his patience, advice, guidance, and attention to detail throughout my research. He, more than any other, has contributed to my professional growth. Heartfelt thanks goes to Dr. Greg Welbaum for his constant help, concern, and support throughout my studies. I am also deeply grateful to Dr. Ross Byers, Dr. Eric Beers, and Dr. Stephen Scheckler for agreeing to serve on my committee and for their invaluable help.

I am extremely grateful to Dr. Mike Wisniewzki and Glen Davis, USDA, Kearnsyville, West VA for all their help with the bud anatomy work. Special thanks goes to Dr. Dale Wolf for help with the analysis of total nonstructural carbohydrates, Dr. Dave Martens and Hubert Walker for help with the mineral nutrient analysis work, and Kay Warren for all her help in the field and lab which made this research a success. I am grateful to Joyce Shelton, Donna Long, and Connie Wallace for all their help.

Finally, I thank my husband Sham Nair for his infinite support, love, and cheerful encouragement; my father Col. G. N. Vasudevan for his love, direction, and tireless sacrifice; my brother Gopal Vasudevan, my sister Meenakshy Vasudevan for their constant support and love; and my friends Meeta Mehrotra, Matt Miller, Shatil Haque, Tatiana Boluarte, and Bonnie Woffenden for their patience and understanding during those long years that gave me the will to finish my Ph.D.