

Dedicated to my mother Paiang,

With love and appreciation

ACKNOWLEDGEMENTS

I would like to thank *Assistant Professor Dr. Sawaeng Ruaysoongnern* and *Associate Professor Dr. Patma Vityakon Rambo*, Department of Land resources and Environment and *Dr. Banyong Toomsan*, Department of Agronomy, Faculty of Agriculture, Khon Kaen University, the advisory committee, for valuable guidance, constructive criticism and unstinted help in completing the thesis.

The encouragements and inspiration rendered by *Dr. Manjunatha S. Rao*, Principal Plant Breeder, Mitr Phol Sugar Research Center for helpful suggestion and correction. This work could not have been completed without the opportunity provided by Mitr Phol Sugar Co., Ltd.

I am grateful for the encouragement and support of numerous colleagues at the Mitr Phol Sugarcane Research Center: Apichart Sreewarome, Sopaphet Wansala, Vichean Potha, Por Sangphet and all workers for their help to maintain the trial and collect data. My sincere thanks to all staff at department of Land Resources and Environment for laboratory help. I would also like to thank Terasak Rattanajaratrod and my parents for their kindness and support.

Sincere thanks are placed for all friends whose help made the task lighter.

Rochana Tangkoonboribun