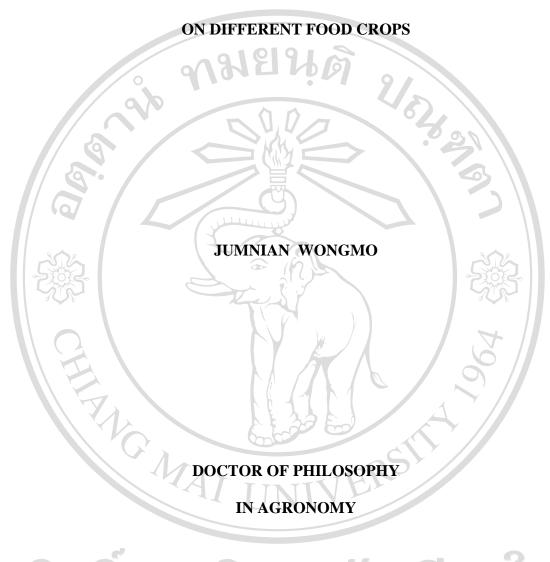
### INFLUENCES OF ARBUSCULAR MYCORRHIZAL FUNGI



# ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright<sup>©</sup> by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL

**CHIANG MAI UNIVERSITY** 

**MAY 2008** 

### INFLUENCES OF ARBUSCULAR MYCORRHIZAL FUNGI

ON DIFFERENT FOOD CROPS

JUMNIAN WONGMO

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN AGRONOMY

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright<sup>©</sup> by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL

**CHIANG MAI UNIVERSITY** 

**MAY 2008** 

### INFLUENCES OF ARBUSCULAR MYCORRHIZAL FUNGI ON DIFFERENT FOOD CROPS

### **JUMNIAN WONGMO**

# THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN AGRONOMY

# Ben www CHAIRPERSON Prof. Dr. Benjavan Rerkasem Sans and James MEMBER Assoc, Prof. Dr. Sansanee Jamjod Sansanee Jamjod MEMBER Prof. Dr. Saisamorn Lumyong MEMBER Assoc, Prof. Dr. Dumnern Karladee Pathifus Schepolatus MEMBER Asst. Prof. Dr. Pathipan Sutigoolabud

30 May 2008

© Copyright by Chiang Mai University

### **ACKNOWLEDGEMENTS**

I am deeply grateful to my advisor, Professor Dr. Benjavan Rerkasem, for her supervision and encouragement during my study.

I am grateful to Professor Dr. Bernard Dell, for his valuable suggestion and comments all my work and help in revising my thesis.

Special thanks to Professor Dr. Saisamorn Lumyong and Associate Professor Dr. Sansanee Jamjod for their advisory opinions on my work and all their support. I also thank Associate Professor Dr. Dumnern Karladee and Assistant Professor Dr. Pathipan Sutigoolabud for valuable advice and kind suggestions to improve my thesis.

Financial support from Thailand Research Fund (DBG4980004 and Prof. Benjavan Rerkasem's Research Group), the Collaborative Crop Research Program of the McKnight Foundation and the United Nations University is gratefully acknowledged.

During the long period of my study, I have received much support from colleagues and students at the CMUPNlab, Agronomy Department, Chiang Mai University; I especially appreciate Dr. Sittichai Lordkaew and Mrs. Kanjanaporn Lordkaew for their help with laboratory work. Big thanks to the farmers at Huai Tee Cha village, Mae Hong Son province for access to their fields and for providing seed of their swidden crops. Dr. Narit Yimyam of the Highland Coffee Research and Development Centre, Chiang Mai University kindly facilitated work in the upland fields. Dr. Chanakan Prom-u-thai is thanked for her enthusiastic help.

I am indebted to my parents, my brothers, my sisters and thank them for their love and unwavering support. Finally, I would like to thank my husband (Wichan Meesumlee) for his patience and understanding throughout this time.



# ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright<sup>©</sup> by Chiang Mai University All rights reserved