

**UPLAND RICE/PIGEON PEA INTERCROPPING
SYSTEMS FOR UPLANDS IN NORTHERN
LAO PDR**

BOONTHANH KEOBOUALAPHA

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE
(AGRICULTURE)
IN AGRICULTURAL SYSTEMS**

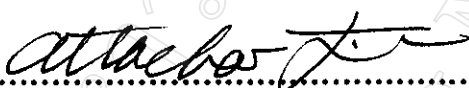
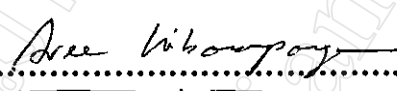

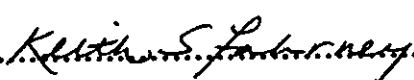
**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
OCTOBER 1999**

**UPLAND RICE/PIGEON PEA INTERCROPPING
SYSTEMS FOR UPLANDS IN NORTHERN
LAO PDR**

BOONTHANH KEOBOUALAPHA

**THIS THESIS HAVE BEEN APPROVED
TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF SCIENCE (AGRICULTURE)
IN AGRICULTURAL SYSTEMS**

EXAMINING COMMITTEE:

	Chairman
Asst. Prof. Dr. Attachai Jintrawet	
	Member
Assoc. Prof. Dr. Aree Wiboonpongse	
	Member
Lecturer Phrek Gypmantasiri	
	Member
Lecturer Dr. Keith S. Fahrney	

October 1999

Copyright by the Graduate School, Chiang Mai University

ACKNOWLEDGEMENTS

It is my pleasure to appreciate the help of many people and institution in the completion of this thesis research, which I cannot acknowledge them all, though I wish I could express the gratitude to everyone.

First of all, my sincere thanks go to Dr. Attachai Jintrawet, my thesis advisor as well as Chairman of the Thesis Research Committee, to him, I would like to express my gratitude to his invaluable help either in designing and implementing field experiment as well as for most valuable advice. My thanks are extended to Dr. Aree Wiboonponse, Thesis Committee member, for her constructive comments and suggestions on household survey questionnaires. Gratitude is due to Ajaan Phrek Gypmantasiri, Thesis Committee member, who advised me kind suggestion and encouragement in the process of the research. Thanks are also offered to Dr. Keith Farhney, Thesis Committee member, for the kindness, encouragement and helpful criticisms on field activities and correcting my thesis manuscript.

I am very grateful for the financial support provided by the Department of Technical and Economic Cooperation (DTEC) to complete graduate study. It is equally praise worthy to acknowledge the Lao-IRRI Project and the Lao government for granting me the study leave, to pursue M.S. in Agricultural Systems at Chiang Mai University. Special thanks is also extended to the Provincial Agriculture Service of Luang Prabang,

District Agriculture Service of Xieng Ngeun, and farmers for their cooperation during the household survey.

I am please to express my profound thanks to the all teachers for sharing their knowledge and experience. It is worthy to mention Khun Panomsak Promburom, Khun Prakan Sringam for helping in computer works, Khun Kanjana Piboon for helping in implementation of the field experiment, Khun Sarinthip Phromrit for her excellent translation of English abstract into Thai. I wish to thank all administrative staff of Agricultural System Programs who provided various forms of assistance.

Finally, I am highly grateful to my mother (Mae Boua), my parents-in-law (Mae Southachanh Sisouphanh and Phow Phieu Manochit), my wife (Soudalath Keoboualapha), my daughter and sons (Phanida, Chanthasone, and Phetsakone), brothers and sisters, whose love, patience, sacrifice and understanding have been the source of inspiration to pursue my study at Chiang Mai University, Thailand.

Boonthanh Keoboualapha

October 1999