

CONTENT

	Page
CONTENT	(6)
LIST OF TABLES	(7)
LIST OF FIGURE	(9)
CHAPTER 1 INTRODUCTION	1
Introduction	1
Literature review	2
Objectives	6
CHAPTER 2 MATERIALS AND METHODS	7
CHAPTER 3 RESULTS	13
Soybean seed field characteristics under different field planting conditions	13
Field emergence of soybean seeds planted under different field conditions	18
Response of soybean seed quality to the field planting conditions	26
Water-limited germination test	28
Soybean seed germination under flooding condition	33
Soybean seed germination test for evaluating field emergence under drought condition and in rainy season	34
Effect of soil series on water-limited germination test in soybean seeds	36
CHAPTER 4 DISCUSSIONS	39
CHAPTER 5 CONCLUSIONS	42
REFERENCES	43
APPENDIX	48
VITAE	52

LIST OF TABLES

Table	Page
1 Properties of soil from three different series	12
2 Soil moisture content and field emergence index of CM 60 soybean seeds planted under various watering patterns	14
3 Soil moisture content and field emergence index of SJ 5 soybean seeds planted under various watering patterns	16
4 Standard germination, field emergence, speed of emergence index, seedling height, seedling shoot dry weight and field emergence index of CM 60 soybean seeds of different qualities planted under daily watering field condition	19
5 Standard germination, field emergence, speed of emergence index, seedling height, seedling shoot dry weight and field emergence index of SJ 5 soybean seeds of different qualities planted under daily watering field condition	20
6 Standard germination, field emergence, speed of emergence index, seedling height, seedling shoot dry weight and field emergence index of CM 60 soybean seeds of different qualities planted under water-limited condition	22
7 Standard germination, field emergence, speed of emergence index, seedling height, seedling shoot dry weight and field emergence index of SJ 5 soybean seeds of different qualities planted under water-limited condition	23
8 Standard germination, field emergence, speed of emergence index, seedling height, seedling shoot dry weight, and field emergence index of CM 60 and SJ 5 soybean seeds of different qualities planted in rainy season	25
9 Field emergence of CM 60 and SJ 5 soybean seeds of different qualities planted under various field conditions	27
10 Standard germination of CM 60 and SJ 5 soybean seeds used in the water-limited germination test	28
11 Germination of CM 60 and SJ 5 soybean seeds of three different qualities planted in the soil in basket with different amount of water and watering frequencies	29

LIST OF TABLES (Continued)

Table	Page
12 Speed of emergence index of CM 60 and SJ 5 soybean seeds of three different qualities planted in the soil in basket with different amount of water and watering frequencies	30
13 Seedling height of CM 60 and SJ 5 soybean seeds of three different qualities planted in the soil in basket with different amount of water and watering frequencies	31
14 Seedling shoot dry weight of CM 60 and SJ 5 soybean seeds of three different qualities planted in the soil in basket with different amount of water and watering frequencies	32
15 Germination of CM 60 and SJ 5 soybean seeds under different flooding periods	33
16 Germination of CM 60 and SJ 5 soybean seeds of three qualities tested in three water-limited methods, drought field condition, and in rainy season	35
17 Standard germination of CM 60 and SJ 5 soybean seeds of different qualities used in the tests	36
18 Germination of CM 60 and SJ 5 soybean seeds of three different qualities in water-limited germination tested in three soil series	37

LIST OF FIGURE

Figure		Page
1	Soil moisture contents at 0-4 days after planting of sandy loam (Ranong/Phato association), silt loam (Ko Yai) and clay (Tha Khwang) soil watered at 50%PAW every 2 days	38