



*Graduate School*

*Prince of Songkla University*

May 15, 2018

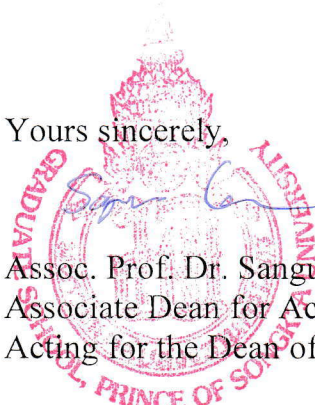
To whom it may concern,

This is to certify that **Miss Wulan Kumala Sari, Student ID 5710630003** enrolled as a doctoral student in Tropical Agricultural Resource Management Program, Faculty of Natural Resources, Prince of Songkla University (PSU), Thailand has currently been a graduate student of the Graduate School since August 13, 2014 and also a recipient of the scholarship awards for Master and Ph.D. studies: Thailand's Education Hub for Southern Region of ASEAN Countries (TEH-AC).

She has already passed her thesis examination on December 13, 2017 and submitted the completed thesis book on May 10, 2018. In order to fulfil this scholarship's requirements she has been awaiting for 2 international publications.

If you require any further information, please do not hesitate to contact us.

Yours sincerely,

  
Assoc. Prof. Dr. Sanguan Lerkiatbundit  
Associate Dean for Academic Affairs  
Acting for the Dean of Graduate School

Contract No. TEH\_019/2014.....

Six-monthly Report of Study Results and Research Progress Report

Graduate Studies Grant Contract under the Thailand's Education Hub for Southern Region of ASEAN Countries (TEH-AC), Prince of Songkla University

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Report No. 8 Period: From December 2017 to May 2018.....

Part 1: Report by the "Grantee"

Name Wulan Kumala Sari Student ID 5710630003.....

1. Study results in Semester 2 Academic year 2017.....(Please attach the result report)

Course code	Course title	Credit (s)	Grade
550-799	Thesis	8	P

Explanation (if any)

Plan type : Plan 1.1. by research.....  
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Qualifying Exam

- Not taken
- Not passed
- Passed** QE on (date) October, 26<sup>th</sup> 2016

Proposal Defense

- Not taken
- Not passed
- Passed** on (date) May, 4<sup>th</sup> 2017

Final Defense

- Not taken
- Not passed
- Passed** on (date) Dec, 13<sup>th</sup> 2017

2. Thesis progress according to the plan.

**Thesis Topic :** Parental Selection in Upland Rice for F<sub>1</sub> Hybrid Production

**Objective :** 1. to select the best upland rice parents and study the gene action for agronomic traits in upland rice.

2. to evaluate correlation coefficients, direct effects and indirect effects of agronomic traits on the upland rice yield.

3. to compare hybrid vigor based on parental distance by Simple Sequence Repeat (SSR) markers and agronomic traits in upland rice as well as to evaluate economic return.

**Expected output :** The best upland rice parents for development of new high yielding rice varieties.

The first phase of the research being conducted is Diallel. Start planting in September 2014 and was conducted at green house experimental sites, Faculty of Natural Resources, Prince of Songkla University. Diallel cross is one of the methods used to estimate genetic parameters of population. Estimation of genetic parameters is important in the evaluation as a potential inbred strains of hybrid parents. In a half diallel, all parents are crossed to make hybrids in all possible combinations excluding the reciprocals. In this study, the cross combinations conducted to 8 varieties hybrid parents : (1). Khom Satun, (2). Dawk Pa-yawm, (3). Dokkam, (4). Nual-Khom, (5). Dawk Kha, (6). Khom Malidoi, (7). Khun Nan and (8). Goo Menang Lung. The possible cross combinations can be seen below :

Parent	1	2	3	4	5	6	7	8
1	1	X	X	X	X	X	X	X
2		2	X	X	X	X	X	X
3			3	X	X	X	X	X
4				4	X	X	X	X
5					5	X	X	X
6						6	X	X
7							7	X
8								8

In the above table it could be seen that there are 28 cross combinations that will result 28 F<sub>1</sub> hybrids which will be planted in the second research phase is yield trial. Until June 2016 obtained several of hybrid seeds from that cross, as a comparison can be seen in the table below :

Parent	1	2	3	4	5	6	7	8
1	S	<b>203</b>	24	<b>100</b>	<b>169</b>	17	<b>67</b>	22
2		S	<b>173</b>	<b>177</b>	<b>142</b>	<b>111</b>	<b>96</b>	<b>101</b>
3			S	<b>129</b>	<b>104</b>	46	<b>87</b>	<b>51</b>
4				S	<b>210</b>	<b>62</b>	<b>91</b>	13
5					S	<b>124</b>	<b>116</b>	<b>115</b>
6						S	46	24
7							S	12
8								S

Note : S = same with parent

I should get the seeds that same with parent approximately 500 - 1000 g. To be able to do the second research phase (yield trial) must be obtained 50-100 hybrid seeds per cross, therefore this diallel research will continue until obtained the expected number of hybrid seeds (50-100 per cross) that can be planted in yield trial. Although the hybrid seeds of some cross less than 50 seeds, I will continue to plant in the field in July 2016 to do the second research phase (yield trial).

Since February 2016, I have been doing microsatellite techniques or Simple Sequence Repeat (SSR) to identify the genetic differences and genetic distance between parents in the molecular laboratory, Faculty of Natural Resources, Prince of Songkla University. I have to do for approximately 50 pairs of primer and until June 2016 I just did it about 15 pairs of primer, this activity will continue until got all primers that could be a marker of genetic differences between each parent.

The seeds of hybrid rice that got from diallel were planted for the yield trial in the field experiment, Faculty of Natural Resources, Prince of Songkla University. Started planting was conducted in July 2016 and last harvested in December 2016. The leaves are taken will be use for samples for SSR test in the Laboratory and then I will do quantitative data analysis.


In this semester, I was harvested the rice seeds and did some activities to get the datas that related with panicle length, number and weight of grains, etc. In June, I do the SSR analysis to verify whether the hybrid plants that I was planted in yield trial is it true hybrid or not and after that I will do the cluster analysis.

3. Extra activities (if any)

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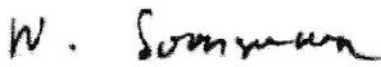
4. Comment and suggestions

..... - Request for 2 international publications .....

(Signature)  ..... Grantee

(..... Wulan Kumala Sari .....)

Date: 17 / June / 2018 .....

(Signature)  ..... Supervisor

(Assoc. Prof. Dr. Watcharin Soonsuwan)

Date: 17 / June / 2018 .....

Student Information System > [Student](#) > Student Profile > Study Result



## STUDENT

- General Info.
- Personal Info.
- Registration Result
- Study Result**
- Thesis/Minor Thesis
- Class Schedule
- Examination Schedule
- Payment Info

**Grade Result : Semester/Year** 1/2560

### 5710630003 : WULAN KUMALA SARI

Semester : 1/2560

Subject Code	Section	Subject Name	Credit	Type	Grade
550-799	01	THESIS	3	C	P

SEMESTER CREDITS : 0

SEMESTER GRADE POINT AVERAGE CREDITS : 0.00

SEMESTER GRADE POINT AVERAGE : 0.00

ACADEMIC STATUS :

Pass

CUMULATIVE CREDITS : 0

CUMULATIVE GRADE POINT AVERAGE CREDITS : 0.00

CUMULATIVE GRADE POINT AVERAGE : 0.00