The Effect of Cultural Practices on Yield , Cost and Benefit of Rice in Mrauk Oo Township

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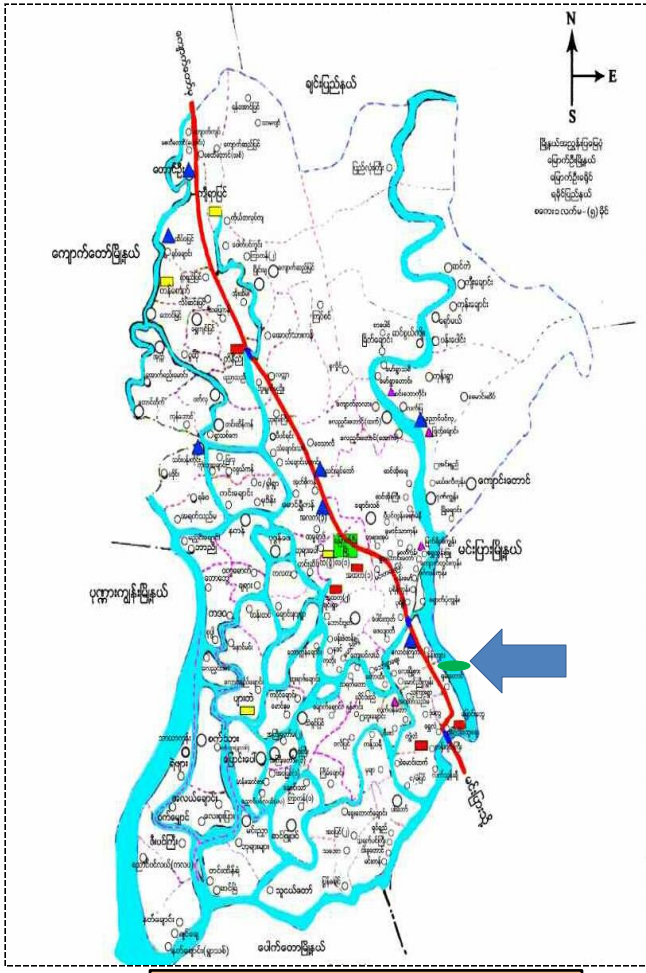
Introduction

Rakhine State

- a coastal region and heavy rainfall
- monsoon rice - major crop
- most areas - rainfed area

Mrauk Oo Township

- the highest rice production in Rakhine State
- Monsoon rice area -131890 ac in 2017-2018
- Cropping intensity - 121.20%
- Sea level - 47.59 ' high



Map of Mrauk Oo Township

Objectives

1. To determine adaptable cultural practices in Mrauk Oo Township
2. To evaluate yield and yield components of rice by using different cultural practices
3. To gain more benefit and lower cost of production per acre for farmers

Activities

Experimental Information

Experiment Plan

Crop	-	Rice
Variety	-	Sin Thway Latt
Experiment Type	-	Simple Trial
Village	-	Pe PinYin
Township	-	Mrauk Oo
District	-	Mrauk Oo
State	-	Rakhine
Farmer's Name	-	U Htun Aung Khine

Experiment - Simple trial with four treatments

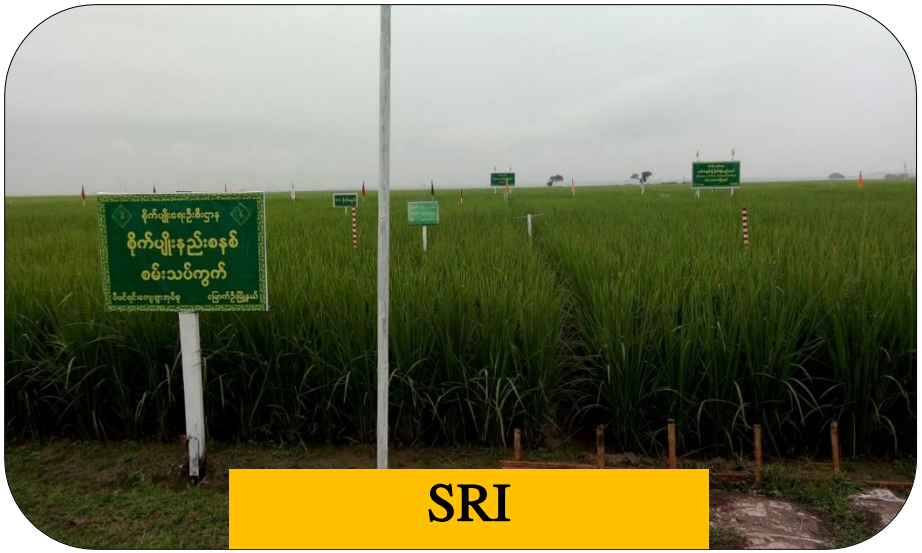
Treatments

T_1 - Raised Bed Method(0.50 ac)

T_2 - System of Rice Intensification (0.50 ac)

T_3 - Seeder Method (0.50 ac)

T_4 - Broadcasting Method (0.50 ac)



SRI

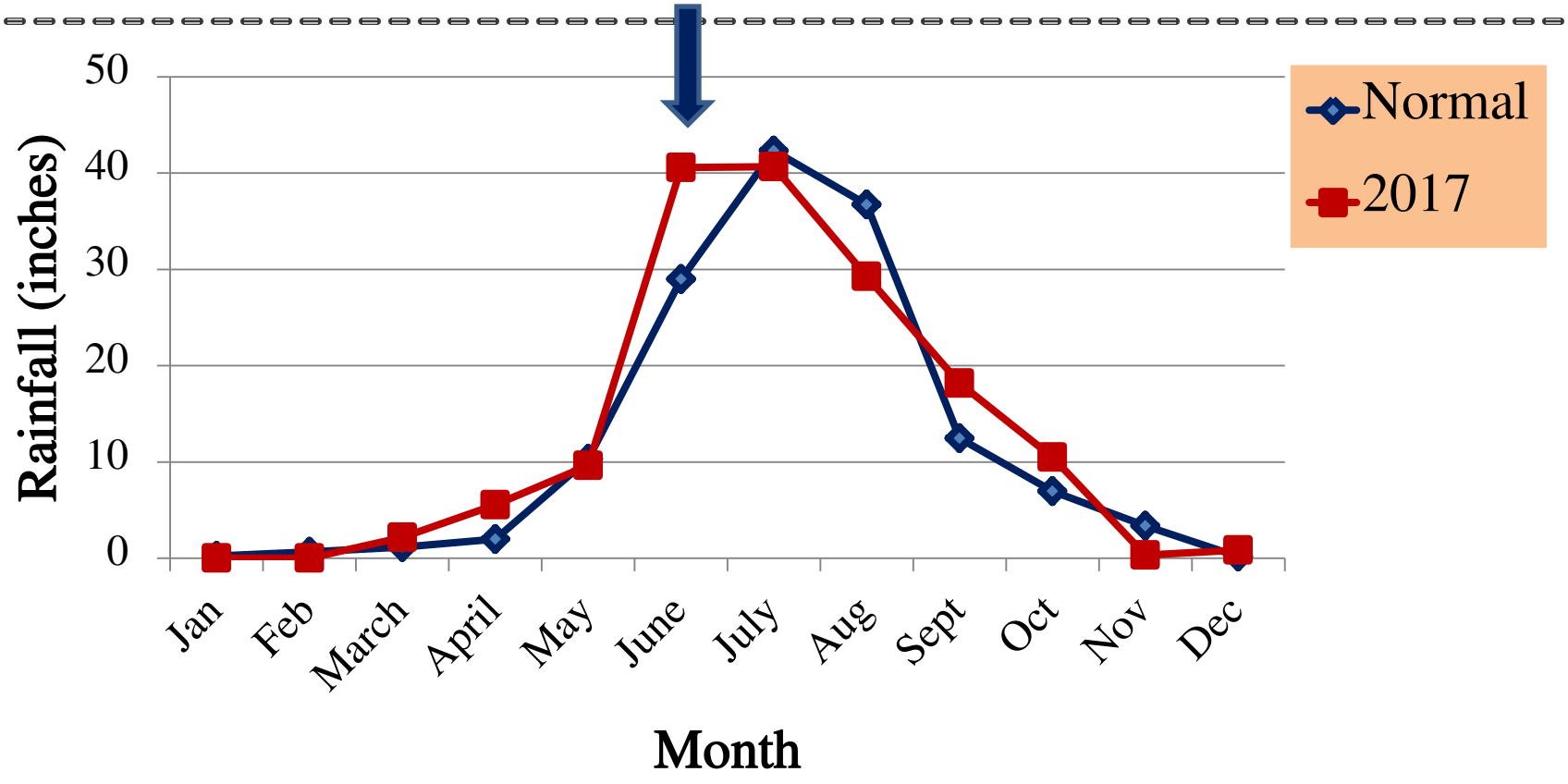

Seeder Method

Raised Bed Method

SRI

Broadcasting

Seeder Method



Content	Normal		2017	
	Days	Inches	Days	Inches
Total Rainfall	112	145.35	133	157.71

Figure (1) Comparison of normal and 2017 rainfall in Mrauk Oo Township

Table (1) Input (per acre)

Sr No	Item	Raised Bed	SRI	Seeder	Broad - casting
1	Seed	10 pyi	10 tin	1.5 bsk	2 bsk
2	**Fertilizer**				
	-Compound (15:15:15)	1 bag (50 kg)	1 bag (50 kg)	1 bag(50 kg)	1 bag(50kg)
	-Urea	1 bag(50 kg)	1 bag(50 kg)	1 bag(50 kg)	1 bag(50 kg)
	-Potash	¼ bag (12.5 kg)	¼ bag (12.5 kg)	¼ bag (12.5 kg)	¼ bag (12.5 kg)
3	Herbicide	-	-	-	500 cc
4	Pesticide	-	-	500 cc	500 cc

Table (2) Field Management

Sr No	Item	Raised Bed	SRI	Seeder	Broad - casting
1	Raised Bed	3' × 840'	4' × 40'	-	-
2	Transplanting -Spacing -Seedling Age	 8" × 6" 19 days	 10" × 10" 12 days	-	-
3	Intercultivation	2 times	2 times	2 times	-

Data Collection

1. Date of sowing
2. Date of transplanting
3. Date of 50% flowering
4. Days of 50% flowering
5. Plant height (cm)
6. Number of panicle per hill
7. Number of spikelets per panicle
8. Filled grain percentage (%)
9. Date of harvesting
10. Yield of trail plot
11. Grain yield (basket per acre)

Results and Discussion

Table (3) Mean Data of Characteristics of Sin Thway Latt

Sr. No.	Item	Raised Bed	SRI	Seeder	Broad-casting
1	Date of sowing	13.7.2017	13.7.2017	13.7.2017	13.7.2017
2	Date of transplanting	31.7.2017	24.7.2017	-	-
3	Date of 50% flowering	16.10.2017	14.10.2017	12.10.2017	12.10.2017
4	Days of 50% flowering	95	93	91	91
5	Plant height(cm)	98	106	95	87

Table (4) Mean Data of Yield and Yield Components of Sin Thway Latt

Sr. No.	Item	Raised Bed	SRI	Seeder	Broad-casting
1	No. of panicles per hill	8	29	5	3
2	No. of spikelets per panicle	95	81	99	115
3	Filled grain (%)	89	86	75	86
4	Date of harvesting	27.11.2017	27.11.2017	23.11.2017	23.11.2017
5	Yield of trial plot	45.69 bsk	63.27 bsk	38.78 bsk	34.05 bsk
6	**Grain Yield (bsk per acre)**	**91.38 bsk**	**126.53 bsk**	**77.56 bsk**	**68.10 bsk**

Table (5) Production Cost and Benefit per acre

Sr. No.	Item	Raised Bed	SRI	Seeder	Broad-casting
1	**Bed Preparation**	**15000 ks**	**15000 ks**	**10000 ks**	**5000 ks**
	-Land Preparation	10000 ks	10000 ks	-	-
	-Sowing	5000 Ks	5000 ks	10000 ks	5000 ks
2	**Field Land Preparation**	**54000 ks**	**54000 ks**	**54000 ks**	**54000 ks**
	-Plough	30000 ks	30000 ks	30000 ks	30000 ks
	-Harrow	24000 ks	24000 ks	24000 ks	24000 ks
3	**Transplanting**	**60000 ks**	**70000 ks**	-	-

Sr. No.	Item	Raised Bed	SRI	Seeder	Broad-casting
4	**Field Management**	**40000 ks**	**40000 ks**	**60000 ks**	**35000 ks**
	-Re-transplant	-	-	20000 ks	15000 ks
	-Intercultivation	20000 ks	20000 ks	20000 ks	-
	-Fertilizer application	20000 ks	20000 ks	20000 ks	20000 ks
5	**Inputs**	**81880 ks**	**78050 ks**	**100000 ks**	**115500 ks**
	-Seed	4380 ks	550 ks	10500 ks	14000 ks
	-Compound(15:15:15)	40000 ks	40000 ks	40000 ks	40000 ks
	-Urea	30000 ks	30000 ks	30000 ks	30000 ks

Sr. No.	Item	Raised Bed	SRI	Seeder	Broad-casting
	-Potash	7500 ks	7500 ks	7500 ks	7500 ks
	-Herbicide	-	-	-	12000 ks
	-Pesticide	-	-	12000 ks	12000 ks
6	Harvesting	50000 ks	50000 ks	50000 ks	50000 ks
7	Production Cost/acre	300880 ks	307050 ks	274000 ks	259500 ks
8	Yield per acre	91.38 bsk	126.53 bsk	77.56 bsk	68.10 bsk
9	Price per basket	5000 ks	5000 ks	5000 ks	5000 ks
10	Income	456900 ks	632650 ks	387800 ks	340500 ks
11	Net Benefit	156020 ks	325600 ks	113800 ks	81000 ks
12	Cost and benefit ratio	1 : 1.52	1 : 2.06	1 : 1.41	1 : 1.31

Conclusion

Conclusion

1. System of rice intensification (SRI) gave the highest grain yield among all cultural practices.
2. Raised bed method produced the second highest grain yield.
3. Production cost of SRI was 6170 kyats higher than the cost of raised bed but net benefit of SRI was twice of net benefit of raised bed. Therefore farmers should select SRI if they can follow SRI method.

4. Comparison of seeder method and broadcasting method, seeder method gave higher grain yield and net benefit than broadcasting method.
5. Farmers should practice SRI and raised bed as first priority. If they cannot afford these practices, they should behave seeder method as second priority.

THANK YOU