

Performance assessment of minimize of seedling and to increase yield (SRI-Non SRI)



Report

Submitted by

**Md. Shamim Ahmad
M S Thesis Student
Dept. of Fisheries
University of Rajshahi**

Title: Performance assessment of minimize of seedling and to increase yield

Investigation issue: Non line sowing with additional seedling.

Model: Performance assessment of minimize of seedling and to increase yield.

Objectives: To identify the adaptable option of seedling planting methods under changing climatic condition with good yield.

Materials & Methods

The experiment was conducted in 3 SAFBIN projects sites namely Paba, Boraigram and Potnitolaupazillas of greater Rajshahi. In each upazilla there was one PVS trial (one for each upazilla). Present study was Non line sowing, line sowing to reduce the number of seedling

Cultivar: Relatively short duration drought tolerant and drought escaping variety BRRIDhan56 was selected for this trial.

Design The trial was laid out in RCBD with 3 replications. Individual plot size was 6 m x 4 m with 4 border rows alongside the whole experimental field. 21 – 25 days old seedlings were transplanted having 3-4 seedlings per hill with spacing 20 cm X 15 cm.

Fertilizer Mgt: The following fertilizers were used:

Urea: 180 kg/ha applied in 3 equal splits (1st split 10 days after transplanting (DAT) + 2nd split 25 days DAT and 3rd split at the panicle initiation stage.

TSP: 75 kg/ha applied before final land preparation.

MOP: 90 Kg (½ at the basal + ½ with the 2nd top dress of urea)

Gypsum: 60 Kg/ha

Pest Mgt: Perching and judicious pesticide were used. In case of stem borer attack Virtako were applied. When rice bug infestation noticed at the flowering stage then any melathion sprayed avoiding pollination time (10 AM-14 AM). Rat infestation controlled by using bait, watering or put carefully Phostoxin tablet inside hole and blocked hole with mud.

Data Recording: Growth duration (days), fertile tiller/hill, thousand grain weight (gm) and yield (ton/ha) was harvested 10 m² for each variety and replication.

Data Analysis: Combined analyses were performed using IBM SPSS statistics 20.

Results

Joined analyses of the data obtained from baby trial viz. growth duration, fertile tiller, thousand grain weight and yield of the rice varieties BRRIDhan56 was produced using line and non-line sowing are presented in (Table 1) and Fig. 1 and 2. Growth duration varied significantly among the location. Similarly location had significant effect on growth duration so was interaction effect between variety x location (fig. 1). The result indicating that local agro-climatic condition of the trial location had strong effect on the growth duration of a particular variety. BRRIDhan56 took lowest duration significantly at Paba and Patnitala on the other hand it took highest duration to grown at Baraigram location.

Minimization of seedling (line and non-line sowing) on yield components data was presented in Table 1. Fertile tiller production differed among the varieties but locations and their interaction with variety was not significant. In the case of thousand grain weight variety, location and there interaction was significantly differed. Maximum and significantly different grain weight was recorded at Patnitala location and lowest grain weight was recorded at Baraigram location. Grain yield analysis revealed that interactions were significantly varied (Table 1). Irrespective of variety, grain yield among the location varied significantly with the least yield obtained from the location Baraigram. Grain yield in Pabawas significantly different and highest value was recorded.

A scatter plot of location and seedling minimization (line and non-line sowing) interaction was shown in Fig.2. Among the location, the highest difference between line and non-line sowing was observed at Paba location and the lowest differences was recorded at Patnitala. In compare between two sowing methods, line sowing methods was superior than non-line sowing at all location for grain yield production.

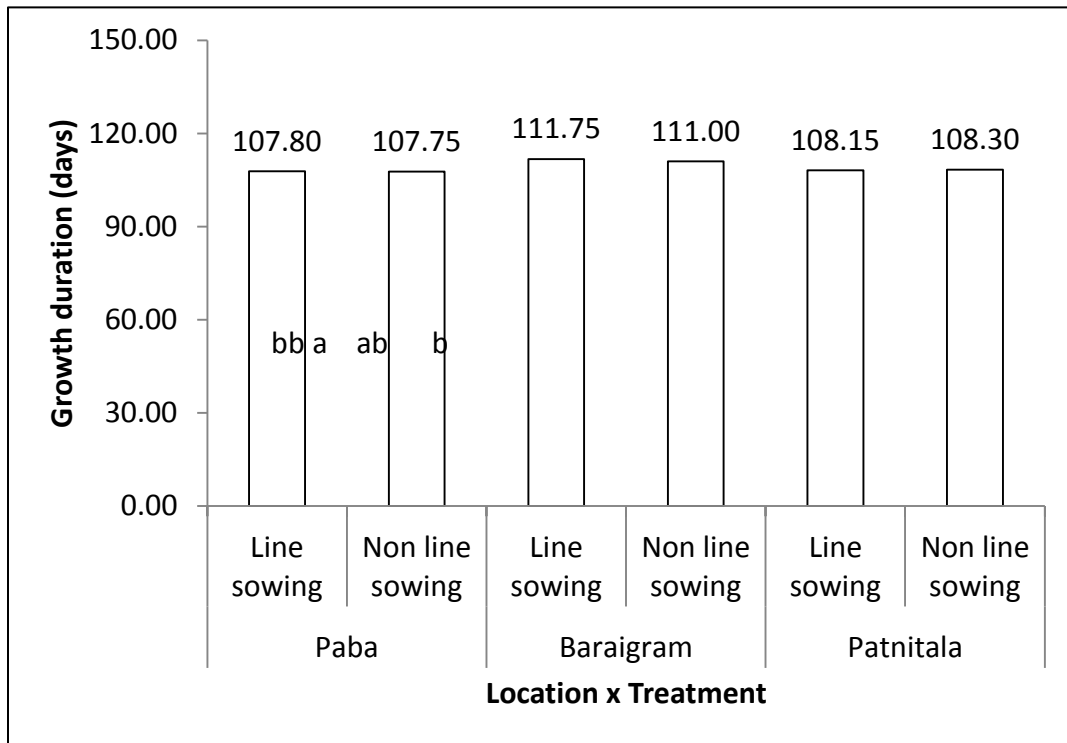


Figure 1. Effect of location and seedling minimization (line and non-line sowing) on growth duration of BRRIDhan56 rice.

Table 1. Minimization of seedling (line and non-line sowing) on yield components of BRRI Dhan56 rice variety grown in three locations. Data presents mean value with standard error. Differences within location × treatment by LSD at 5% level.

Location	Treatment	Yield component		
		Fertile tiller/hill	1000 grain weight (gm)	Yield (ton/ha)
Paba	Line sowing	11.700±0.322 a	23.125±0.089 b	4.722±0.064 ab
	Non line sowing	11.100±0.322 a	22.990±0.089 b	4.377±0.064 ab
Baraigram	Line sowing	12.000±0.322 a	22.935±0.089 b	4.538±0.064 b
	Non line sowing	11.400±0.322 a	22.850±0.089 b	4.318±0.064 b
Patnitala	Line sowing	11.650±0.322 a	23.550±0.089 a	4.707±0.064 a
	Non line sowing	10.550±0.322 a	23.700±0.089 a	4.647±0.064 a

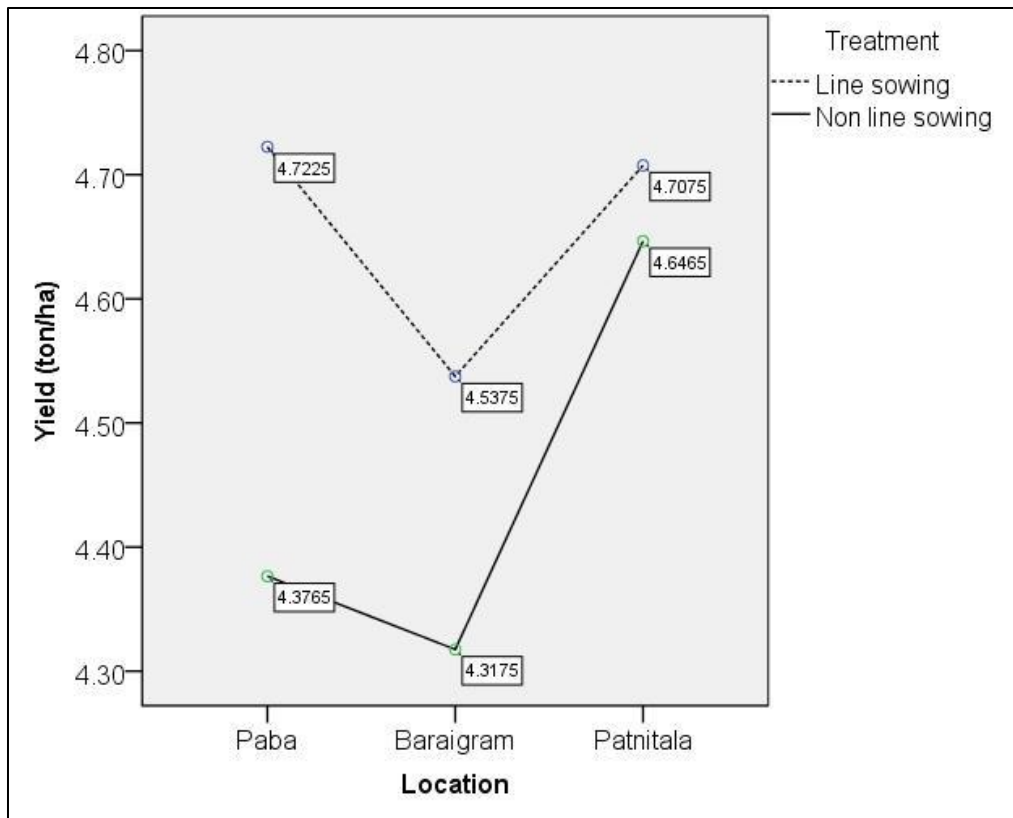


Figure 2. Scatter plot of location x seedling minimization (line & non-line sowing) interaction of BRRIDhan56 rice variety grown in three locations of Rajshahi Division.