Short Communication

Effect of Fertilizer on the Yield of Pati-pata, *Schumannianthus dichotoma*

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Pati-pata (*Schumannianthus dichotoma*) belonging to the Family Marantaceae is one of the important non - timber forest produces in Bangladesh. It grows naturally in the swampy areas as well as is cultivated in low-lying areas. The stem of this shrub is used for the preparation of mat, basket, bag and various novelty items (Mohiuddin and Rashid 1988). The plant can be grown using rhizome, branch cutting, rooted cutting and seedling (Merry *et al.* 1997, Siddiqi *et al.* 1998). However, the best performance was obtained from planting rhizomes. It has been reported that cultivation of pati-pata is more profitable than that of paddy (Mohiuddin and Rashid 1988). Thus fertilizer treatment was given one year after planting before the monsoon to observe its effect on the profitable enhancement in yield. The treatment combinations of fertilizer doses were as follows :

T_1 = NPK each at 270 gm/plot

T_2 = NPK each at 540 gm/plot

T_3 = NPK each at 710 gm/plot

T_0 = No fertilizer (control)

The experiment was laid out in a Randomized Complete Block Design (RCBD) with four replications at Bangladesh Forest Research Insititute campus, Chittagong. So, there were 16 plots each with a size of 4.5 m x 2 m. The plots were separated from one another by earthen embankment to prevent movement of water and other material among the plots. Each plot was planted with 180 rhizomes at a spacing of 1 m x 1 m. The experimental areas remained inundated for four months in a year. Data were recorded on survival, emergence of shoots, heights of main shoots and their diameters from different clumps at every three months interval for 15 months following fertilizer treatment. Leaving the two peripheral rows in a plot, data were collected only from the remaining interior clumps.

Analysis of variance (ANOVA) was done for data obtained after 15 months following application of fertilizer treatment. No significant difference was found for survival ($F_{3,16}$ = 0.27), number of shoots per clump ($F_{3,16}$ = 1.59), height of main shoots ($F_{3,16}$ = 1.08) and their diameter ($F_{3,16}$ = 0.23) under different treatments (Table 1). Average survival of the planted rhizomes, shoots per clump, height and diameter of main shoots for the entire area were 90.42%, 18.73 no., 1.9 m and 1.4 cm respectively.

Harvesting of the crop was undertaken at the age of three years. Number of usable shoots in 0.1 hectare was 17,275 and their green weight 4,957 kg. These differences were also insignificant ($F_{3,16}$ = 1.27 and $F_{3,16}$ = 0.48) for various treatments. It, therefore, appeared that an initial application of fertilizer did not enhance the productivity of the

Table 1. Average survival, shoots per clump, height of main shoots and their diameters under four treatments.

Treatment	Survival (%)	No. of shoots per clump	Height of main shoots (m)	Diameter of main shoots (cm)
T_0	90.00 ± 2.36	17.25 ± 1.28	1.82 ± 0.66	1.44 ± 0.08
T_1	86.67 ± 2.72	20.74 ± 0.70	1.97 ± 0.63	1.38 ± 0.06
T_2	90.01 ± 4.04	18.72 ± 0.87	1.96 ± 0.55	1.41 ± 0.04
T_3	95.00 ± 0.96	18.22 ± 0.69	1.92 ± 0.53	1.42 ± 0.06
Average	90.42 ± 2.53	18.73 ± 0.89	1.91 ± 0.59	1.42 ± 0.06

Note : T_0 = No fertilizer, $T_1 = N_{270}\ P_{270} K_{270gm/plot}$, $T_2 = N_{540}\ P_{540}\ K_{540gm/plot}$ and $T_3 = N_{710}\ P_{710}\ K_{710gm/plot}$

planted rhizomes of *S. dichotoma*. Response of added fertilizer to a particular crop depends on soil-crop-climate variables. A positive response is only expected if nutrient supply capacity of a soil falls short of nutrient demand. For this particular experimental area, application of fertilizer to enhance the growth was not needed. Thus further investigation may be undertaken in other areas in order to ascertain whether fertilizer treatment is required for enhanching the yield of pati-pata.

References

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