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POTENTIAL OF RATOON CROPPING OF BANANA CV. AMRITSAGAR

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Abstract

An investigation into the potential of ratoon cropping of banana cv. Amritsagar was carried out at the Central Research Station of the Bangladesh Agricultural Research Institute, Joydebpur during 1987-1990. The treatments consisted of (1) main crop, (2) first ratoon and (3) second ratoon crops. Uniform sword suckers were planted with 2 x 2 m spacing on December 6, 1987 for the main crop and in the subsequent first and second ratoon cropping only one uniform sucker per pit was allowed to grow under similar management practices as in the main crop. Banana plants of second ratoon crop were significantly taller (2.15 m) than both main crop and first ratoon crop. Second ratoon crop produced heaviest bunch (10.14 kg) followed by first ratoon (8.17) and the main crop (6.56). Total crop period was, however, recorded maximum in the first ratoon (365 days) followed by second ratoon (342 days) and main crop (301 days).

Key words : Banana, Ratoon crop, Amritsagar.

In Bangladesh different types of banana are growing in homestead and road side areas without proper care and management. Such a practice is not uncommon in many commercial banana plantation. There is neither commercial practice of ratoon cropping of banana in the country nor there is recommendation for the same. Information on the performance of different commercial banana varieties as ratoon crop and the advantages of this practice are not available. In this context the study on the potential of ratoon cropping of banana (*Musa sapientum)* cv. Amritsagar was undertaken to study the growth and yield of ratoon crops of banana over the main crop.

The study was conducted at the Central Research Station of the Bangladesh Agricultural Research Institute, Joydebpur during 1987-1990. The experiment was laid out in RCB design. There were three treatments viz. main crop, first ratoon and second ratoon crop which were replicated six times. Unit plot size was 14 x 4 m accommodating 14 plants in each plot. The plants were 2 x 2 m apart in both ways. Sword suckers of 1000±200 g weight size were planted on December 6, 1987 for the main crop. The crop was fertilized with Cowdung, Urea, TSP, MP and Gypsum @20 kg, 800 g, 600 g, 800 g and 250 g,respectively per plant. The entire quantity of Cowdung, TSP and Gypsum

Table 1. Plant characters and crop duration of banana cv. Amritsagar.

Treatment	Height * (m)	Base girth * (cm)	Top girth * (cm)	No. of green leaves*	Crop duration (days)
Main crop	1.71	54.86	31.59	3.54	301
First ratoon	1.71	48.93	37.93	7.75	365
Second ratoon	2.65	55.77	43.18	6.70	341
LSD $_{(0.01)}$	0.16	4.44	3.39	0.50	19.59

* means at harvest

were applied in pits before planting the suckers as basal dose. Urea and MP were applied in four equal instalments at two months interval beginning two months after planting. Irrigation was given soon after planting and then as and when necessary.

In the subsequent ratoon cropping, one sucker more or less of uniform size per pit was allowed to grow. The stump of mother plants and other suckers were removed along with the rhizomes. The fertilizer doses and management practices in the first and second ratoon were the same as in the main crop. Basal doses of manure and fertilizers as applied in the main crop were also applied in the first ratoon and second ratoon crop at the time of removal of the stumps of the previous crop.

Data pertaining to growth such as height, base and top girth, number of green leaves at harvest, total crop duration as well as yield components viz. number of hands and fingers per bunch, size and weight of finger and weight of bunch were recorded. The data were statistically analyzed and the means were compared by least significant differences (LSD).

Variation in morphological characters of banana plants for the main and ratoon crop are presented in Table 1. The plants of second ratoon were significantly taller (2.15 m) than the plants of both the first and main crop (1.71 m). Base and top girth of the plants were also recorded maximum in the second ratoon (55.77 and 43.18 cm respectively) was compared to those of the first ratoon (48.93 and 37.93 cm) and the main crop (54.86 and 31.59 cm). The plants of the first ratoon crop had, however, higher number of green leaves at harvest (7.75) than those of the second ratoon (6.70) and the

Table 2. Fruiting behaviour of banana cv. Amritsagar for the main and ratoon crop.

Treatment	No. of hands/ bunch	Wt./hand (kg)	No. of fingers /bunch	Fruit wt. (g)	Fruit length (cm)	Fruit diameter (cm)	Bunch wt. (kg)	Bunch* wt. (kg)
Main crop	4.52	1.34	47.00	126.5	14.74	3.21	6.56	6.14
First ratoon	4.54	1.66	42.00	176.3	16.10	4.51	8.17	7.38
Second ratoon	5.07	1.81	64.00	153.5	22.53	4.25	10.14	9.34
LSD $_{(0.01)}$	0.45	0.18	7.53	12.22	1.20	0.38	1.15	1.02

* means without peduncle

main crop (3.54). Crop duration was maximum in the first ratoon (341 days) and the main crop (301 days). Turner and Hunt (1987) also reported that ratoon crop took longer time to complete its life cycle.

Fruiting behaviour of banana cv. Amritsagar for the main and ratoon crop are presented in Table 2. Second ratoon crop produced the heaviest fruit bunch (10.14 kg) followed by the first ratoon (8.17) and the main crop (6.56). The bunch weights without peduncle were also heavier in the second ratoon (9.34 kg) than those of the first ratoon (7.38) and the main crop (6.14). Number of hands per bunch was higher in the second ratoon crop (5.07) compared to the first ratoon (4.54) and the main crop (4.52) which were similar to each other. Weight per hand was also higher in the second ratoon (1.81 kg) followed by the first ratoon (1.66) and the main crop (1.34). Significantly higher number of fingers per bunch was obtained in the second ratoon (64) than those of the first ratoon (42) and the main crop (47). The weight per fruit was, however, the highest in the first ratoon (176.3 g) which was followed by second ratoon (153.5 g) and the main crop (126.5 g). The length of fruit was maximum in the second ratoon (22.53 cm) followed by the first ratoon (16.10 cm) and the main crop (14.74 cm). But diameter of the fruit was the highest in the first ratoon (4.51 cm) as compared to that of second ratoon (4.25 cm) and the main crop (3.21 cm).

Both the first and the second ratoon crops of Amritsagar banana gave better performance than the main crop in respect of plant growth and yield when grown under similar management condition. This happened due to initial good start of growth and absence of planting shock as experienced by the main crop. This is in agreement with the findings of Turner and Hunt (1977) who reported that the ratoon crop had higher bunch weight than the main crop when planted in Novemebr, January and March.

Reference

Turner, D.W. and N. Hunt. 1987. Planting date and defoliation influences the time of harvest of banana. Scientia Hort. 32 : 233-248.