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SHORT COMMUNATION

Performance of Some Released Sugarcane Varieties under Thakurgaon Sugar Mills Zones

M. M. Rahman, B.P. Podder; R.C.Kabiraj, K. S. Alam and M.A. Rahman
Bangladesh Sugarcane Research Institute,
Ishurdi, Pabna.

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The study was under taken to evaluate the adaptability performance of the BSRI released some commercial sugarcane varieties viz. Isd 31, Isd 30, Isd 29 and Isd 28 (standard) at Thakurgaon Mill Zone areas during the cropping seasons of 2001-2002 and 2002-2003. The recommended varieties viz. Isd 31, Isd 30, Isd 29 and Isd 28 now growing in the sugar mill zones did not perform equally in all ecological zones. Results revealed that the variety Isd 31 produced the highest cane yield (87.37 t ha^{-1}) and the lowest (57.53 t ha^{-1}) cane yield and maximum brix percentage (22.50) was found in the variety Isd 30. Considering cane yield and sucrose content the sugarcane variety Isd 31 was found as adaptable variety for Thakurgaon region.

Without adaptability test, we cannot recommend a particular variety for a particular location. Therefore, development of high yielding varieties with wide adaptability is urgently needed at this moment to make this crop profitable to the growers and for meeting sugar and gur deficiency in the country. These aspects provide ideas about a particular character of which greater emphasis should be given while selecting suitable plant type (Singh *et al.*, 1981). Sugarcane is the main crop in some pockets of the eastern zones and in all parts of the northwestern zones of Bangladesh (Rashid, 1992).

The experiment was set up at the grower's plot of Akhanagar, Krisnapur and Gobindhanagar experimental farm of Thakurgaon Sugar Mills (TSM) Thakurgaon during the two cropping seasons 2001-2002 and 2002-2003. The experiment was comprised of four sugarcane varieties viz, Isd 28 (standard), Isd 29, Isd 30 and Isd 31. The experiment was laid out in RCB design with four replications and plot size was 10m x 8m, where row to row distance was 1 meter. Urea, Triple superphosphate (TSP), Muriate of potash (MOP) and Gypsum were used as the source of N_{120}, P_{35}, K_{100} and S_{25} kg per hectare respectively. The urea was applied in three equal splits, the first split at the settling establishment stage, the second at tiller completion stage 90 (DAP) and the third at grand growth phase 180 (DAP). Full amount of TSP, Gypsum and one third of MOP were applied in trenches and thoroughly mixed with soil prior to setts plantation. The rest amount of MOP was applied as first and second top dressing at 90 DAP and at 180 DAP respectively. Intercultural operation was made when necessary. Same doses of fertilizers were applied in the second year. Data were taken in the month of February, March. May, September, December and January. Different data on germination percentage, number of tiller per

hectare, number of millable cane, sucrose percent and yield of cane were recorded. The canes were harvested on last week of December in both the years.

Performance of the varieties under different locations are presented in Table 1 and II. It was revealed from the table that the variety Isd 31 produced the highest germination percentage (45.33); highest number of tillers ($143.5x10^3ha^{-1}$); highest number of millable cane ($97.08 x10^3ha^{-1}$) and cane yield (87.36a t ha^{-1}) in all location. The lowest (59.44 t ha^{-1}) cane yield was recorded in Isd 30. Variation in tiller production among the different varieties was reported by Miah *et al.*, (1994) and Rashid *et al.*, (2001). The maximum number of millable cane production in Isd 31 variety might be due to the higher number of tiller production compared to other varieties. Matin *et al.*, (1989) also reported similar results on millable cane production. The maximum brix percentage (22.50) was found in the variety Isd 30. The recommended variety Isd 30 is not performing well in the sandy soils of Thakurgaon Sugar Mills (TSM) Zones but the sucrose content was high. This trial is evaluated the performance of the BSRI released commercial variety Isd 31 to the northern region of Bangladesh.

Table 1a: Yield and Yield Attributes of the Tested Sugarcane Varieties under TSM Zones in 2001-2002

Treatments	Germination (%)				No. of Tillers ($x10^3 ha^{-1}$)				No. of Millable cane ($x10^3 ha^{-1}$)			
	Akha nagar	Krisna pur	Gobindo nagar	Mean	Akha nagar	Krisna pur	Gobindo nagar	Mean	Akha nagar	Krisna pur	Gobindo nagar	Mean
lsd 28	40.41 b	40.17a	36.01bc	38.86abc	142.6a	132.9b	132.4a	135.97ab	96.13a	90.91ab	90.13a	92.39a
lsd 29	32.74c	32.87b	32.44c	32.68bc	112.3c	106.9d	107.2c	108.80cd	75.79c	73.45c	72.69c	73.97c
lsd 30	39.42b	35.05b	36.54b	37.00b	116.1b	118.9c	114.4b	104.43bc	79.60b	84.92b	79.69b	81.40b
lsd 31	43.05a	40.76a	40.83a	41.54a	143.5a	138.8a	135.6a	139.30a	97.08a	95.38a	93.75a	95.40a
LSD (5%)	0.2861	2.511	3.967	-	3.606	5.337	3.298	-	3.619	6.299	4.103	-

Table 1b: Yield and Yield Attributes of the Tested Sugarcane Varieties under TSM Zones in 2001-2002

Treatments	Yield ($t\ ha^{-1}$)				Brix (%)			
	Akha nagar	Krisna pur	Gobindonagar	Mean	Akha nagar	Krisna pur	Gobindonagar	Mean
lsd 28	87.31a	81.82a	87.05a	85.40a	19.50b	20.75b	20.63b	20.29b
lsd 29	68.21b	66.10b	68.60b	67.63b	19.63b	19.75c	20.25b	19.87bc
lsd 30	59.21c	59.44c	57.53c	58.72c	21.25a	21.88a	22.50a	21.87a
lsd 31	87.37a	85.83a	84.96a	86.05a	19.50b	20.25bc	20.50b	20.08bc
LSD (5%)	3.227	5.03	3.613		1.000	0.7571	0.6936	-

Table 2a: Yield and Yield Attributes of the Tested Sugarcane Varieties under TSM Zones in 2002-2003

Treatments	Germination (%)				No. of Tillers ($x10^3 ha^{-1}$)				No. of Millable cane ($x10^3 ha^{-1}$)			
	Akha nagar	Krisna pur	Gobindo nagar	Mean	Akha nagar	Krisna pur	Gobindo nagar	Mean	Akha nagar	Krisna pur	Gobindo nagar	Mean
lsd 28	45.03a	37.04a	34.71b	38.92ab	135.0a	131.3a	141.1a	135.80a	91.85b	86.93a	94.39a	91.05ab
lsd 29	32.28c	28.13d	32.89b	31.10bcd	110.3c	105.4b	111.4c	109.03bc	71.14d	70.94b	76.23c	72.77bcd
lsd 30	40.06b	33.68c	43.57a	39.10abc	117.2b	109.3b	118.0b	114.83b	82.13c	74.70b	82.20b	79.67bc
lsd 31	45.33a	34.41b	40.44a	40.06ab	137.2a	132.5a	141.9a	139.20a	95.35a	89.07a	94.40a	92.94a
LSD (5%)	3.959	0.6537	4.554	-	4.789	4.362	3.764	-	2.077	4.009	4.867	-

Table 2b: Yield and Yield Attributes of the Tested Sugarcane Varieties under TSM Zones in 2002-2003

Treatments	Yield ($t\ ha^{-1}$)				Brix (%)			
	Akhanagar	Krisna pur	Gobindonagar	Mean	Akhanagar	Krisna pur	Gobindonagar	Mean
lsd 28	82.66b	82.58a	85.65a	83.63ab	20.25b	20.50b	20.63b	20.46b
lsd 29	64.02c	63.84b	68.60b	65.48bc	20.25b	20.00b	20.25b	20.16b
lsd 30	57.49d	55.28c	57.53b	56.76bcd	21.75a	21.88a	22.50a	22.04a
lsd 31	85.82a	84.61a	84.96a	85.13a	20.25b	20.50b	20.50b	20.41b
LSD (5%)	1.793	3.235	3.843	-	0.777	0.503	0.963	-

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