

Performance of Some BSRI Bred Varieties as Ratoon Crop under High Ganges River Flood Plain Soil SCIENTIFIC NOTE

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Ratooning is a common practice in sugarcane growing area of the world. Sugarcane growing countries generally cover 50-70% of their cane area under ratooning which produces almost equal yield to that of plant cane. In Bangladesh, only 20% of the cane area is ratooned every year producing in an average 40 t ha⁻¹ while the potential yield has been found to be around 80 t ha⁻¹ (BSRI, 2001). In Mauritius five to eight ratoon crop are commonly grown (Ponnappan, 1994). As many as six to eight successive ratoon are raised in Taiwan (Soppramanien and Hunsigi, 1996). In India, research strategies for sugarcane production through ratooning has been under taken as an aid to cut down production cost (Srivastava et. al. 1990). In recent years there has been found considerable increased interest on multi ratooning to reduce the cost of cultivation and also to improve sugar recovery in early part of the crushing season. But due to non-availability of suitable sugarcane variety (s), profitable production of sugarcane as well as increasing sugar recovery through ratoon nmanagement is still lacking in Bangladesh.

Therefore, the present experiment has been under taken to study the performance of some BSRI bred varieties as ratoon crop in growers field of Chuadanga district under High Ganges River Flood Plain Soils (AEZ 11), which is predominantly high land and medium high land. The overall soil pattern of this area is olive-brown silt loams and silty clay loams. The soils of this region are slightly alkaline in reaction.

After harvest of plant cane grown in 2003-2004, ratoon crops were raised from left over stubble's of harvested plant cane in the next cropping season, 2004-2005 at Chuadanga site under AEZ-11. In all eight sugarcane varieties were included with different management practices for sugarcane ratoon. These were Isd 2-54, Isd 16, Isd 29, Isd 30, Isd 31, Isd 32, Isd 33 and Isd 34. Each variety was treated as treatment and was replicated thrice following RCB design. Stubble's shaving just after harvesting of plant cane was done in Mid January, 2005. Gap filling was done within one month of stubble shaving with polybag raised settlings. One third of urea and muriate of potash (MP), full dose of triple super phosphate (TSP), gypsum, Zinc sulphate were applied and thoroughly mixed with soils by spade. Remaining half of urea and MP were top-dressed in two equal splits, first at 120 days and second at 180 days after planting (DAP). All other cultural operations as recommended were followed when required. Data on tiller production at peak period, production of millable cane and cane yield at harvest were taken for statistical analysis and interpretation.

Results of the study are presented in Table 1. Data on tillers production showed that Isd 31 produced the highest number of tillers (223.0 x 103 ha⁻¹) followed by Isd 34 (215.9 x 103 ha⁻¹) while Isd 2-54 (202.0 x 103 ha⁻¹) and Isd 33 (202.4 x 103 ha⁻¹) produced tillers which were statistically similar. Statistically identical tillers were also produced by Isd 16 (123.0 x 103 ha⁻¹) and Isd 32 (140.3 x 103 ha⁻¹). Considering the number of millable cane production, the variety Isd 31 produced highest millable cane (138.0 x 103 ha⁻¹) which were found statistically identical with Isd 33 (131.5 x 103 ha⁻¹) and Isd 34 (133.3 x 103 ha⁻¹). In case of yield, the highest (121.0 x 103 ha⁻¹) yield was found in Isd 31 followed by Isd 34 (112.2 x 103 ha⁻¹). The variety Isd 33 though produced statistically similar millable cane like Isd 31 yet it failed to produce cane yield to that of Isd 31.

The variety Isd 2-54, Isd 16 and Isd 29 included in the present study showed better performance compared to the experimental findings in 1999-2000 with the BSRI bred varieties (Anon. 2000). The variety Isd 2-54 and Isd 16 considered as standard yielded 74.4 and 60.0 t ha⁻¹ respectively in 1999-2000 while the same varieties showed cane yield of 79.86 and 75.14 t ha⁻¹ respectively in the present study indicating ratooning potential for the Chuadanga site.

Table 1. Performance of some BSRI bred Sugarcane Varieties in respect of tillers, millable canes and yield under ratoon management, Chuadanga, 2004 -2005.

Variety	Tillers 10^3 ha^{-1}	Millable canes (10^3 ha^{-1})	Yield (t ha^{-1})
Isd2-54 (Standard)	202.0 bc	106.9 b*	79.86 d
Isd 16 (Standard)	123.0 d	78.13 c	75.14 de
Isd 29	196.0 c	106.2 b	101.70 bc
Isd 30	102.0 e	69.24 d	67.50 e
Isd 31	223.8 a	138.0 a	121.0 a
Isd 32	140.3 d	103.3 b	94.44 c
Isd 33	202.4 bc	131.5 a	94.24 c
Isd 34	215.9 ab	133.3 a	112.2 ab

* Figures in different columns accompanied by similar letters do not differ significantly as per DNMR test at 0.05 level.

From the yield data presented in the Table 1, it was found that significantly lower yield was obtained in the varieties Isd 2-54 (79.86 t ha^{-1}) released in sixteen and Isd 16 (75.14 t ha^{-1}) in eighteen compared to all the latest varieties used in the experiment except Isd 30 that produced lowest yield of 67.50 t ha^{-1} .

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