

Effect of planting dates on yield and quality of sugarcane (*Saccharum* species) varieties

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In north and north-west India sugarcane (*Saccharum* sp.) is usually planted in spring after harvest of wheat and gram. In north and north-west parts of country, delayed planting of sugarcane after rice-wheat sequence causes reduction in yield and quality. To select suitable variety and find out optimum date of planting, a field experiment was conducted at Pantnagar from February 1987 to February 1988.

The experiment was laid out in split-plot design with 4 dates of planting (mid-

February, mid-March, mid-April and mid-May) in the main plot and 4 varieties ('Co 1148', 'CoS 802', 'CoS 767' and 'CoS 7918') in the subplot. The soil was silty clay loam, high in organic carbon (0.93%) and available potassium (262.8 kg K/ha), medium in available phosphorus (19.6 kg P/ha) and neutral in reaction (pH 7.3)

February-planted crop gave the highest cane yield and was significantly better than other planting dates. Delayed planting in March, April and May decreased cane yield

Table 1. Effect of planting date and variety on yield and quality of sugarcane

Treatment	Cane length (cm)	Weight/cane (g)	Millable canes ('000/ha)	Cane yield (tonnes/ha)	Brix (%)	Sucrose (%)	Purity coef-ficient	Avail-able sugar (%)	Commer-cial cane sugar (tonnes/ha)
<i>Planting date</i>									
Mid-Feb	226.2	901.0	93.8	86.9	19.2	15.9	83.0	10.6	9.3
Mid-Mar	206.4	757.9	83.7	71.3	18.8	15.9	84.6	10.7	7.6
Mid-Apr	182.2	728.9	71.5	56.1	18.4	14.5	77.9	9.3	5.2
Mid-May	155.5	563.6	58.6	38.2	17.6	13.7	77.7	8.9	3.4
CD (P = 0.05)	7.4	24.2	3.0	4.5	0.4	0.2	2.3	0.2	0.5
<i>Variety</i>									
'Co 1148'	190.6	689.4	79.3	64.6	19.5	16.1	82.4	10.7	6.9
'CoS 802'	188.0	730.9	73.3	60.6	17.8	14.2	79.1	9.2	5.7
'CoS 767'	184.3	713.5	73.9	57.9	18.4	14.8	80.7	9.8	5.8
'CoS 7918'	207.4	817.6	81.1	69.5	18.4	14.9	81.1	9.9	7.0
CD (P = 0.05)	5.7	39.2	4.3	2.3	0.3	0.2	1.5	0.2	0.2

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by 17.9, 35.4 and 65.0% respectively compared with February planting due to decrease in yield components (Table 1). Among varieties, 'CoS 7918' gave the highest cane yield, being significantly higher than the other varieties. In general, 'CoS 7918' showed its elastic behaviour with respect to dates of planting ranging from mid-February to mid-May.

February-planted crop followed by March-planted crop recorded maximum brix, sucrose, purity coefficient, available

sugar and commercial cane sugar and was significantly higher than May-planted crop. Commercial cane sugar produced by February- and March-planted crops were more than 2.5 and 2 times respectively than May-planted crop. Although, the value of above quality parameters was lower in 'CoS 7918' in comparison to standard variety 'Co 1148', increase in cane yield of the latter compensated and thus sugar yield was almost same in both varieties (Table 1).

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Performance of hybrid cotton (*Gossypium* species) cultivars at different plant densities and nitrogen levels under rainfed condition

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Managing hybrid cotton (*Gossypium* sp.) for higher economic yield in black-cotton soils besides other factors, entails close co-ordination of optimum plant stand and high fertility level. Due to luxuriant growth, hybrids are still considered to be grown wide apart. A field experiment was conducted during the rainy (*khari*) seasons of 1987, 1988 and 1989 to determine the optimum plant density and nitrogen requirement of 'NHH 302' cotton and its yield potential in comparison to established hybrids 'NHH 44', 'DCH 32' and 'NHB 12' under rainfed condition at Nanded. The treatments

consisting of 4 plant densities (60 cm × 30 cm, 60 cm × 60 cm, 60 cm × 90 cm and 60 cm × 120 cm) and 4 nitrogen levels (40, 60, 80 and 100 kg N/ha) as main plots and 4 hybrids ('NHH 302', 'NHH 44', 'NHB 12' and 'DCH 32') as subplots were replicated twice in split-plot design. Sowing was done on 3 July, 22 June and 30 July in 1987, 1988 and 1989 respectively. Half dose of N as per treatments and full dose (40 kg/ha) of P and K were applied at the time of sowing. Remaining half dose of N was applied at square-formation stage.