

Effect of Different Dates of Planting on Flowering of Sugarcane

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ABSTRACT

An experiment was conducted to determine the effect of planting time on flowering of sugarcane. The variety Isd-16 was planted in five different dates starting from 15th November, 1983 to 15th March, 1984. Each time sets were planted with one month interval. In each treatment data were recorded on number of millable stalk, percent flowering stalk and first date of flowering. Different planting dates showed no effect on flowering time under SRTI climatic conditions. Maximum millable and flowering stalks were produced by November planting. Planting may be continued upto February.

INTRODUCTION

In sugarcane, flowering in different parent materials varies from early to late crossing season. That is, some varieties flower earlier while some flower later which make it difficult to cross among the desired parents. Some authors reported that flowering time could be changed through spraying some chemicals or changing the planting dates. Coleman (1959), Daniels (1962), Clements and Awada (1965), George and Lalauette (1962) and El-Manhaly *et. al.* (1980) agree that age of cane, temperature, soil moisture and fertility at the time of inductive day lengths interact with the photoperiod to enhance or retard or prevent transformation of the sugarcane apices from vegetative to reproductive growth. At SRTI, the flowering of different varieties start from late October and continued till late January every year but the crossing period remains in between first week of November to mid-December. In Bangladesh, no work has been done on the possibility of changing the flowering time of canes through changing planting time and, therefore, an experiment was conducted to determine the effect of different planting dates on time of flowering and number of flowering stalk.

MATERIALS AND METHODS

The variety Isd-16 was used as planting material which profusely flower between first and second week of November every year depending on climatic conditions. Single eye-budded sets were planted in 4"x 2" PVC pipe, filled with soil, using five planting dates starting from 15th November, 1983 to 15th March, 1984. Each time 150 buds were planted with one month interval. After one month of plantation, among the germinated buds, 72 more or less uniformly grown, good looking healthy seedlings were transplanted in a well prepared field. The seedlings were transplanted in a 3mX4.5m plot with four replications using randomized block design. In each plot, 18 seedlings were transplanted in 3 rows. They were spaced 1.5 metre and 50 cm between and within rows, respectively. Normal cultural practices were done. In each treatment, data were collected from whole plot on number of millable stalk, percent flowering stalk and first date of flowering. In each case millable and flowering stalks were recorded during the month of September, 1984 and last week of January, 1985, respectively. Number of days to first flower were counted from the date of planting of sets to the date of emergence of flower.

RESULTS AND DISCUSSION

Number of millable stalk decreased with the delay of planting dates (Table 1). Millable stalk of March planting was very poor and was significantly lower than in all other planting dates. Maximum number of millable stalk was produced by November planting followed by December planting. February planting showed significantly lower number of millable stalk from November and December planting but higher than March planting. The decreasing trend in number of millable stalk with the delay of planting times might be due to short period of growth. The significantly lower number of millable stalk in March planting might be due to short period of growth as well as no rainfall and low humidity (64.45%) of the respective month. The higher number of millable stalk in November planting was partially supported by the finding at SRTI (SRTI Annual Report, 1982).

Table 1. Effect of planting time on first date of flowering, number of millable stalk and percent flowering stalk during 1983-84.

Time of planting	First date of flowering	Number of millable stalk	Percent flowering stalk
November	13.11.84	76.25 a *	96.70 a
December	12.11.84	71.75 a	94.33 a
January	15.11.84	65.50 ab	90.68 a
February	15.11.84	53.75 b	91.07 a
March	15.11.84	29.50 c	66.80 b

* Figures with the same letter do not differ significantly as per DNMR test at 5% level.

The first date of flowering for November, December, January, February and March planting were 13th, 12th, 15th, 15th and 15th November of 1984, respectively, i.e., the difference of flowering in different treatments was only three days (Table 1). In other words, various planting dates apparently showed no effect on flowering time which might be due to environmental effect.

Percent flowering stalk showed a decreasing trend with the delay of planting dates (Table 1). The highest number of flowering stalks were produced by November and December plantings showing 96.70 and 94.33 percent of flowering stalks, respectively. The highest percentage of flowering stalk in November planting might be due to long growth period and uniform maturity of the flowering stalk. Minimum number of flowering stalks were produced by March planting and was significantly lower than those in all other planting dates. This lower number of flowering stalks may be due to late planting which affected the initial growth and ultimately the flowering.

The work suggests that flowering time can not be changed through changing planting date under SRTI climatic conditions. November planting was suitable time for maximum production of flowering stalk. For hybridization purposes plantation may be continued upto February.

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