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Effect of Cultivars, Time of Sowing on Growth, Yield and Economics of Sweet Corn

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Abstract A field experiment was conducted to study the peformance of sweet corn cultivars under varied times of sowing during *rabi* 2011. The treatments consisted of combination of two factors viz., three varieties (Madhuri, Sugar 75, Misthi) and four times of sowing (Oct I FN and II FN, Nov I FN and II FN). Among the cultivars, Misthi produced significant higher green cob yield and economics with maximum values of growth and yield attributes over other cultivars. Sweet corn sown in I FN Oct gives higher cob yield of with of with maximum growth attributed characters than the subsequent delayed sowing.

Keywords Growth, Yield, Economics, Sweet corn varieties, Times of sowing.

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Introduction

Maize is cultivated in tropical, sub-tropical and temperate countries of the world. Among the various specialty corns, sweet corn is a mutant type, with one or more recessive alleles in homozygous condition, which enables the endosperm to accumulate twice the sugar content as that of the seed corn.

In order to best utilize the moisture, nutrients and solar radiation and for obtaining high seed yield of good quality, optimum time of sowing should be identified. Since the area under post-rainy maize crop is increasing in recent years, it is essential to find out an optimum sowing with suitable cultivar for sweet corn corp during *rabi* season. Keeping the facts in view, a field experiment entitled "Growth,Yield and Economics of Sweet Corn Cultivars as Influenced by Different Times of Sowing.

Materials and Methods

A field experiment was conducted during *rabi*, 2011-12 at S. V. Agricultural College wetland farm, Tirupati of Acharya N. G. Ranga Agricultural University, to study the "Growth, Yield and Economics of Sweet Corn cultivars as Influenced by Different Times of Sowindg". The experiment was laid out in a RBD with factorial concept, replicated thrice. The treatments consisted of combination of two factors Factor A : Cultivars (3) : Madhuri, Sugar 75 and Misthi and Factor B : Times of sowing (4) : Oct I FN anf II FN,

Table 1. Phenology and yield attributes of sweet corn cultivars as influenced by different times of sowing.

Treatments	Days to 50% tasseling	Days to 50% silking	Green cob weight with husk (g)	Hundred fresh kernel weight (g)
Cultivars				
Madhuri	60.5	66.0	229	27.7
Sugar 75	53.2	59.1	280	28.5
Misthi	51.2	57.4	300	31.9
CD (p=0.05)	1.3	1.4	9	0.7
Time of sowing				
October I FN	51.3	57.3	290	32.2
October II FN	54.2	60.5	273	31.0
November I FN	56.5	62.3	268	29.5
November II FN	57.8	63.3	247	24.8
CD (p=0.05)	1.6	1.6	11	0.8

Table 2. Yield and economic studies of sweet corn cultivars as influenced by different times of sowing.

Treatments	Green cob yield (kg ha^{-1})	Net returns (Rs. ha^{-1})	Gross returns (Rs. ha^{-1})	BC ratio
Cultivars				
Madhuri	12508	55301	79014	3.34
Sugar 75	16482	77942	102455	4.19
Misthi	17910	86960	111474	4.55
CD (p=0.05)	350	1750	1750	0.07
Time of sowing				
October I FN	18291	89786	113095	4.84
October II FN	16375	77078	101638	4.13
November I FN	14784	68354	92914	3.77
November II FN	13084	58386	82945	3.37
CD (p=0.05)	404	2020	2020	0.08

Nov I FN and II FN. The soil of the experimental field was sandy loam in texture with pH 6.5 and 0.24% organic carbon. The available nitrogen, phosphorus and potassium were 213 kg ha^{-1} , 29.3 kgha^{-1} and 281 kg ha^{-1} respectively. All the management practices were adopted for sweet corn cultivation as per the recommendations of Acharya N. G. Ranga Agricultural University, A. P. The data recorded on various parameters of crop was subjected to statistical scrutiny by the method of analysis of variance.

Results and Discussion

Sweet corn cultivars differed significantly in days to 50% tasseling and 50% silking (Table 1). The cultivar, Madhuri took more number of days to 50% tasseling (60.5) and days to 50% silking (66) over Sugar 75 and Madhuri. Sowing during Nov II FN took more number of days to 50% tasseling (57.8) and 50% silking (63.3) which was comparable with Nov I FN (56.5), (62.3) respectively. October I FN sown crop took least number of days to 50% tasseling (51.3) and days to 50% silking (57.3). Varietal difference with respect to days to 50% flowering in maize was reported by Chavan and Chavan [2]. Sweet corn sown in October I FN took lesser number of days to 50% flowering (tasseling and silking). This might be due to lower temperayture experienced by late sown crops just before flowering and took more number of days to 50% tasseling and silking . These results are in consonance with [3].

The highest green cob weight with husk (300 g) and hundred fresh kernel weights (31.2 g) was recorded highest with Misthi cultivar. Among the times of sowing, October I FN recorded highest cob weight and hundred fresh weight which were significantly superior to all other times of sowing.

Sweet corn cultivars differed significantly in green cob yield. The highest green cob yield (17,910 kg ha^{-1}) was recorded by the cultivar Misthi, which were 8.66% and 43.1% increased over Sugar 75 and Madhuri. The difference in cob yield among the time of sowing was obtained to be significant . The crop sown on October I FN produced the highest green cob yield (18,291 kg ha^{-1}) and it was 39.8% higher than the crop sown on November II FN. Early sown crop received the optimum environment conditions required for better crop growth in terms of plant height, and dry matter accumulation. The significantly positive association between biological yield with growth parameters namely plant height (r=0.36) and dry weight (r=0.78). Similar findings were reported earlier [1—2].

Profitability of Sweet corn was significantly influenced by cultivars (Table 2). The highest gross returns (111474), net returns (Rs 86,960 ha^{-1}) and benefit cost ratio (4.55) were recorded by the Misthi which was significantly superior to all other cultivars. There was significant reduction in the economic returns with delay in sowing. The highest gross returns (Rs 113095), net returns (Rs 89,786 ha^{-1}) and benefit cost ratio (4.84) were recorded with October I FN which was significantly superior to all other times of sowing.

The present findings indicate that among the cultivars Misthi cultivar recorded its superiority over Sugar 75 and Madhuri. Each date of delayed sowing after October I FN progressively and significantly decreased the growth, yield attributes, yield and economic returns. Such information can be used in planning of future strategies for higher productivity of sweet corn.

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