

A SHORT NOTE

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EFFECT OF DIFFERENT SEED TREATMENTS OF THE CANE YIELD OF A SUGARCANE VARIETY Col 54.

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The effect of different seed treatments on the cane yield of the sugarcane variety Col. 54 was studied on a heavy loam soil in two experiments. In one experiment the treatments consisted of top, middle, bottom and mixed portions as seed and in the other experiment treatments consisted of dry seed versus the wet seeds (soaked in water, cow urine and KMnO₄ solutions). The seed taken from the top portion of the cane appeared to be better and gave higher cane yield per acre. Pre-sowing treatment of sugarcane setts with various chemical solutions did not improve the overall cane yield per acre.

INTRODUCTION

Sugarcane (*Saccharum officinarum*) is an important sugar and cash crop of Pakistan in the canal irrigated areas. Unfortunately, the average cane yield per acre in Pakistan is very low and there is a great scope to increase cane yield manifold by adopting, among other things the most efficient cultural methods. The sugarcane crop is propagated vegetatively and is afflicted with the problems of poor germination under arid conditions of Pakistan, particularly where the planting of the crop is delayed. An improvement in the germination rate of cane can raise the average acre yield substantially. Seed treatment is often necessary to improve germination and to check seed and soil-borne diseases. The available information shows that setts soaked in water for 48 hours increased the germination by 100 % (Yousuf, 1960). Alexander (1962) found that immersion of the cane cuttings in water at 52°C for 20 minutes resulted in a rapid development of all buds and growth of young cane stool. Yousuf (1960) further reported that the quality of seed material was as important as the seed rate, in obtaining better

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germination. The top 1/4th to 1/2 portion of the sugar cane plant gave good germination. This increase in germination may be due to high nitrogen contents in the top setts (Rahim, 1960, and Yousuf, 1960). The most succulent top setts could not give better results in dry conditions than bottom and mid-portion setts and it may be worthwhile to fertilize a seed crop 4-6 weeks before cutting. The present study was initiated to collect more dependable information on this subject.

MATERIALS AND METHODS

The experiment was laid out at the Agronomy Farm, University of Agriculture, Lyallpur, in a randomized complete block design with four replications. The plot size measured 1/80th of an acre.

For one experiment the seed was taken separately from the top, middle and bottom portions as against the mixed seed taken from the entire cane plant. In the second experiment, the seed was soaked in different solutions, i.e. water, cow urine and 2% KMnO_4 before sowing. The crop was planted in the first week of March. L.S.D. values at the 5 per cent probability level were used to compare the treatment means.

RESULTS AND DISCUSSION

The results are presented in Tables 1 and 2.

TABLE 1. *Comparison of the treatment means.*

Treatment	Cane Yield per acre (maunds)
Top Seed	1458.80
Middle Seed	1342.80
Bottom Seed	1252.80
Mixed Seed	1117.68
L.S.D.	N.S.

N.S. = Non-significant

TABLE 2. *Comparison of the treatment means*

Treatment	Cane Yield per acre (maunds)
Dry Seed	897.84
Soaked in Water	673.20
Soaked in Cow Urine	663.84
Soaked in KMnO_4 (2%)	728.64
L.S.D.	221.47

The data presented in Table 1 revealed that the yield level was appreciably high in all the treatments. The highest yields of 1458.00 and 1417.68 maunds of cane per acre were obtained in plots planted with top and mixed seed, respectively, although all the treatments were statistically non-significant. Similar results were obtained by Yousuf (1960) and Rahim (1960). As regards the seed treatments (Table 2), dry seed gave significantly higher yield of stripped cane per acre than the seed soaked in water or in urine but did not differ significantly from the seed soaked in 2% KMnO_4 solution. In the light of these results, one might speculate that the pretreatment of the cane seed with various chemical solutions is ineffective in increasing the overall cane yield per acre. However, the germination rate may be accelerated in certain cases.

LITERATURE CITED

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