

## **A Comparative study on the effect of Stripping and Non-stripping in Sugarcane Marcotte**

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### **ABSTRACT**

An experiment on sugarcane marcotte with stripped and non-stripped stalks was performed at Sugarcane Research & Training Institute during 1984-85 season to find out the effect on number, length and weight of root and on the survival of excised stalks. Sawdust and transparent polythene sheet were used as rooting media and wrapping material, respectively. In all, 72 stalks of B.O. 70 variety were marcotted of which 36 were stripped one month ahead of marcotting. Fifty percent of the marcotted stalks were excised after 3 weeks and the remaining 50 percent after 4 weeks of marcotting. Marcotting under stripped condition showed no significant effect on any parameter. Hence, canes of B.O. 70 variety do not require prior stripping before marcotting under Bangladesh agro-climatic condition when sawdust is used as rooting media.

### **INTRODUCTION**

Marcotting in sugarcane is one of the important phases for hybridization programme. It is essential to develop above ground root system in field which later on keeps the excised stalks alive under crossing shed for a period of time. This technique is superior over the solution and field techniques for seed setting (Saha *et.al.* 1984). Inadequate root growth & development reduces survival of the excised stalks and seed setting which causes a great loss to the hybridization programme. Considering the importance of the work, an experiment on stripped and non-stripped stalks was conducted to see the effect of stripping before marcotting on number, length and weight of root, and survival of the excised stalks of sugarcane.

### **MATERIALS AND METHODS**

Sawdust and transparent polythene sheets were used as rooting media and wrapping material, respectively. Besides, B.O. 70 was used as variety for the marcotting and rope was used as tying material. For this purpose sawdust was first soaked in water and lower part of polythene sheets having the size of 55 cm × 55 cm were tied with rope. The soaked sawdust was then placed inside the sheet surrounding the stalks. Altogether 72 stalks were marcotted on 20th October, 1985. Before this operation 50 percent of the stalks, i.e., 36 stalks were stripped one month ahead. Marcotting was done about one feet above the ground level. After three weeks of marcotting 36 stalks (18 from stripped and 18 from non-stripped group) were excised of which 18 stalks (nine from each group) were placed in running tap water to note their survival and the rest 18 stalks (9 from each group) were used for counting the number and measuring the length and weight of root. The total number of roots and twenty longer roots of the upper two nodes were taken into consideration for the purpose. The survival days were recorded from the placement of the stalks in water to the death of the flag-leaf. The remaining 36 stalks were excised after four weeks of marcotting and similar procedure

was followed to record the data. The average data of all the parameters were statistically analysed and the differences were evaluated by DNMR test.

## RESULTS AND DISCUSSION

Mean number of root showed no significant difference between stripped and non-stripped stalks of marcotted canes (Table 1). Insignificant difference was also noted between the mean root number of three and four weeks after excision of marcotted stalks. The results supported the findings of Miah *et al.* (1985) where no difference in root number between moist and natural condition was reported, and also between the roots of three and four weeks after excision of marcotted stalks. The insignificant difference between the stripped and non-stripped canes suggests for marcotting of B.O. 70 without stripping under Bangladesh agro-climatic condition.

The results in Table 1 show that the length of roots developed in the marcotted stalks under stripped condition was not significantly longer than that of the roots in the non-stripped stalks. In case of different excised time, the root length after 4th week showed no significant difference than the root length of 3rd week. Miah and Mannan (1983) and Miah *et al.* (1984) obtained the similar result for length after 3rd and 4th week of marcotting under natural condition.

**Table 1. Mean number, length and weight of root, and survival of the excised stalks of sugarcane marcotted under stripped and non-stripped conditions.**

| Parameters studied     | Time of excising | Stripped stalks | Non-stripped stalks | Mean    |
|------------------------|------------------|-----------------|---------------------|---------|
| Number of root         | After 3 weeks    | 46.22 a*        | 42.72 a             | 44.47 a |
|                        | After 4 weeks    | 48.39 a         | 45.11 a             | 46.75 a |
|                        | Mean             | 47.30 a         | 43.91 a             |         |
| Length of root (cm)    | After 3 weeks    | 14.42 a         | 18.06 a             | 16.24 a |
|                        | After 4 weeks    | 22.94 a         | 31.32 a             | 27.13 a |
|                        | Mean             | 18.68 a         | 24.69 a             |         |
| Weight of root (g)     | After 3 weeks    | 4.19 a          | 7.81 a              | 6.00 a  |
|                        | After 4 weeks    | 8.78 a          | 11.18 a             | 9.98 a  |
|                        | Mean             | 6.49 a          | 9.49 a              |         |
| Survival of the stalks | After 3 weeks    | 86.11 a         | 80.11 a             | 83.11 a |
|                        | After 4 weeks    | 87.33 a         | 94.78 a             | 91.50 a |
|                        | Mean             | 86.72 a         | 87.45 a             |         |

\*Figures in columns accompanied by similar letter(s) do not differ significantly at 0.05 level as per DNMR test.

The weight of root produced by stripped stalks showed no significant difference from the weight of non-stripped stalks (Table 1). The root weight obtained after 4th week also showed no significant difference from that of the roots weight obtained after 3rd week. Similar result was reported by Miah *et al.* (1984). They found insignificant difference between the root weight of 3rd and 4th week under natural condition.

The results on survival of the excised stalks did show insignificant difference between the stripped and non-stripped stalks (Table 1). The results of the two excising dates, 3rd

and 4th week after marcotting also showed no difference statistically on survival of the excised stalks. Similar result was obtained by Miah et al. (1985) under natural and moist condition. It appears that the stripping of cane before marcotting has no effect on the survival of the excised stalks. Therefore, it is clear that the stripping of canes before marcotting has no effect on number, length, and weight of root. It has no effect on mortality of canes either.

Hence, it is suggested that the canes for hybridization purposes can be marcotted without prior stripping.

#### REFERENCES

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