

Effect of Removal of Male Bud (NAVEL) on Development, Maturity and Yield of Robusta Banana

By

R. S. ALAGIAMANAVALAN¹ and R. BALAKRISHNAN²

ABSTRACT

Studies were undertaken on the effect of removal of male bud immediately, 10 days, 20 days and 30 days after the end of the female phase on fruit development in banana cultivar 'Robusta'. The removal of male bud at any stage did not influence the duration of the bunch. The bunch weight was slightly less in all the male bud pruned plants. Pruning the male bud registered a slight increase in length and girth of fruits when the male bud was removed soon after the female phase.

INTRODUCTION

The male phase in banana develops after the completion of the female phase in certain cultivars and in some others after the completion of the neutral phase. The male bud is often pruned off in commercial banana plantations to promote better bunch development but the removal of the male bud and its consequent effect on the bunch and yield are not adequately supported by data. Hence the attempt is made in the present study to assess the effect of removal of male bud (navel) on bunch characters.

MATERIALS AND METHODS

The trial was undertaken in a randomised block design with the cultivar 'Robusta'. The male bud was removed soon after completion of female phase, 10, 20, and 30 days after completion of the female phase, with a view to study the effect on maturity of bunch, yield

and fruit characters. The male bud was allowed till the harvest of the bunch for purposes of comparison.

RESULTS AND DISCUSSION

Effect on maturity of bunch

Pruning the male bud did not appreciably reduce the duration from shooting to maturity. However, a reduction of 1.22 per cent was recorded in the treatment where the male bud was removed 20 days after the completion of female phase (Table 1).

A reduction of eight days in the duration in 'Karpura Chakkarakeli' syn. Poovan (Venkatesam and Rangacharlu, 1964), a two per cent reduction in 'Gros Michel' variety (Wardlaw, 1961) and extension of maturity by 18 days in 'Dwarf Cavendish' when male buds were allowed to grow (Bhakthavatsalu *et al.*, 1971) were reported while Lumsden (1962) as quoted by Venkatesam and

1. Research Assistant, 2. Assistant Horticulturist, Department of Horticulture, Tamil Nadu Agricultural University, Coimbatore-641003.

TABLE 1. Effect of pruning of male bud on maturity, weight of bunch and fruit characters

Days from female phase to male bud	Maturity of bunch		Weight of bunch		Fruit length		Fruit girth	
	Mean number of days from shooting to maturity	Increase or decrease over control (Per cent)	Mean weight (kg)	Decrease over control (Per cent)	Mean length (cm)	Increase over control (Per cent)	Mean girth (cm)	Increase over control (Per cent)
0	109.86	+ 3.29	34.54	1.71	24.76	12.19	14.03	12.69
10	107.13	+ 0.72	31.96	9.05	24.01	8.79	13.39	7.55
20	105.06	— 1.22	33.94	4.41	22.59	2.36	12.57	0.96
30	108.39	+ 1.91	33.41	4.92	23.14	4.85	13.22	6.18
Control	106.36	—	35.14	—	22.07	—	12.45	—

Rangacharulu (1964) on the removal to 'navel' 40 to 55 days after shooting revealed no significant difference between the treated and untreated plants.

Effect on yield

In all the treatments the weight of the bunch was reduced considerably. In 'Dwarf Cavendish' the bunches in which the male buds were pruned were heavier by 3 kg over control (Bhakthavatsalu *et al.*, 1971). The bunch weight was less than the control in the present study indicating that the practice of removal of male buds conferred no better stimulus to the development of the bunch.

Effect on finger length

The finger length in all the treatments was more than control. A highest increase of 2.69cm accounting for 12.19 per cent was recorded when the male bud was pruned soon after the female phase. Venkatesam and Rangacharulu (1964) however reported an increase in both the length and the girth of fruit

when the male bud was pruned which Lumsden's (1962) studies showed no effect on fruit length due to removal of male bud. Thus it appeared that pruning the male bud conferred a slight increase in fruit length which however was not appreciable.

Effect on fruit girth

A significant increase in the girth of the fruit was recorded when the male bud was pruned in different stages. The increase in girth of the fruits where the male bud was removed soon after the female phase, was of the order of 1.58 cm per fruit (12.69 per cent). Similar results were reported by Simmonds (1966) and Venkatesam and Rangacharlu (1964).

ACKNOWLEDGEMENT

The authors are thankful to the suggestions offered by Messrs. S. Muthuswamy and L. Veerannah of the Department of Horticulture, Tamil Nadu Agricultural University.

REFERENCES

- BHAKTHAVATSALU, C. M., N. RAMU, T. T. KALIAPERUMAL, C. CHINNADURAI and S. CHOCKALINGAM. 1971. Achievements on certain varietal and agronomical investigations in banana. Paper presented at the All India Fruit Workshop at Tamil Nadu Agricultural University, Coimbatore.
- LUMSDEN, V. R. 1962. Annual Report-1961. Banana Board Research Department, Jamaica.
- SIMMONDS N. W. 1966. Banana. Longmans, London.
- VENKATESAN, C and V. S. RANGACHARLU. 1964. Studies on the pruning of male bud in banana. *Indian J. Hort.* 21: 232-4.
- WARDLAW, C. W. 1961. Banana Diseases. Longmans, London.

when the male bud was pruned which Lumsden (1962) studies showed no effect on fruit length due to removal of male bud. Thus it appeared that pruning the male bud contained a slight increase in fruit length which however was not appreciable when compared with control. Effect on fruit girth. A significant increase in the girth of fruit was recorded when the male bud was pruned in different stages. The increase in girth of fruit where the male bud was removed soon after the female phase was of the order of 1.58 cm per fruit (12.69 per cent). Similar results were reported by Simmonds (1966) and Venkatesan and Rangachari (1964). ACKNOWLEDGEMENT. The authors are thankful to the suggestions offered by Messrs. S. Muthuswamy and L. Venkatesan of the Department of Horticulture, Tamil Nadu Agricultural University, Coimbatore.

Rangachari (1964) on the removal to navel 40 to 55 days after shooting revealed no significant difference between the treated and untreated plants. Effect on yield. In all the treatments the weight of the bunch was reduced considerably. In Dwarf Cavendish, the bunches in which the male buds were pruned were heavier by 3 kg over control (Bhakthavatsalu et al., 1971). The bunch weight was less than the control in the present study indicating that the practice of removal of male buds conferred no better stimulus to the development of the bunch. Effect on finger length. In all the treatments the finger length in all the treatments was more than control. A highest increase of 2.63 cm accounting for 12.19 per cent was recorded when the male bud was pruned soon after the female phase. Venkatesan and Rangachari (1964) however reported an increase in both the length and the girth of fruit.