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Double Planting in 'Robusta' Banana

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ABSTRACT

To study the efficiency of double planting as a means of increasing production in 'Robusta' banana, a trial was conducted. The double planting of 'Robusta' has increased returns by 79.40 per cent.

INTRODUCTION

The importance of Cavendish bananas in the world trade was felt only after the severe damage to 'Gros Michel' banana by Panama disease. Of the bananas, entering the export trade, about 63.0 per cent was 'Gros Michel' and 35.0 per cent was Cavendish bananas (Simmonds, 1966). The picture has now changed and Cavendish bananas have assumed greater importance in world trade. In India, Cavendish clones are cultivated throughout the country. 'Dwarf Cavendish' is being grown on a large scale both in Tamil Nadu and other states. Double planting system was adopted for 'Dwarf Cavendish' in certain areas to get increased yields. With emphasis on Cavendish bananas for export, 'Robusta' a semi-tall mutant of 'Dwarf Cavendish' with better yield potential is gaining importance. Generally 'Robusta' banana is cultivated in a single planting system. In order to study whether double planting will augment yield and income from an unit area, a trial with 'Robusta' banana was laid out at the Department of Horticulture, Tamil Nadu Agricultural University, Coimbatore and the results are presented hereunder.

MATERIALS AND METHODS

The experiment was laid out in a Randomised Block with 13 replications, adopting a spacing of 2.4 x 1.8 m for both the systems of planting *viz.*, single and double. In double planting system, two suckers were planted in adjacent pits between rows spaced 30 cm apart. In view of the increase in population under double planting, the

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dose of manures and fertilizers was doubled; all other cultural operations were similar. Data on grade and weight of the bunches and duration of the crop were collected and statistically analysed. The economics of production under the two systems of planting were estimated and compared.

RESULTS AND DISCUSSION

Grade of the bunches: In both the systems of planting of 'Robusta' banana, the grade of the bunches was recorded. Generally in 'Robusta' banana the number of hands in a bunch varies from 9 to 11. Simmonds (1966) assigned the grade for banana bunches based on the number of hands in them. A contribution of $\frac{1}{4}$ was given to the mean grade, if the bunch contained six hands, $\frac{1}{2}$ to seven hands, $\frac{3}{4}$ to eight hands and full grade (1) to nine hands or more in a bunch. Despite increase in population per unit area the bunches obtained in the double planting system were of higher grade (82.37 per cent) than those in the single planting system (76.28 per cent), but they recorded lesser mean bunch weight (Table 1).

TABLE 1. Grade of banana bunches

No. of hands	Single planting		Double planting	
	No. of bunches	Mean grade	No. of bunches	Mean grade
6	3	0.75	2	0.50
7	8	4.00	7	3.50
8	12	9.00	35	26.25
9 and more	16	16.00	34	34.00
Total	39	29.75	78	64.25
Grade (per cent)	76.28		82.37	
Mean bunch weight (kg)	21.42		18.98	

Weight of the bunches: Mature bunches were harvested in both the systems of planting. The data on bunch weight are presented in Table 2. The data showed that double planting system recorded overall higher yields per clump of two plants than single planting system where only one bunch could be got. On an average each bunch weighed 18.98 kg (i.e. 37.96 kg per clump of two plants) in double planting while it was 21.42 kg in the single planting. It is obvious, however, that due to the competition for nutrients, light and water between the two plants in close proximity, reduction in individual bunch weight was noticed in double planting.

TABLE 2. Duration, bunch weight per clump and economics of production of 'Robusta' banana in single and double planting systems

Particulars	Single planting	Double planting
Bunch weight (kg)	21.42	37.96
Duration (days)	415.46	441.79
Production cost/hectare (Rs.)	7900	13340
Estimated receipt/hectare (Rs.)	28820	51080
Net profit/hectare (Rs.)	20920	37740
Per cent increase		80.40

Duration of the crop: Harvest of mature bunches was commenced 395 days after planting in single planting and 417 days in double planting. Harvesting was completed in 415.46 days and 441.79 days in the single and double planting system respectively (Table 2). It may be seen that the duration was slightly extended (26.33 days) under double planting system, perhaps due to the competition between two adjacent plants for light and nutrients. This is of no consequence when increase in production to the tune of 80.40 per cent was taken into account from one hectare.

Economics of production: The economics of production of bananas in one hectare are given for the single and double planting systems in Table 2. No doubt in the double planting system, the cost of cultivation was higher due to increase in the cost of planting material (double the number), fertilizers, pesticides, props and harvesting. In the single planting system a bunch weighing 21.42 kg fetched Rs. 12.85 while in the double planting it was Rs. 22.75 from a clump which yielded 37.96 kg on an average. Hence the denser double planting of 'Robusta' has given an increased return of Rs. 16820 from one hectare which amounts to 80.40 per cent higher returns over the traditional single planting.

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REFERENCES

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