

which tends to reduce the pathogen population with subsequent reduction in disease incidence. So it was concluded that one pre monsoon application of metalaxyl MZ combined with neem cake 1 kg/vine and pre and post monsoon soil and foliar application of *P. fluorescens* was effective for the management of foot rot incidence in the export oriented and exchange earning crop, "The black gold".

The cost benefit ratio was the highest (1:2.14) in pre and post monsoon soil and foliar application of *P. fluorescens* and followed by combination of this treatment with bordeaux mixture (1%) pre monsoon soil and foliar application (1: 1.74)

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## Research Notes

# Influence of pruning levels on crop regulation in tamarind (*Tamarindus indica* L.) cv. PKM 1

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Tamarind is a productive tree spice crop and one of the most popular trees found throughout India as stray plantation or avenue. The fruits are used for various culinary purposes all over the country. The wood is used in cartwheels, rice pounders, oil mills, etc. The bark is used in tanning; the tender leaves and flowers are eaten as a vegetable. The decoction of bark is useful in diarrhoea. The seeds are

rich in pectin. Though it is a deciduous crop and has the tendency of alternate bearing, crop load regulation has not yet been taken up. Pruning is necessary to have regular crop load every year. Hence, the trial was conducted to study the effect of different levels of pruning on fruit yield and quality in tamarind. An experiment was conducted in 15 years old tamarind cv. PKM 1 trees at Horticultural College and

**Table 1.** Effect of different levels of pruning on growth, yield and quality parameters in tamarind

Treatments	Tree height (m)	Plant spread		Fruit length (cm)	Fruit breadth (cm)	Yield kg/tree	Pulp recovery (%)	Tartaric acid (%)
		EW	NS					
T <sub>1</sub>	6.80	8.31	8.33	7.28	2.58	201.00	40.50	9.40
T <sub>2</sub>	7.94	9.74	9.67	8.45	3.05	244.50	43.75	10.50
T <sub>3</sub>	7.63	9.33	9.22	8.25	2.96	209.50	41.75	10.35
T <sub>4</sub>	7.47	9.25	9.12	8.30	2.85	202.00	41.25	10.23
SEd	0.0823	0.0533	0.0373	0.1693	0.0904	3.6405	0.8015	0.0638
SD	0.1863	0.1206	0.0843	0.3829	0.2045	8.2356	1.8131	0.1443

Research Institute, Periyakulam. The pruning treatments were T<sub>1</sub> - Control (unpruned), T<sub>2</sub> - Light pruning, T<sub>3</sub> - Medium pruning and T<sub>4</sub> - Severe pruning. Light pruning was done by leaving 5<sup>th</sup> branching shoot on the tree and removing only terminal branches. Medium pruning was carried out by leaving 4<sup>th</sup> branching shoot on the tree and removal of remaining branches. Severe pruning consisted of leaving 3<sup>rd</sup> branching shoot on the tree and removal of remaining portion. The pruning operations were carried out after the harvest of fruits (i.e.) during April. The observations namely tree height, plant spread, fruit length, fruit breadth, fruit yield, pulp recovery and tartaric acid were recorded and the data were subjected to statistical scrutiny.

Data on tree height, plant spread, fruit length, fruit breadth, fruit yield, pulp recovery and tartaric acid are presented in Table 1. Pruning treatments at all the three levels significantly influenced the growth and yield parameters than the control. The highest plant height (7.94 m) and plant spread (EW - 9.74 m and NS - 9.67 m) recorded in the mildly pruned trees (T<sub>2</sub>), which may be attributed to the hormonal stimulus. In this context, Gupta and Singh (1977) also reported that pruning induces growth through the hormonal stimulus in ber. The reason attributed is pruning arrests the apical dominance and prevents the correlative bud inhibition. Thereby induces the lateral growth through the hormonal stimulus. The promotion of lateral buds was stimulated in higher rate at lower levels of auxin and optimum levels of cytokinin. This might be the cause for the greater number of branches and more plant spread observed in the present investigation which ultimately resulted in higher fruit yield.

As regards the fruit length, fruit breadth and fruit yield, significant differences could be observed among the treatments. The mild pruned trees (T<sub>2</sub>) recorded the highest fruit length (8.45 cm), fruit breadth (3.05 cm) and pod yield (244.25 kg/tree). The unpruned trees (control) recorded the lowest value. Lal and Prasad (1980) also reported that pruning induces flowers in ber through the hormonal stimulus, which in turn increases the fruit size and yield. This may be attributed to the fact that high carbon content and low nitrogen content coupled with hormonal balance in the shoots and leaves produced from the lightly pruned trees might have resulted in more yields.

Among the treatments, the light pruning (T<sub>2</sub>) i.e. pruning done by leaving 5<sup>th</sup> branching shoot on the tree and removing only terminal branches registered significantly higher pulp recovery (43.75%) and tartaric acid (10.50%) than the unpruned trees. The increase may be attributed to the hormonal stimulus. This is in close conformity with the findings of Singh *et al.* (1978). There was no incidence of pest and diseases in case of pruned trees.

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