

Disease Surveillance on 'Koleroga' of Arecanut caused by *Phytophthora arecae*

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Abstract

'Koleroga' of arecanut occurs during south west monsoon in all the areca growing areas where there is heavy rainfall, high humidity and a temperature range of 22-29°C. To study the correlation between the climatic factors and occurrence of the disease in different areas a proforma was evolved and the information was collected. The disease appeared 12-20 days after the onset of monsoon in different areas under favourable conditions. There was no indication to show that the disease spreads from one area to another.

Introduction

Fruit rot or *Mahali* or *Koleroga*, a serious disease of arecanut caused by the fungus *Phytophthora arecae* (Coleman) Pethybridge, occurs during the south west monsoon season. The disease occurs in all high rainfall areas of the areca growing tracts and is more severe in plantations situated in valleys and those surrounded by thick vegetation (Kamat, 1953) or in plantations densely planted with intercrops. The present study was undertaken to find out the correlation between the onset of the monsoon and the occurrence of the disease and also to study the pattern of spread of the disease from one region to another so as to develop a forecasting system.

Materials and Methods

The study was undertaken during 1981 and 1982. A proforma was evolved to elicit information on the weather conditions such as the date of onset of monsoon,

number of rainy days, maximum and minimum temperature, relative humidity, date of occurrence of the disease etc. and was sent to the District Agricultural Officers. This proforma in turn was sent to the officers at taluk levels. The weather data for these regions were also obtained from the Indian Institute of Tropical Meteorology, Poona. The data obtained for two years were tabulated and analysed.

Results and Discussion

The south west monsoon sets in Kerala and coastal Karnataka during 1 - 10 June (communication from I.I.T.M., Poona). The information collected from different locations indicated that the disease developed within 12 - 20 days after the onset of monsoon (Table 1). But in extreme cases, the interval between first monsoon shower and first incidence of disease varied from 24 to 56 days. This can be attributed to irregular rains and the wide gap between first shower and actual monsoon and also due to less rainfall. The disease occurred in

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isolated locations and there was no regular pattern in the spread of the disease. During the south west monsoon period the relative humidity was more than 95 per cent and temperature ranged from 22 - 29°C which is congenial for the development of the disease. (Koti Reddy and Anandaraj, 1980). The simultaneous occurrence of the disease in several places indicates that the inoculum does not move from one region to another but may be present in the areca growing areas endemically.

The present study shows that the disease develops within 15 - 20 days under favourable conditions after the onset of south west monsoon and there was no regular pattern in the spread of the disease.

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Table 1. Incidence of *Koleroga* in different locations

State	District	Location	Date of 1st rain	Date of occurrence of disease	Period between 1st rain & disease occurrence (days)	
Kerala	Ernakulam	Vengola	30-5-1981	14-6-1981	15	
		Kuthiathode	16-5-1982	28-5-1982	12	
		Valakam	30-5-1982	15-6-1982	16	
		Trichur	Kodungalloor	1-6-1982	12-6-1982	12
		Idukki	Udumbanoor	22-4-1981	12-5-1981	20
Karnataka	Dakshina Kannada	Mangalore	1-6-1981	18-6-1981	18	
		Sāmpaje	1-5-1981*	25-6-1981	56	
		Vittal	28-5-1981**	27-6-1981	30	
		Vittal	17-5-1982**	10-6-1982	24	

* Number of rainy days only 10 and was scattered

** Number of rainy days 10 and 11 respectively in 1981 and 1982

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