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OCCURRENCE OF *GLOEOSPORIUM ALBORUBRUM* ON RUBBER IN MEGHALAYA

In the Garo Hills of Meghalaya, *Gloeosporium alborubrum* Petch causing secondary leaf fall disease has been encountered on rubber occasionally. In this preliminary study, an attempt has been made to find out the incidence, seasonal occurrence and the extent of damage.

A survey was made in a five year old rubber plantation comprising of ten clones of *Hevea brasiliensis* at the Regional Research Station of the Rubber Research Institute of India at Tura, Meghalaya. Fifteen leaves were collected randomly from each clone at monthly intervals for a period of two years to assess incidence of the disease. Percentage disease index and defoliation were calculated for the individual clones. Leaf area covered by the pathogen was determined on the basis of the following arbitrary scale :

Table 1. **Percentage disease index due to *G. alborubrum* in different clones of *Hevea* during 1990-91.**

Clones	Year	March	April	May	June	July	August	Sept.	Oct.	Nov.	Mean (Transformed)
RRII 105	1990	5.3	3.9	5.3	5.3	3.9	1.9	1.3	0.7	0.7	3.14 (1.98)
	1991	0	1.3	1.7	2.7	1.7	1.9	0.9	0.7	0	1.21 (1.46)
RRII 118	1990	2.7	3.9	3.9	3.9	2.7	2.7	1.7	1.7	0.7	2.66 (1.93)
	1991	0.3	1.7	3.7	3.7	3.7	1.3	0.7	0.3	0	1.71 (1.58)
RRII 203	1990	6.7	5.3	5.3	3.9	4.6	0.9	0.7	0.7	0	3.12 (1.93)
	1991	0.7	0.7	2.7	3.3	1.7	0.7	0.3	0	0	1.49 (1.41)
RRIM 600	1990	5.3	5.3	6.7	5.3	3.9	2.7	0	0	0	3.24 (1.94)
	1991	0	1.7	1.7	2.7	2.7	1.4	0.7	0.7	0	1.29 (1.48)
RRIM 605	1990	5.3	5.3	5.3	3.9	3.9	1.7	0.7	0	0	2.90 (1.88)
	1991	0.3	2.7	4.6	4.4	2.9	0.7	0.3	0.7	0	1.84 (1.61)
PB 235	1990	3.9	5.3	3.9	3.9	2.7	1.3	1.7	0.7	0.7	2.68 (1.87)
	1991	0.3	2.7	3.3	4.1	2.7	2.7	1.3	0.3	0	1.93 (1.57)
PB 86	1990	5.3	4.4	5.3	1.3	1.9	1.9	1.3	0.7	0.7	2.53 (1.82)
	1991	0.3	2.7	3.9	4.6	2.3	1.3	0	0.3	0	1.71 (1.40)
PB 5/51	1990	5.5	5.3	3.9	1.3	1.3	0.7	0	0	0	2.00 (1.62)
	1991	0.7	1.7	4.9	6.7	3.9	0.7	0	1.7	0	2.26 (1.53)
GT 1	1990	3.9	5.3	5.3	3.9	2.7	1.3	0	0	0	2.49 (1.70)
	1991	0.7	1.7	3.7	3.3	2.7	1.3	0.3	0	0	2.52 (1.53)
Gl 1	1990	5.3	6.7	5.3	5.3	3.9	1.3	0.7	0.7	0.7	3.32 (1.94)
	1991	0.7	3.7	4.6	4.7	4.7	3.3	1.7	0.7	0	2.68 (1.85)

Table 2. **Climatological parameters**

Months	Year	Mean minimum temperature (°C)	Mean maximum temperature (°C)	Rainfall (mm)	Humidity (%)
March	1990	13.9	26.8	12.3	52
	1991	13.6	29.8	8.0	46
April	1990	15.3	27.7	8.8	65
	1991	19.4	29.6	82.0	47
May	1990	18.6	29.6	315.8	78
	1991	20.8	28.6	529.4	80
June	1990	20.0	29.0	332.6	84
	1991	23.8	29.1	365.6	83
July	1990	21.0	28.5	295.0	84
	1991	23.5	29.5	520.7	85
August	1990	17.5	29.5	143.9	79
	1991	22.4	30.1	115.7	83
September	1990	20.1	29.2	295.7	84
	1991	20.8	28.6	135.9	84
October	1990	18.2	27.7	388.2	76
	1991	17.8	28.7	86.4	76
November	1990	14.7	27.8	-	61
	1991	14.2	25.9	-	61

0 = leaves free from infection

1 = 1 to 10% leaf area infected

2 = 11 to 20% leaf area infected

3 = 21 to 40% leaf area infected

4 = 41 to 70% leaf area infected

5 = 71 to 100% leaf area infected

Percentage disease index (PDI) was calculated following McKinney (1923) :

$$PDI = \frac{\text{Class rating x Frequency class x 100}}{\text{Total no of leaves graded x Max rating}}$$

The mean monthly maximum and minimum temperatures, total rainfall and humidity (%) were recorded (Table 1). The results indicate that the occurrence of secondary leaf fall disease was very mild. Analysis of the data revealed that the incidence of the disease showed significant difference for different clones for both 1990 and 1991. Almost all the clones of *H. brasiliensis* were found to be infected irrespective of seasons except during the winter when natural defoliation took place. However, the disease recurred as soon as new flushes of leaves appeared in March-April. The fungus was abundant in the rainy seasons and the percentage disease index diminished when temperature and humidity were comparatively low (Tables 1 & 2).

The fungus causes small, circular, brown spots on the upper surface of the leaf. In severe infection defoliation of leaves may occur which leads to dieback of the shoot (Pillay *et al.*, 1980). In the present observations, however, it was found that the disease was so mild that it did not lead to any defoliation or dieback of the plants.

This pathogenic fungus occurs in the rubber plantations in both tropical and subtropical regions. The disease is severe

durig rainy season with high temperature and relative humidity .

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