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Survey on disease severity of mulberry (*Morus alba* L.)in different seasons of Aizawl district (Mizoram)

S. K. DUTTA, [1]M. D. MAJI, A.GHOSH, S. ROY CHOWDHURY, [2]B. CHOUDHURI, M. K. MAJUMDAR AND B. B. BINDROO

Central Sericultural Research and Training Institute, Central Silk Board, Berhampore, W.B.
[1]Regional Sericultural Research Station (Annex), Kalimpong, W.B., India
[2] Research Extension Centre, CSR&TI,Aizawl, Mizoram
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Aizawl as a rainfed area is located at 1132 meter above sea level (MSL). Total area of mulberry of Mizoram is 5100 hactere which caters 5593 sericulture families (mulberry) of the state, where mulberry varieties (S1 and S 1635) are cultivated as bush or as dwarf tree forms. Among the diseases of this locality powdery mildew (*Phyllactinia corylea*), myrothecium leaf spot (*Myrothecium roridum*) and leaf rust (*Perdiopsora mori*) are very common. Feeding of diseased leaves results poor cocoon crop and consequently reduction in the income of the rearers. Therefore timely management for control of disease and pests is prerequisite for harvesting healthy and nutritious leaves. Disease not only reduces leaf yield but also causes degradation in the quality (Quadri *et al.*, 999) and feeding of diseases leaves results prolonging of larval period (Noamani *et al.*, 1970 and Kumar *et al.*, 1993).

The study was carried in the three villages of Aizawl districts *viz.*, Khamrang, Dilkhan, and Seling. Occurrence of different disease severity in mulberry field of S1 variety at weekly intervals and day wise meteorological data was observed. At farmers field observations were made from 5 plants of a plot size, 20 meters / 20 meters. Out of 5 plants, 4 from corners and 1 from the centre of the plot were considered. Three branches of each plant were taken in to consideration. To measure the disease incidence, the total number of leaves and the number of leaves infected with disease are counted on the selected branches. The percent disease index (PDI) was calculated according to formula of FAO (1967).

$$PDI = \frac{\text{Sum of all individual rating}}{\text{Total no. of leaves observed x Maximum grade (5)}} \times 100$$

Table-1 showed that severity of P. mildew is significantly higher during October (3.8 PDI) and mostly continued from June to November and February to April and minimum severity was recorded during March (0.29 PDI).

Maximum severity of rust (15.79 PDI) was observed during November and the severity is >ETL during September to November. Low incidence of MLS (<ETL) was observed during June to August and April. During the period of survey average maximum and minimum temperature varies between 25 – 28 °C and 12 – 20 °C respectively, with maximum and minimum relative humidity ranging between 52 - 94% and 30 – 38% respectively.

Leu and Lee (1982) suggested suitable temperature for development of powdery mildew. Siddharamaiah (1978) suggested that both temperature and relative humidity has a role in the development of leaf spot diseases.

Development of leaf rust disease and dispersal of urediniospore was studied by Kumar *et al.* (2000). Roy *et al.* (1991) had studied global status of powdery mildew in Citrus species.

Table 1: Month wise different disease severity (PDI Value) of Aizawl district

Month	PMLD	LR	MLS
January	-	-	-
February	2.41	-	-
March	0.29	-	-
April	0.38	1.16	1.27
May	-	-	-
June	1.54	1.47	1.57
July	1.4	1.57	1.75
August	1.43	1.52	1.64
September	1.36	10.77	-
October	3.8	11.16	-
November	2.79	15.79	-
December	-	-	-

Climatic condition of Aizawl was found congenial for the development of powdery mildew, rust disease and myrothecium leaf spot disease.

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Short Communication

Email: dutta_sandipkumar@yahoo.in