

Short Communication

A RECORD OF LEAF SPOT DISEASE OF JACK FRUIT TREES BY *COLLETOTRICHUM GLOEOSPORIOIDES* PENZ. FROM BANGLADESH

Jack fruit (*Artocarpus heterophyllus* Lamk.) is an important fruit tree of Bangladesh. Fruit rot, pink disease, brown leaf spot, root disease, die-back and canker are common fungal diseases of jack fruits in Bangladesh (Parham 1942; Vaahall 1925; Batista and Vital 1954; Park 1937; Rahman *et al.* 1987).

A severe leaf spot disease of jack fruit was observed in different areas of Chittagong district during February and March, 1985. The symptoms of leaf spot disease of jack fruit were observed throughout the growing season. The disease initiated with the development of small light brown lesion on the upper surface of the leaves and became dark brown in colour. The lesions were usually round but later on became irregular due to coalescence of two or more spots. A fully developed spot possessed a greyish brown central region surrounded by purplish brown margin (Fig. 1). The diseased and healthy area was demarcated by a prominent yellow halo. The central greyish region remains covered with abundant black dots indicating the acervuli of the fungus (Fig. 2). This was the most characteristic symptom of the disease. The number of spots varied from one to many on a leaf. The old leaves had more lesions than young ones. The spots were usually 5. to 10. mm in diameter. Early defoliation occurred due to extensive spotting. In the present study, an attempt was made to find out the causal organism of the

disease and relative susceptibility of leaves.

Diseased leaves were collected from different areas of Chittagong district for isolation of the associated pathogen. The symptoms of the disease were recorded carefully throughout the year. Fungi were isolated from the surface sterilized infected leaves on PDA medium. The pure culture of the pathogen was indentified as *Colletotrichum gloeosporioides* Penz. by the authors and subsequently authenticated at the CAB International Mycological Institute, U.K.

In vitro pathogenicity test of the isolated fungus was carried out on four sets of detached healthy leaves having 15 leaves in each set. Two sets of leaves were inoculated by pricking and two sets were inoculated unpricked. One of the two pricked sets was inoculated with mycelial block and other with spore suspension. Unpricked leaves were also inoculated with mycelial block and spore suspension. Proper control sets were maintained with pricked and unpricked leaves and they were inoculated with sterile agar block and water only. All the inoculated leaves were kept in perforated polyethylene bags. These were sprayed with sterile water whenever necessary. Symptoms produced after 10 days were compared to those occurred under natural conditions, and the pathogen was reisolated from the artificially inoculated leaves.

Mature, middle aged and young leaves were also inoculated to observe their relative susceptibility against the pathogen. The pricked healthy leaves were inoculated with seven days old mycelial block of the fungus in the method as has already been described. Symptoms produced after nine days were compared to those produced in natural conditions. Four scales were used to evaluate the disease intensity. These were 0-leaves healthy; 1-leaves moderately resistant (i. e. upto 25% of leaf area diseased); 2-leaves susceptible (i. e. 26-50% of leaf area diseased) and 3-leaves highly susceptible (i. e. 51-100% leaf area diseased).

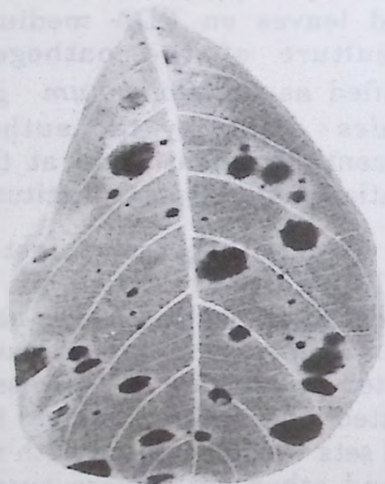


Fig. 1 : Infected leaf showing greyish brown spots.

The results on the pathogenicity test revealed that *C. gloeosporioides* produced the typical symptoms of leaf spot disease of jack fruit. The sign of infection started after five to seven days of inoculation. Maximum infection (86.76%) was found on pricked leaves inoculated with mycelial blocks. Moderate infection (60.00%) was found on unpricked leaves inoculated with mycelial blocks. The pricked leaves inoculated with spore suspension was found to develop less

infection (33.33%). No infection was recorded from unpricked leaves inoculated with spore suspension and on the control sets.



Fig. 2 : Infected leaf showing black dots indicating the acervuli of the fungus.

Inoculation on the leaves of different ages indicated that all types of leaves were susceptible to *C. gloeosporioides*. Mature old leaves were found to be highly susceptible (75.56%), followed by middle aged leaves (53.33%) and young leaves (35.56%).

The results of isolation from the diseased tissues and the pathogenicity tests indicated that *C. gloeosporioides* is the causal organism of leaf spot of jack fruit. Relevant available literatures show that *C. gloeosporioides* obtained in the present study has not hitherto been recorded in jack fruit trees from Bangladesh, but the fungus was isolated from other plants like mango (Ramakrishnan and Srivastava 1967), citrus and rubber (Rangaswamy 1979).

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