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A LEAF SPOT DISEASE OF *ARTOCARPUS INCISA* L

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A leaf spot disease of *Artocarpus incisa L.* (Bread fruit plant) was noted in the Agricultural College Farm, Vellayani, during June 1970 and it was found to be caused by *Colletotrichum gloeosporioides* Penz. Acervuli of the organism with conidia and setae could be observed on the infected regions of the leaves. This appeared to be the first instance of a leaf spot disease of A. incisa being caused by C. *gloeosporioides.* Earlier, a leaf spot caused by *C. artocarpi* Del, had been recorded from Hawaii (Anonymous 1960). Results of some studies made on *C. gloeosporioides* are presented in this paper.

Symptoms

Symptoms of the disease first appeared as reddish-brown spots on the lamina of the leaf. They soon enlarged into oblong chocolate brown spots which later spread and formed bigger patches. They finally became greyish-white in colour surrounded by a dark brown band of tissues. Numerous acervuli could be observed as minute black dots on both surfaces of the leaves (Fig. I). The central necrotic areas of the spots broke off and fell, forming shot-holes in course of time. When the infection started from the margins, its spread was rapid and affected large portions of the lamina. The necrotic areas broke off and the leaves Were disfigured. The symptoms were generally noted on the older leaves.

The causal organism

The causal organism was isolated from newly infected spots and brought into culture. It was purified by single spore isolations and maintained on potato-dextrose agar medium (PDA) at room temperature. Pathogenicity of the fungus was tested on healthy leaves of the host plant. For this the leaves were first surface sterilized with 0.1 percent mercuric chloride solution and washed thoroughly with sterile water. Then injuries were caused on them by pin pricks and by gently rubbing the surface with cotton wool. Mycelial bits and conidia from 10 days old culture were placed on the injured area and covered with moist cotton. Injured uninoculated areas on the leaves, swabbed with moist cotton were kept as control. Both the lots were then kept for 48 hours in moist chambers.

Fig 1 A

Fig. I Leaf of bread fruit plant showing necrotic areas with acervuli

The symptoms of the disease appeared as small brown lesions within 4 to 5 days on the inoculated leaves. The fungus was reisolated from the incoulated leaves and it was found to be identical with the original isolate. In the control, there was no infection.

The fungus grew profusely on PDA and the mycelium was whitish in colour. As the culture grew old, the mycelium turned greyish white and pink slimy mass (acervuli) appeared, scattered over the mycelial growth. Conidia were hyaline, cylindrical, and continuous with rounded ends and characteristic constriction in the middle. On PDA, they measured 9.9 to 19.8 μ X 4.13 to 6.6 μ while on the infected leaves they measured 9.9 to 14.03 μ X 4.13 to 6.6 μ • In culture the fungus did not produce setae. The setae formed on the host measured 51.15 to 82.5 μ X 3.3 to 4.95 μ with 2 to 3 septa and a swollen base.

Host range

The pathogenicity of the organism on other plants was tested by inoculating them as in the case of the bread fruit tree. In the case of chillies, fruits were used for the pathogenicity trials. The results of the trials are given in Table 1. It is indicated that the organism could infect *Mangifera indica L, Persea americana* Mill., *Anona* Sp. and *Plumaria rubra* L. However, *Gomphrena decumbens* Jacq., *Artocarpus integrifolia L,* and chilli fruits were not susceptible to the organism.

Table I

Pathogenicity of C. *gloeosporioides* to different plants

Name of host tested	Number of plants inoculated/ infected	Percentage infection	Number of days taken for symptom development
Mangifera indica L.	7/7	100	3
Persea *americana* Mill.	7/7	100	4
Anona sp.	7/6	85.7	4
Plumeria rubra L.	7/5	71.4	4
Gomphrena decumbens Jacq.	7/0	. .	.
Artocarpus integrifolia L.	7/0	. .	.
Capsicum annum L. (Fruits)	7/0	. .	.

Summary

A leaf spot disease of *Artocarpus incisa* L. caused by *Colletotrichum gloeosporioides* Penz. was recorded for the first time in India. The infection was mainly on the lower leaves as brown spots with greyish white centre having black acervuli scattered over the necrotic tissue. Conidia were hyaline and single-celled with a characteristic constriction in the middle. In addition to A. *incisa,* the organism could infect four other species of plants tested.

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Reference

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