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# *CORYNESPORA CASSIICOLA* : A FUNGAL PATHOGEN WITH DIVERSE SYMPTOMS ON *HEVEA* RUBBER

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## SUMMARY

Lesions with railway track appearance (fish bone lesions) have been shown to be the characteristic symptom of *Corynespora* leaf fall disease on mature rubber plantations in many parts of world including Sri Lanka, Indonesia, Malaysia and Africa. However, during the past decade a great deal of variation in symptom production was noticed depending either on the maturity stage of the plant or type of the clone. These diverse symptoms are described with colour plates with the view of educating rubber growers to identify the disease in the field. This will facilitate them to bring any outbreaks of this disease in their plantations to our notice at the initial stages.

**Key words**: *Corynespora cassiicola*, disease symptoms, *Hevea brasiliensis*

During the first epidemic of *Corynespora* leaf fall (CLF) in late 1980's where more than 4600 ha of rubber plantations were severely defoliated leading to die-back, only one type of symptom was evident on leaves of the mature plants. This symptom was described as railway track appearance or fish bone pattern as browning or blackening of the veins adjacent to the lesions occurred frequently (Liyanage *et al.*, 1986) (Fig. 1a & g). The area around the lesions gradually becomes chlorotic due to the destruction of chloroplasts. This was the common symptom described in other rubber growing countries such as Malaysia (Chee, 1987), Indonesia (Situmorany & Budiman, 1984) and Thailand (Pongthep, 1987).

However, during the last decade a great deal of variation in symptom production was noticed depending either on the maturity stage of the plant or type of the clones. There were few instances where different symptoms were observed depending on the locality. The ideal example for this is the CLF disease symptom in India, the country where CLF disease was first reported on *Hevea* rubber. The most common symptom observed in India is the presence of circular or irregular amphigenous spots which measure 1-10 mm in diameter (Ramakrishnan & Pillay, 1961; Rajalakshmy & Kothandaraman, 1997). It has been shown that these spots

sometimes may coalese to form enlarged lesions with brown or white centres. On the lesions typical dark concentric rings are also appeared.

In the light of this situation the aim of this presentation is to educate the rubber growers on various symptoms produced by *Corynespora cassiicola*. This will facilitate them to bring any out breaks of this deadly disease in their plantations to our notice at the initial stages.

The typical symptom (fish bone appearance) which was described previously is unique for the *Hevea* clones; RRIC 103, RRIC 52, RRIM 600, IAN 873, RRIM 725 and seedlings in seedling nurseries.

The symptoms produced on the leaves of the clone RRIC 110 is somewhat different from the typical lesions and often mistaken with old *Oidium* patches by the field staff. These lesions are either irregular or polyhedral and surrounded by extended yellow halos when leaflet is viewed against the light. Silvery white papery appearance develop in the centre and sometimes shot holes may also develop due to the disintegration of the centre tissue of the lesion. Another characteristic feature with this clone is the blackening of the portions of secondary veins associated with the polyhedral lesions. Appearance of the blackish linear lesions on midrib of leaflets is the common symptom on the clone RRIC 133 in budwood nurseries (Fig.1f). The other types of lesions have not been observed in this clone to date. Lesions produced by *C. cassiicola* on the clone RRIC 132 is more or less similar to the lesions of Bird's eye spot disease caused by *Drechslera heveae* (Fig. 1h). In addition, the linear lesions are very common here and they are brownish black in colour.

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Fig. 1.Variation in the symptoms produced by *Corynespora cassiicola* on *Hevea* leaves.

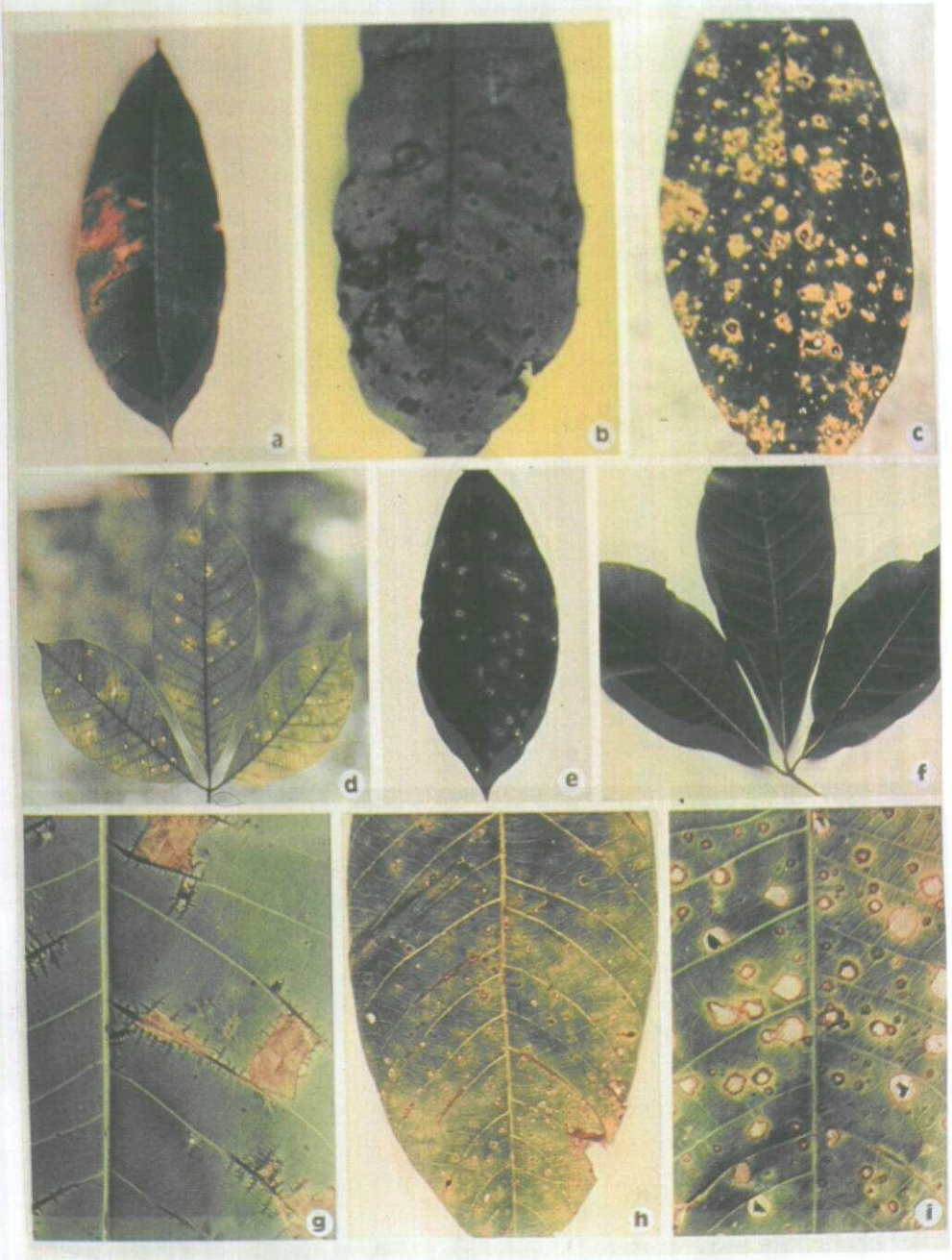
(a) Characteristic "railway track" or "fish-bone" symptom due to blackening of midrib and lateral veins, a common symptom on the clones RRIC 103, RRIC 52, RRIM 600, Tjir 1, RRIM 725, and seedlings in seedling nurseries. Fig. g shows an enlargement of the same symptom (courtesy: Liyanage *et al.*, 1986).

(b) Brown to blackish lesions of varying sizes delimited by a wavy border, a common symptom on polybag plants in nurseries. This symptom could be seen on any clone including RRIC 100, RRIC 102 and RRIC 121 in nurseries (courtesy: Liyanage *et al.*, 1986).

(c) Irregular and polyhedral lesions of the clone RRIC 110. These lesions are surrounded by extended yellow halos when the leaflet is viewed against the light. Figs d & e show two different forms of the same symptom. Subsequently centre of the lesion become silvery white with a papery appearance (Fig.i) (courtesy: Jayasinghe *et al.*, 1996).

(f) Blackening of midrib, a symptom characteristic to the clone RRIC 133 (courtesy: Jayasinghe & Wettasinghe, 1994).

(h) Brownish linear lesions on primary veins together with small irregular lesions of silvery white papery appearance resembling 'Birds eye spots' on the clone RRIC 132 (courtesy: Jayasinghe *et al.*, 1996).


a
b
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During the juvenile stage of the plant, specially in polybag nurseries the most characteristic symptom is the production of circular or irregular lesions of varying sizes delimited by a wavy border. Sometimes lesions coalesce to result irregular papery lesions giving a scorched appearance. If wet weather persists the leaves shrivel and fall off. Disease on polybag nurseries could be seen on any clone leading to dieback including highly resistant clones in the field such as RRIC 100, RRIC 102 and RRIC 121.

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