Indian Journal of Natural Rubber Research, 8(1) : 38-50, 1995

FACTORS AFFECTING THE PRODUCTION, GERMINATION AND VIABILITY OF *CYLINDROCLADIUM QUINQUESEPTATUM* SPORES

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Jayasinghe, C.K. and Wijesundera, R.L.C. (1995). Factors affecting the production, germination and viability of *Cylindrocladium quinqueseptatum* spores. *Indian Journal of Natural Rubber Research*, 8(1) : 38-50.

Cylindrocladium quinqueseptatum, a pathogen of *Eugenia caryophyllata* and *Hevea brasiliensis* produced spores freely when grown on artificial media under a normal dark and light regime and under continuous dark. CDA and LBA were found to be suitable media for sporulation. Spore production occurred between 20°C and 35°C with an optimum at 30°C. Ten minutes exposure of spores as wet smears to UV (253.7 nm) significantly inactivated spores. The most critical factor which influenced the spore viability and germination was humidity. Free water was found to be essential for spore germination and germination dropped to 2.5 per cent even at high humidities (96%). Spores lost viability by 25 per cent within a period of two minutes and 90 per cent after 9 minutes, when stored as dry smears. On leaves, typical lesions were produced only at 100 per cent humidity. Size of the lesions at 96 per cent humidity was negligible and no lessions were produced at 91 per cent RH. Spore germination occurred between 10°C to 35°C. The largest lesions on leaves resulted at 25°C and at room temperature (28±2°C) when inoculated as wet smears. Wet smears of spores could withstand high temperatures of 40°C for 2 h without loss of viability. The results of this investigation suggest that *Cylindrocladium* infections are likely to reach epidemic proportions during monsoon periods of dull, overcast, rainy weather.

Key words : *Hevea brasiliensis*, *Cylindrocladium quinqueseptatum*, *Eugenia caryophyllata*, Spore production.

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INTRODUCTION

Cylindrocladium quinqueseptatum Boed. & Reitsma, a common pathogen of *Eucalyptus* spp. in Northern Australia, Brazil, India, Indonesia, Malaysia, Mauritius and Vanuatu (Figueiredo and Namekata, 1967; Peerally, 1974; Pitkethley, 1976; Sharma *et al.*, 1984; Sharma and Mohanan, 1991; Ivory *et al.*, 1993) is also reported to cause leaf spots and defoliation in several clones of *Hevea brasiliensis* in Malaysia (Rubber Research Institute of Malaysia, 1972) and China (Kaiming, 1987). Though *Cylindrocladium* has not yet been recorded on *Hevea* in other rubber growing countries in South East Asia, it causes seedling blight and extensive defoliation in *Eugenia caryophyllata* in India (Sarma and Nambiar, 1978), Indonesia (Reitsma and Sloof, 1950) and Sri Lanka (Jayasinghe and Liyanage, 1983). Further, it is of interest to note that the *Hevea* clone RRIC 36, one of the clones severely affected in Malaysian budwood nurseries (Rubber Research Institute of Malaysia, 1990) was