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***In vitro* control of *Lasiodiplodia* sp. isolated from black banded disease-infected mango (*Mangifera indica* L.) trees in Sri Lanka**

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Mango (*Mangifera indica* L.) is indigenous to the Indian subcontinent and extensively grown in Sri Lanka. Black banded disease, which has been reported to reduce the vigor and productivity of mango trees in India, has not been adequately studied in Sri Lanka. The objective of this study was to isolate fungi associated with black banded disease and to determine the effectiveness of selected fungicides and botanicals to control them. This is the first study to isolate and identify the fungi associated with black banded disease in Sri Lanka. Mango twigs of 15 black banded disease-infected trees (willard and karthakolomban cultivars) were collected from different locations in Kuliyaipitiya, Anuradhapura, Panadura and Kurunegala regions, and the associated fungi were isolated onto PDA under aseptic conditions. Resultant fungal colonies from all samples had similar characteristics and were identified to genus level using its morphological characteristics and its pathogenicity was confirmed according to Koch's postulates. Growth inhibition of the resultant fungus was tested *in vitro* by poison plate method with hot water and cold water leaf extracts of five plant species; *Lantana camara*, *Azadirachta indica*, *Mirabilis jalapa* and *Polyalthia longifolia* at 20% (w/v) concentration, which have been reported to exhibit antifungal effects. Contact fungicides Captan, Thiram, Mancozeb and Propineb at 100 ppm, 250 ppm, 500 ppm and 750 ppm concentrations incorporated into potato dextrose agar were also tested *in vitro* for growth inhibition of the isolated fungus at room temperature (30 °C). Black colony and pycnidia forming fungus with cylindrical, septate hyphae was isolated from all infected samples. It was observed to produce immature, hyaline conidia, later turning brown with a septum in the middle. It was identified as *Lasiodiplodia* sp., and its pathogenicity was confirmed by the development of black mycelial mass on black colored lesions at the site of re-inoculation, similar to the black banded disease. This is contradictory to previous studies in India, where the causative agent has been reported to be *Peziotrichum corticolum* (*Rhinocladium corticolum*). Neither hot nor cold water extractions of any of the five plant species showed successful growth inhibition of *Lasiodiplodia* sp. after 5 days of incubation. Less solubility of active compounds in water or comparatively low concentration used might have been the reasons for the lack of control of fast-growing *Lasiodiplodia*. Fungicides Captan and Thiram at 500 ppm and 750 ppm concentrations were most effective in controlling *Lasiodiplodia* sp. *in vitro*, with more than 80% inhibition, while Propineb exhibited the least inhibition of the pathogen with less than 10% pathogen inhibition even at 750 ppm, after 7 days of incubation. Thus, the inhibitory effects of Captan and Thiram against the causative pathogen *in vivo* have to be further evaluated in order to confirm their efficacy in controlling black banded disease in the field.

Keywords: Black banded disease, Fungicides, *Lasiodiplodia* sp., Mango