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Identification of the causal organism of black berry disease of black pepper (*Piper nigrum* L.) in Sri Lanka

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Among the Export Agricultural Crops (EACs) black pepper (*Piper nigrum* L.) plays the second major role in terms of foreign exchange earnings and local consumption as a spice. Commodities with low quality always fetch low prices either in the local or international market. Black berry disease infection affects pepper berries directly and leads to a poor quality yield. As a result of infection of the black berry disease, pepper spikes are vulnerable to fall down. This condition will enhance the yield reduction thus lowering production. During the recent past, black berry disease was observed in many fields in Sri Lanka including the research fields in Matale. In view of the above, the current study was conducted to identify the causal organism of black berry disease and to suggest control measures.

Infected samples collected from fields were initially cultured on tap water agar medium and then sub cultured on potato dextrose agar medium. Microscopic and macroscopic features of the isolated organism were studied for correct identification. Pathogenicity test was done following Koch's postulate. Carbendazim 0.05% a.i. and Copper Oxychloride 50% w/w were tested in the field to control the disease.

Microscopic and macroscopic studies together with the pathogenicity test confirmed that the causal organism of black berry disease of black pepper is a *Colletotrichum* species. The colonies on PDA show sparse whitish aerial mycelium. Sclerotia usually abundant, evenly distributed over the agar surface; when young they are grayish in colour and then rapidly become dark and setose. Acervuli are formed in association with sclerotia or as separate aggregates of setose mycelium. Spore masses appeared amsll and salmon orange colour. Reverse of the colony is gray, darker with age because of the formation of irregularly lobed appressoria. Among the fungicides tested, application of Carbendazim 0.05% a.i. at the very early stage of flowering with tender leaves gave the best control.

Key words: black berry disease, black pepper, pathogenicity, *Colletotrichum* species