Characterization and pathogenicity of *Colletotrichum* Species associated with Anthracnose In Sri Lankan Chilli Pepper (*Capsicum Annuum*) cultivars

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Abstract

Anthracnose disease is one of the more significant economic constraints to chili production worldwide, especially in tropical and subtropical regions. Anthracnose is mainly a problem on mature fruits, causing severe losses due to both pre- and post-harvest fruit decay.

Colletotrichum acutatum was identified as a causal organism of chili anthracnose, a problematic disease of chilli in Sri Lanka. *C. gloeosporioides* and *C. capsici* have previously been reported as causal agents of chili anthracnose. In the present study, *C.acutatum* was isolated from anthracnose lesions of chili pepper (*Capsicum annuum*), cvs. Hungarian Yellow (HY) and CA-8 and identified using conidial morphology and sensitivity to fungicides. The colony of the isolate obtained was white to orange in colour, with slight shades of pink and light mouse grey aerial mycelium. Pathogenicity of this pepper isolate of *C.acutatum* was proved by inoculating wounded and non-wounded peppers of both cultivars and fulfilling Koch's postulates. The results revealed that the *C.acutatum* can produce anthracnose lesions on both wounded and non-wounded fruits. Symptom development was slower in the non-wounded fruits. Further, the results of the fungicide assay indicated that the *C.acutatum* was less sensitive to benomyl (Benlate) while, *C. gloeosporioides* isolate from pepper was extremely sensitive to this fungicide at all concentrations used. Based on these findings, we propose that, at present, *C. acutatum* is a major contributing cause of anthracnose of chilli peppers in Sri Lanka.

Keywords: Anthracnose, Colletotrichum acutatum, Pathogenicity.