

**Morphological Characterization of *Colletotrichum* sp. Associated with Bird's
Eye Chili in Yogyakarta and In-Vitro Antagonism of *Trichoderma* Against
Anthracnose**

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ABSTRACT

Colletotrichum sp. are significant plant pathogens that cause anthracnose, leading to severe crop yield losses in various agricultural sectors. This study aims to characterize the morphological diversity of *Colletotrichum* sp. isolated from five districts in Yogyakarta Special Region (DIY). The research conducted in Yogyakarta in January to June 2025. This research started with market explorations in Yogyakarta therefore the isolate inoculated in a disposable PDA, hence that it morphologically observed. Continued with in-vitro antagonism assay of *Trichoderma* sp. against the *Colletotrichum* sp. isolates. This method started with the classified sample taken then be put into antagonism PDA plate. Therefore macroscopic parameters identification based on aerial and reverse view, texture, growth rate, colony characteristics, and conidiomata. Microscopic parameters include conidial shape, size and microscopic capture. The study results distinct morphological groups among *Colletotrichum* sp. isolates showed three (BT, KP, and SL) similar red coloured reverse view and white mycelium then two isolates (YG and GK) with grey reverse view and white mycelium. (BT-KP, YG-GK, and SL). The in vitro antagonism test result weak resistance to *Trichoderma* sp. The mechanism of in vitro test between *Colletotrichum* sp. and *Trichoderma* sp. is that *Trichoderma* successfully suppress the growth of *Colletotrichum* of all samples with > 90% suppression.

Keywords: *Anthracnose, Colletotrichum* sp., *in-vitro* antagonism, morphology characterization, *Trichoderma* sp