Title Detection of quiescent infection of *Colletotrichum gloeosporioides* on green mango fruit by polymerase chain reaction

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Citation ISHS Acta Horticulturae 712: 927-936. 2006.

Keywords CAP20; CgInt; ITS; PCR; polygalacturonase gene

Abstract

A use of rapid method for detecting *Colletotrichum gloeosporioides* on green mango is necessary for assessment of the decay and losses before deciding to export. Polymerase chain reaction technique has been known to be useful for detection of plant pathogens. Five sets of oligonucleotide primers were tested their specificity to amplify genomic DNA of *C. gloeosporioides* 19 isolates and other fungal DNA were used as control. The results revealed that primers CgInt-ITS4 amplifying the conserve regions of 25S-28S rRNA gene were specific only on genomic DNA of *Colletotrichum* sp. but not on *Phomopsis* sp., *Lasiodiplodia theobromea*, and *Aspergillus niger* DNA. The primers ITS1-4 (the region between ITS1-ITS2 and 5.8 rRNA gene), primers ITS4-5 (the region between small-large nuclear rDNA and 5.8 rDNA) and primers CAP20 (appressorium forming gene) showed the specific amplification on those genes of *Colletotrichum* spp., giving amplified fragment sizes of 590, 590 and 610 bp, respectively, and also amplified unknown DNA region from other fungi. In contrast, primers CgmPG2 designed from polygalacturonase gene of *C. gloeosporioides* was not specific on *Colletotrichum* group. The sensitivity of primers for amplifying the minimum amounts of fungal genomic DNA was tested. The results revealed that the lowest amount of fungal DNA which could be amplified was 1 fg for primers ITS1-4 and ITS4-5 and 10 pg for primers CgInt-ITS1. Quiescent infection of *C. gloeosporioides* was detected in green mango without disease symptom and in ripen mango with disease symptom by using those primers. The results showed that primers CgInt-ITS4 could use to detect the quiescent infection from both samples.