

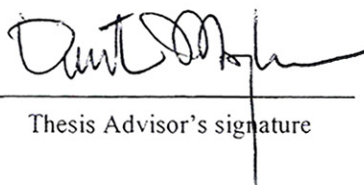
Paweena Montri 2008: Identification of Pathotypes of *Colletotrichum capsici* Causing Chilli Anthracnose in Thailand. Master of Science (Agriculture Biotechnology), Major Field: Agriculture Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Orarat Mongkolporn, Ph.D. 74 pages.

Genetic diversity of 45 *C. capsici* isolates in Thailand was studied based on colony growth rate, surface mycelium, colony color, mass conidial color, conidial and appressoria size in relation to three different levels of location including within farm, within districts in western area, and within Thailand. Cluster analysis based on colony growth rate, surface mycelium, colony colors, and mass conidial colors divided the 45 isolates into 16 groups. However when the data was combined with conidia and appressoria data, the isolates were not be able to group indicating a large genetic diversity based on variation of conidia and appressoria size. Based on the clusters of the isolates, there was no correlation to geographic location.

Eleven isolates of *C. capsici* were inoculated on nine chilli genotypes derived from four cultivated species of *Capsicum*: *C. annuum*, *C. baccatum*, *C. chinense* and *C. frutescens* using microinjection on red fruit, the host reaction was assessed nine days after inoculation. A set of disease scales were developed based on % lesion size in relation to fruit size; and assigned disease scores from 0 to 9. Three pathotypes, PCC1, PCC2 and PCC3 were identified according to differential qualitative infection of the fruit of the *C. chinense* genotypes 'PBC932' and 'C04714'. PCC1 was the most virulent pathotype that infected all genotypes whereas; PCC3 was the least virulent pathotype that infected only the genotypes of *C. annuum* and *C. frutescens*. Quantitative infection occurred in all chilli genotypes except for genotypes of *C. baccatum* where no infection occurred, thus demonstrating various levels of aggressiveness of isolates within pathotypes.

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Student's signature



Thesis Advisor's signature

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