Monthikarn Sa-ngopchit 2007: Detection of *Xanthomonas axonopodis* pv. *citri* (Hasse) and *Candidatus* Liberibacter asiaticus in Pummelo using the Polymerase Chain Reaction. Master of Science (Agriculture), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Assistant Professor Chalida Leksomboon, Ph.D. 79 pages.

Polymerase chain reaction (PCR) was used to detect *Xanthomonas axonopodis* pv *citri* (Xac) causing pummelo canker and *Candidatus* Liberibacter asiaticus causing pummelo greening disease. Primers J-pth1/J-pth2 (5′-CTTCAACTCAAA CGCCGGAC-3′)/ (5′-CATCGCGCTGTTCGGGAG-3′) and J-RXg/J-RXc2 (5′-GCGTTGAGGCTGAGACATG-3′) / (5′-CAAGTTGCCTCGGAGCTATC-3′) were used to amplify target sequences in DNAs extracted of Xac strain Xci33 (pummelo strain), Xci12 (lime strain), Xci21(tangerine orange strain), and Xci42(leech lime strain). The expected 197 bp amplification product was produced with DNAs of the 4 strains. The primer J-pth1/J-pth2 could detect Xac strain Xci33 from amended DNA of pummelo leaf at the minimum level of 0.1 ng of Xci33 DNA. The primers J-pth1/J-pth2 and J-RXg/J-RXc2 were used for detection of artificially inoculated leaf at a level of 10^6 - 10^8 cfu/ml of test sensitivity threshold. The results obtained were positive in samples with symptom first appear on the leaf surface as pin-point oily spots at 5 and 14 day after inoculation in laboratory(detached leaf) and field, respectively.

Detection of *Candidatus* L. asiaticus was done by PCR base on amplification of the ribosomal protein gene of the pathogen using primer A2/J5 (5′-TATAAAGGTTGACCTTT CGAGTTT-3′) / (5′-ACAAAAGCAGAAATAGCACGAACAA-3′). An amplified product of the expected size was observed from two pummelo cultivars (Thong dee and Kao nam peung) Som Chokun, and Som Sha. This result confirmed the presence of greening disease in a pummelo orchard located in Ampher Nakhon Chaisi, Nakhon Pathom province.

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