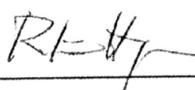


Suphot Phoomsuk 2008: Antibody Production and the Detection of *Cucumber green mottle mosaic virus* in Cucumber. Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program.  
Thesis Advisor: Assistant Professor Ratchanee Hongprayoon, Ph.D. 80 pages.

*Cucumber green mottle mosaic virus* (CGMMV) is an important quarantine pest and a threat for the production areas of various economic crops in the cucurbitaceous. In this research, CGMMV isolated from diseased bottle gourd (CGMMV-Bg) was used as virus source and inoculated onto the bottle gourd seedling to propagate the virus for purification, which 25.4 mg purified virus per 100 g leaves was obtained. Purified CGMMV preparation was used as antigen for the production of polyclonal antibodies in chicken (ChIgY) and rabbit (RIgG) as well as monoclonal antibodies (MIgG). Five monoclonal antibodies were obtained from fusion, clone MCG-2 was selected for upscale production. The immunoglobulin was purified by ammonium sulfate precipitation and affinity chromatography. From the specific test by used ELISA, the result showed that RIgG and MIgG were specifically to CGMMV but did not react with healthy plant sap and other viruses tested. Serological techniques for the detection of CGMMV were developed; enzyme-linked immunosorbent assay (ELISA), dot immunobinding assay (DIBA) and tissue blot immunoassay (TBIA), the result showed double antibody sandwich-ELISA (DAS-ELISA) was highest efficiency to detect of purified virus which the sensitivity at 5 ng/ml could be observed. Application of DAS-ELISA to detect CGMMV in cucumber tissues showed high concentration of CGMMV in every parts of the 45-days post inoculation but the O.D.<sub>405</sub> was 4 times less in immature-fruit than other tissues. The investigation of CGMMV infection in seed collected from infected fruit was also carried out and the result showed that 27 out of 30 seeds were infected. However, only 21 out of 27 infected seed, with the O.D.<sub>405</sub> value from 0.417-1.618, induced disease symptom on cucumber seedlings 14-days post inoculation.

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Student's signature

  
Thesis Advisor's signature

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