

D-53. Development of ring-blot immunobinding assay allowing rapid and simple detection of Pepper Mottle Virus and Pepper Mild Mottle Virus in pepper plants. Jung-Heon Han, Jun-Sung Shin, and Byung-Dong Kim. Center for Plant Molecular Genetics & Breeding Research, Seoul National University, Suwon 441-744, Korea

Tissue Blot Immuno-binding Assay (TBIA) is widely used for the detection and localization of plant viruses in various plant tissues. Based on the experimental procedures of TBIA, we developed a novel detection method by simplifying the procedure for antigen extraction and deposition with a commercial micropipette tip on nitrocellulose membrane. This method was designated Ring-Blot Immunobinding Assay (R-BIA) due to the ring shape of blot on the membrane. The detection conditions of pepper mottle virus (PepMoV) and pepper mild mottle virus (PMMoV) by TBIA in infected pepper plants were optimized with the concentrations of BSA, primary and secondary antibodies and incubation time of the blotted membrane in each reaction solutions. When R-BIA was carried out on the optimum conditions of TBIA, the assay was able to detect as little as 1 ng of purified PMMoV mixed with the leaf sap from a healthy pepper plant. R-BIA using the antibodies in which nonspecific components were completely eliminated by absorption with healthy pepper leaf sap showed high specificity in the detection of PepMoV and PMMoV. R-BIA may be suitable for routine diagnosis of other viruses as well as above pepper viruses and can be easily carried out with minimal equipments.

D-54. Detection and significance of latent infection of *Colletotrichum gloeosporioides* on strawberry. Myeong Hyeon Nam¹, Suck Kee Jung¹, Sang Wook Ra¹, and Hong Gi Kim². ¹Nonsan Strawberry Experiment Station, Chungnam ARES, Nonsan 320-862, Korea ²Dept. of Agr. Biol., Chungnam National University, Daejeon 305-764, Korea

To investigate the primary inoculum for latent infection on strawberry, healthy plants (HP) derived from tissue culture and symptomless local farm plants (LFP) were grown in a strawberry nursery field on Nonsan Strawberry Experiment Station and local farms from 2001 to 2002. Among HP, occurrence of anthracnose was firstly detected in 2.2% of daughter plants on July 10th(98 days after planting). Meanwhile, among LFP, 10% of mother plants were wilted till June 10th(68 days after planting). In local farms, anthracnose did not occur in the nursery field where HPs were planted, but anthracnose incidence in LFP were detected from 5 to 60%, based on the survey in Aug. 2001 to Sept. 2002. To rapidly detect latent infection of *C. gloeosporioides* on strawberry, 5 min UV radiation, water rinse, 30 sec paraquat (6 ml/) treatment, and 30sec 70% alcohol treatment were tested. Acervulus formation of *C. gloeosporioides* were observed on petioles treated with either UV, water, paraquat, or alcohol. However, acervulus formation were not detected in non-treatment samples. Paraquats treatment was fastest for developing acervulus of *C. gloeosporioides*. Therefore, detection of the incidence of latent infection can be effectively performed with paraquat treatment on petioles.