C-28 Determinants as host specificity and cell-to-cell and long distance movement of *Cucumber mosaic virus* on wild and cultivated soybeans. Jin Sung Hong[1,2], Chikara Masuta[2], Jang Kyung Choi[3], and Ki Hyun Ryu[1]. [1]Plant Virus GenBank, PVGABC, Division of Life and Environmental Sciences, Seoul Women's University, Seoul 139-774, Korea; [2]Graduate School of Agriculture, Hokkaido University, Kita-ku, Kita 9, Nishi 9, Sapporo 060-8589, Japan; [3]Division of biological Environment, Kangwon national University, Chunchon 200-701, Korea

Many virus genes responsible for viral infection steps (replication, cell-to-cell and long-distance movement) have been identified in various virus-host combinations. Systemic infection of soybean-adapted *Cucumber mosaic virus* (CMV) strain (namely, *soybean stunt virus*; SSV) and non-adapted CMV-Y requires RNA3, which encodes the 3a movement protein and coat protein. CMV soybean strains (SSVs) were inoculated onto wild soybeans and cultivated soybeans to investigate their infectivity toward understanding of the co-evolution of SSV and soybean. SSV inoculation resulted in systemic infection in most of the wild soybeans used while general CMV could not. Pseudorecombinants between SSV-C and CMV-Y were constructed in vitro by exchanging the three genomic RNAs. Inoculation of the wild types and their pseudorecombinants to cultivated and wild soybeans suggested that the infection of the viruses in a plant comes into being through a complex interaction of the virus-host plant. Whereas, the determinant gene of SSV for in wild and cultivated soybean the systemic infections was determined to 3a gene and/or 2b gene.

C-29 Detection and Diagnosis of *Cucumber green mottle mosaic virus* by DAS-ELISA Kit from Watermelon Plants. Chang Ki Shim[3], Baeong Il Yoon[1], Ki Soo Han[1], Dong Kil Kim[1,2] and Hee Kyu Kim[1,2] [1]Division of Applied Biology & Environmental Sciences, [2]Research Institute of Life Science Gyeongsang National University, Jinju 660-701, Korea; [3]Organic Farming Technology Division, Dept. of Crop Life Safety, National Institute of Agricultural Science and Technology's, RDA, Korea.

We constructed monoclonal antibody based DAS-ELISA system for CGMMV, an important Tobamovirus causing a widespread epidemic of watermelon in greenhouse agriculture. A CGMMV particle was detected from the rind of watermelon fruit by DAS-ELISA of CGMMV-HY1, but not from the flesh of watermelon. Average of seed

transmission rate of watermelon was 24 % from symptomatic watermelon collected from 5 regions of Gyeongnam provinces. Cucumber green mottle mosaic virus (CGMMV) was detected by DAS-ELISA with specific monoclonal antibody of CGMMV-HY1 periodically from root stock, during the sequential process for nursery seedling in Haman. Necrotic spots, at root stock seedling progressively revealed to typical symptomatology appeared on grafted nursery. It is noticeable that greenhouse watermelon cultivation was introduced for the first time to Bongwha region at high altitudes 600 m during the summer of 2000, where CGMMV disease was epidemic. Average of detection rate of CGMMV was about 92 % from symptomatic watermelon samples collected from 8 regions of Gyeongnam provinces. This is suggested that CGMMV was a dominant virus on watermelon, of which most dominant over 97% from Haman and Changwon. In greenhouse of Gyeongnam province, watermelon produces slight or severe leaf mottling, mosaic, dwarfing, deformed fruit and induced serious internal discoloration and decomposition of fruit flesh (Piduli) and decreased yield.

C-30 *In situ* localization of P12 in rice dwarf phytoreovirus infected plant. Bong-Choon Lee, Yeon-Kyu Hong, Sung-Jun Hong and Sung-Tae Park National Yeongnam Agricultural Experiment Station, NICS, RDA. 1085, Milyang, Korea, 627-803

Rice dwarf phytoreovirus(RDV), a member of the family *Reoviridae*, has a genome composed of 12 segmented dsRNAs designated as S1 to S12 with an increasing order of mobility in polyacrylamide gel electrophoresis (PAGE). In order to locate P12, ultrathin sections of RDV-infected rice plant were labelled by the anti-P12 polyclonal antibody and the protein A-gold complex. When thin sections from infected tissues were treated with a preimmune serum, nonspecific gold labelling was not observed, nor did labelling occurred in the absence of the primary antiserum from the standard incubation procedure. Gold particles were observed with P12 throughout the cytoplasm of infected leaves, although labelling was not uniform. Densely labelled areas frequently occurred in patches in the cytoplasm where slightly electron-dense. Sections from healthy tissues exhibited no significant labelling. Immunocytotochemical studies showed P12 accumulated in the cytoplasm of infected cells.

C-31 Emergence of *Rsv*-resistance breaking *Soybean mosaic virus* isolates from Korean soybean cultivars. Bong Kum Choi[1], Jung Mo Koo[1], Hye .Jin Ahn[1], Hye .Jung Yum[1], Chang Won Choi[1, 2], Ki Hyun Ryu[3], P. Chen[4], S.A. Tolin[5]. [1]Department of Biology & Medicinal Science; [2]Bio-medicinal Research Center