

by RFLP analysis. This is the first report on complete nucleotide sequence of PepMoV isolated from paprika in Korea.

4-49. First report of *Cycas necrotic stunt virus* from cultivated *Daphne* plants

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Natural virus infection of cultivated *Daphne odora* plants showing chlorosis and stunting was observed and their causal agent was investigated. An isolate of isometric virus was purified from infected leaf tissues, and it could infect systemic severe mosaic on *Chenopodium quinoa* and *C. amaranticolor*. cDNA library was generated from partially purified viral RNAs and oligo dT primer-pSPORT1 system, and recombinant clones were selected and their inserts were sequenced randomly. Nucleotide sequences of the virus were analyzed by BLAST, and it was closely related to members of subgroup B in the genus *Nepovirus*. The sequence analysis suggest that the virus was identified as an isolate of *Cycas necrotic stunt virus* (CNSV) because it was 89.7 % and 94.7 % identical to known CNSV for the CP and 3' noncoding region, respectively. RT-PCR was performed to screen disease incidence of CNSV in *Daphne* plants, and five out of 10 plants (50 %) were infected by CNSV. This is the first sequence information of CNSV from *Daphne* plants.

4-50. Transgenic cucumber expressing the 54-kDa gene of *Cucumber fruit mottle mosaic virus* is highly resistance and protect non-transgenic scions from soil infection

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Cucumber fruit mottle mosaic tobamovirus (CFMMV) causes severe mosaic symptoms with yellow mottling on leaves and fruits, and occasionally severe wilting of cucumber plants. No genetic source of resistance against this virus has been identified. The genes coding for the coat protein or the putative 54-kDa replicase were cloned into binary vectors under control of the SVBV promoter. *Agrobacterium*-mediated transformation was performed on cotyledon explants of a parthenocarpic cucumber cultivar with superior competence for transformation. R1 seedlings were evaluated for resistance to CFMMV infection by lack of symptom expression, back inoculation on an alternative host and ELISA. From a total of 14 replicase-containing R1 lines, 8 exhibited immunity, while only 3 resistant lines were found among a total of 9 CP-containing lines. Line I44 homozygous for the 54-kDa replicase was selected for further resistance analysis. Line I44 was immune to CFMMV infection by mechanical and graft inoculation, or by root infection following planting in CFMMV-contaminated soil. Additionally, line I44 showed delay of symptom appearance following infection by other cucurbit-infecting tobamoviruses. Infection of line I44 plants with various