8. Classification of Plant Viruses. Jeong-Soo Kim. Horticultural Research Institute, RDA, Suwon 441-440, Korea

The International Committee on Taxonomy of Viruses (ICTV) endeavors to establish virus classification system. The objective of classification is grouping of viruses having similar characteristics, and it gives the believable informations of what kinds of symptoms a virus may produce and how a virus may spread. The formal usage of universal system of nomenclature is the hierarchical levels of order(-*virales*), family (-*viridae*), subfamily (-*virinae*), genus (-*virus*) and species (-virus). All characteristics of virions can be used in taxonomy, but the most important characteristics are viral genome type, particle morphology, natural host range and transmission manner. The seven groups classified by Baltimore depending upon replication strategy are used for the first grade of virus classification. Plant viruses listed by ICTV and VIDE in 1998 are 987 species. Four kinds of genera including *Mastrevirus* are belonged to Group II of ssDNA viruses. Group III of dsRNA viruses has 6 genera including *Alphacrytovirus*. Almost all plant viruses have a positive ssRNA as Group IV and are divided into 47 genera and 7 families. Group V of negative ssRNA viruses has 6 genera. DNA reverse transcribing viruses in Group VII have two genera of *Badnavirus* and *Caulimovirus*. No plant viruses belonged to Group I of dsDNA and Group VI of positive ssRNA with DNA intermediate are known. Species is the most important hierarchical rank because a virus has its idiosyncrasy properties. The classical methods for the identification of species and strains are symptomatology and host range, cross protection, serology, and ultrastructures of virus particles and infected cells. Recent techniques in molecular biology of coat protein and nucleic acid sequence, and nucleic acid hybridization are adopted in the classification of viruses. Those techniques make easier and believable in some genera or species identification. With the above statements of the plant virus taxonomy, the effective scheme of identification of plant viruses are discussed. In Korea, thirty seven species out of 51 plant viruses were classified as 18 genera and 7 families.