

6. Taxonomy of *Colletotrichum* Species and Disease Occurrence Caused by the Species. Wan Gyu Kim. Plant Pathology Division, National Institute of Agricultural Science and Technology, Suwon 441-707, Korea

The genus *Colletotrichum* Corda is an important taxon of plant pathogenic fungi. The fungal taxon commonly causes anthracnose on a variety of plants. Disease symptoms caused by *Colletotrichum* species develop at all growth stages of some plants, from seedlings to mature plants. The fungal species also cause preharvest and postharvest losses in some kinds of fruits and seeds. The taxonomy of *Colletotrichum* species is mainly based on morphological characteristics of conidia, setae, sclerotia, and appressoria and supplementarily cultural characteristics and host specificity.

About 900 species have been described in or assigned to *Colletotrichum* since the genus was established in 1831. About 600 synonyms of *Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc. have been reported. Arx (1957) revised several hundreds of *Colletotrichum* species to 23 taxa including 11 species, in which nine forms were described within *C. gloeosporioides*, and three within *C. dematium* (Pers. : Fr.) Grove. However, he added some more species to the taxa during 1980s. Sutton (1992) listed 39 accepted species referring that the list of the species should not be viewed as either fully authoritative or definitive.

The teleomorph of *Colletotrichum* was named as *Glomerella* Spauld. & v. Schrenk in 1903. About 20 species of *Glomerella* have been reported with *Colletotrichum* anamorphs. Eight species of *Glomerella* were not validly published according to the International Code of Botanical Nomenclature. Arx and Müller (1954) accepted five species of *Glomerella*. More than six formae speciales have been known in *Glomerella cingulata* (Stonem.) Spauld. & v. Schrenk. Sutton (1992) listed eight species of *Glomerella* as teleomorphs for some *Colletotrichum* anamorphs.

Molecular analyses with protein patterns, restriction fragment length polymorphism, polymerase chain reaction, and so forth have been conducted to differentiate isolates of some *Colletotrichum* species. However, valuable data which clearly endorsed conventional taxonomic criteria have not been obtained yet. Continuous attempts using DNA-based methodologies could provide valuable taxonomic information on similar species and formae speciales, types or races within a species.

Colletotrichum species attack large number of plants such as cereals, legumes, vegetables, grasses, and so forth. In Korea, it has been reported that 39 species of *Colletotrichum* and 19 species of *Gloeosporium* Desm. & Mont. are associated with anthracnose of plants. However, only 19 species of the *Colletotrichum* species are available, and the others are rejected or synonymous with the available ones. The genus *Gloeosporium* was invalidated, and many species belonging to the genus were transferred to *Colletotrichum* or other genera. The rejected species of *Colletotrichum* and *Gloeosporium* are required to be revised.