

such as sclerotium size, growth temperature, and microconidia of the fungi were similar to those reported on other *Allium* species previously. Consequently, the wild garlic is a newly reported host of the two pathogenic fungi in Korea.

4-16. Identification of *Phoma* sp. Detected on Rice Seeds

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A *Phoma* sp. was detected on rice seeds and was identified as *Phoma sorghina* (Sacc.) Boerema, Dorenbosch & Van Kesteren based on their morphological and cultural characteristics. On oatmeal agar, pycnidia were abundant, solitary, scattered or gregarious, subglobose to flask-shaped, usually with a distinct neck and ostiole, glabrous, blackish-brown, 55~185 x 40~170 μm in size. Conidiogenous cells were monophialidic, hyaline, subglobose to ampulliform, 3-5 μm in diameter. Conidia were ovoid to ellipsoidal, hyaline, unicellular and measured 3.5~6.0 x 1.5 ~ 3.0 μm (usually 4.0~5.0 x 2.0~2.5 μm) in size. Chylamydospores were variable, uni- or multicellular, intercalary or terminal, solitary or in chains, dictyosporous or botryoid. NaOH spot test was positive on malt extract agar. This is the first report of *P. sorghina* identified on rice seeds in Korea.

4-17. Anthracnose of Rapsberry(*Rubus coreanus*) Caused by *Colletotrichum coccodes* in Korea

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Anthracnose occurred on rapsberry grown in Gochang areas of Korea in 2003. The disease incidence was ranged from 1.1 to 2.6%. Anthracnose of rapsberry appeared as dark brown circular spots on naturally infected stems. The symptoms of infected stems were small brown to dark brown spots and gradually enlarged larger cylindrical dark brown lesions. The causal fungus of anthracnose isolated from the diseased plants was identified as *Colletotrichum coccodes* based on the morphological and cultural characteristics. All isolates of *C. coccodes* were produced similar symptoms on the host leaves by artificial inoculation.

4-18. Leaf Blight of Kudzu (*Pueraria lobata*) caused by *Fusarium solani*

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Leaf blight of kudzu (*Pueraria lobata*) was found in Jeonbuk province in 2002. The main symptoms appeared as leaf blight and showed yellowing and wilting. The causal pathogen of the leaf blight was isolated from symptomed kudzu leaf and produced white to cream, usually floccose

mycelium. It readily formed reddish orange mycelium on PDA. It produced typical microconidia and macroconidia. The microconidia were the reniform. The macroconidia were wide, slightly curved, usually 3 to 4 septate and size was 45 ~ 85 X 5 ~ 10 μ m. The pathogen produced chlamydospore singly on short hyphal branches within 2 to 3 weeks, which was hyaline, globose, and smooth walled.

The pathogen was, therefore, identified as *Fusarium solani* based on cultural and morphological characters. This is the first report on the leaf blight of kudzu caused by *Fusarium solani* in Korea.

4-19. Monoclonal Antibody-Based Indirect-ELISA for Early Detection, Diagnosis and Monitoring of Epiphytic *Didymella bryoniae* in Cucurbits.

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Gummy stem blight, caused by *Didymella bryoniae* occurs exclusively on cucurbits. This fungus has been known not to produce its pycnidium *in vitro* unless irradiated. Through this study, we optimized cultural conditions for mass-production of pycnidiospore by Metal Halide Lamp irradiation. In brief, the mycelial was cultured at 26 °C on PDA, for 2 days under the darkness, and then the plate was illuminated with MH lamp continuously for 3-4 days at 26 °C, a great number of pycnidia was simultaneously formed. Thus produced pycnidiospores were used as immunogen. From fusions of myeloma cell (v-653) with splenocytes from immunized mice were carried out. And, two hybridoma cell lines that recognized the immunogen *Didymella bryoniae* were obtained. One Monoclonal Antibody, Db1, recognized the supernatant and the other monoclonal antibody, Db15, recognized the spore. Two clones were selected which were used to produce ascite fluid two MAb Db1 and Db15, were immunotyped and identified as IgG1 and IgG2b, respectively. Titer of MAb Db1 and MAb Db15 was measured absorbance exceeded 0.5 even at a 10⁻⁵ dilution. The MAbs reacted positively with *Didymella bryoniae* but none reacted with other of fungi and CMV, CGMMV. Sensitivity of MAb was precise enough to detect spore concentration as low as 10³well by indirect ELISA characterization of the MAb Db1, Db15 antigen by heat and protease treatments show that the epitope recognized by the MAb Db1, Db15 were a glycoprotein.

4-20. *Gymnosporangium* species causing cedar-apple rust diseases in Korea

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Cedar-apple rust fungi had been collected at 36 sites throughout the country from 1984 to 2001 and deposited at the Herbarium of Korea Forest Research Institute (HKFRI). We conducted the morphological examination on the dried specimens by light and scanning electron microscopy and as