

## **Mycology and Fungus Diseases (1 ~ 12)**

### **A-01 Identification of *Exobasidium* species causing *Exobasidium* diseases on Korean *Rhododendron* species.** J.H. Park<sup>1</sup>, K.H. Kim<sup>2</sup>, K.J. Lee<sup>1</sup>, S.K. Lee<sup>2</sup>.

<sup>1</sup>Dept. of Forest Sciences, Seoul National University, Seoul, 151-742, Korea;

<sup>2</sup>Forest and Shade Tree Pathology Laboratory, Div. of Forest Environment, Forest Research Institute, Seoul, 130-712, Korea

The objectives of this study were to survey various symptoms by *Exobasidium* species on *Rhododendron* plants in Korea and to identify the fungi based on their morphological and cultural characteristics. Diseased plant materials were collected in the spring of 2004. Symptomatic, morphological and cultural characteristics of *Exobasidium* species from Korean *Rhododendron* plants were investigated. The appearances and anatomy of cross-sections of infected plant parts were examined for the symptomatic characteristics with the naked eyes and a light microscope, respectively. Morphological features of the fungal species were examined with light microscope and scanning electron microscope, and their cultural characteristics were observed with the naked eye, stereomicroscope, and light microscope. Three types of *Exobasidium* diseases were found, namely leaf blisters, pocket leaf-galls, and shallow leaf-galls. Leaf blisters and shallow leaf-galls were first reported in Korea. Four *Exobasidium* species were identified, namely *E. dubium*, *E. yoshinagai*, *E. japonicum*, and *E. cylindrosporium*. The *E. dubium* and *E. yoshinagai* were isolated from leaf blisters. *E. japonicum* was detected from pocket leaf-galls and *E. cylindrosporium* from shallow leaf-galls. Except *E. japonicum*, three fungi, *E. dubium*, *E. yoshinagai*, and *E. cylindrosporium* were new to Korea, and four *Rhododendron* species were listed as new hosts for the genus *Exobasidium* in Korea. Those host species included *R. yedoense* for. *poukhanense* and *R. yedoense* for. *yedoense* for *E. dubium* and *E. japonicum*, *R. schlippenbachii* for *E. yoshinagai*, and *R. tashiroi* for *E. cylindrosporium*. A dichotomous key for Korean *Exobasidium* species treated in this study was presented based on the symptoms and morphological characteristics.

### **A-02 Leaf disease of *Dendrobium Phalaenopsis* caused by *Pseudocercospora dendrobii* in Korea.** K.S. Han, J.H. Park, J.S. Lee, H.J. Jang, S.T. Seo. Div. Horticultural Environment, National Horticultural Research Institute, RDA, Suwon 441-440, Korea.

Leaf disease of *Dendrobium Phalaenopsis* was observed in orchid fields in 2003-2004. Occurrence of the disease symptoms was reached up to 31.8% in severely infected fields. Leaf spots showed circular to nearly-circular, these circular blemished were yellow, with greater amounts of brown to black flecks forming as the spots enlarge. On the diseased leaf yellowish mosaic pattern and defoliation occurred. *Pseudocercospora dendrobii* were isolated from the diseased plants. Conidiophores were produced on the lesion surface of the leaf with the blemished areas and conidia formed dark brown, cylindrical and straight to slightly curved, 5-9 septate, 25.7-87.0×2.0-3.5µm. Mycelial growth was mostly slow on potato dextrose agar and the optimum temperature for growth was 25°C. We were identified as *Pseudocercospora dendrobii* based on the morphological characteristics

**A-03 Characterization of a sapstain fungal species isolated from logs of *Pinus radiata*.** J.-J. KIM(1), Y. W. LIM(1), C. BREUIL(1), K. SEIFERT(2), <B>S.H. KIM</B>(3), G.-H. KIM(4). (1)Department of Wood Science, University of British Columbia, Vancouver, B.C. V6T 1Z4, Canada; (2)Biodiversity Theme, Environmental Sciences Team Agriculture and Agri-Food Canada, Ottawa, ON K1A 0C6, Canada; (3)Department of Microbiology, Dankook University, Cheonan, Chungnam 330-714, Korea; (4)Division of Environmental Science and Ecological Engineering, Korea University, Seoul 136-701, Korea.

An *Ophiostoma* species causing sapstain was isolated from *Pinus radiata* logs grown and stored in New Zealand, and imported from New Zealand to Korea. This species produces dark ascomata with long necks, lacks ostiolar hyphae and has hyaline reniform ascospores with a hat-shaped sheath. The fungus has mononematous *Leptographium*-like conidiophores that intergrade with synnematous *Pesotum*-like conidiophores, the latter previously described under the anamorph name *Pesotum pini*. Genetic cross between different isolates demonstrated that the species is a heterothallic species with two mating types. Phylogenetic analyses of aligned ITS2/partial LSU rDNA, partial  $\alpha$ -tubulin and partial actin DNA sequences demonstrate that the species is a phylogenetically distinct species most closely related to *O. cainii* and *O. galeiformis*, with which it shares many morphological characters. It is also more closely related to *Ophiostoma* species with *Leptographium* anamorphs than to species of the *O. piceae* and *O. ulmi* complexes, the best-known groups of species with *Pesotum* anamorphs. Overall the species is named as *Ophiostoma radiaticola* sp. novo.