

H-97. **Mycological characteristics and pathogenicity of *Zythia fragariae* and *Phomopsis obscurans* isolated from the imported Chinese strawberry plant.** Soon Min Hong¹, Seo Yeon Chang¹, Yeon Song Jeong¹, and Hee Kyu Kim². ¹Yeongnam Regional Office, National Plant Quarantine Service, Busan 600-016 Korea, ²College of Agriculture, Gyeongsang National University, Chinju 660-701, Korea

Two fungi were isolated from lesions on imported strawberry leaves in process of quarantine inspection from China. They were identified as *Zythia fragariae* and *Phomopsis obscurans*, based on morphology of pycnidia, conidia, conidiophores, and cultural characteristics. Pycnidia of *Z. fragariae* are ostiolate and yellowish brown without conspicuous neck. Conidia are rounded and biguttulate and borne on short, unbranched conidiophores. Pycnidia of *P. obscurans*, produced only on the upper surface of leaves, are immersed, black, and globose and have short, protruding, ostiolar neck. Conidia are hyaline, unicellular, and fusiform ; they have most two or rare three guttulae, with one guttula at each end. Conidiophores are hyaline, verticillately to irregularly branched. Optimum growth temperature of two fungi was at 25°C on PDA but did rarely grow over 30°C. Pycnidia of these fungi distributed irregularly on PDA. Colony of *Z. ftragariae* was of white aerial mycelia and that of *P. obscurans* was of milkwish mycelia. Upon inoculation symptom began to appear within 7 days at 25 °C and were fully developed in 12 days on wounded leaves but with weakly symptoms on un-wounded leaves.

H-98. **Differentiation of *Trichoderma* taxa isolated from naturally infected roots of *Rosellina necatrix* and *Helicobasidium mompa*.** J. S. Lee, K. S. Han, J. H. Park, Y. M. Choi. Div. Horticultural Environment, National Horticultural Research Institute, RDA, Suwon 441-440, Korea.

The species *Trichoderma* has not been clearly defined yet, despite being very common fungus with an expanding number of applications. We determined for *Trichoderma*23 isolates representing 94 species from infected fruit tree roots for morphological, cultural, and molecular characteristics and classified these isolates into phenotypic groups. Nine distinct types were existed, and were mostly consistent with groupings based on morphological approaches. The most common group comprised approximately 32% of the isolates and was identified as a strain of *Trichoderma harzianum*. 17 isolates were classified as *T. asperellum*, 12 were classified as *T. virens* and *T. atroviride*, 5 were classified as *T. koningii* and *T. hamatum*, respectively. Furthermore isolates within groups which had been separated by culture features alone were closely homologous as regards their microscopic morphological features such as phialides and phialospores. Cultural characteristics on 2% cornmeal agar medium, growth was relatively fast, but colony appearance was unstable, with many differences even between isolates of the same taxon and only four isolates spored well, most producing atypical greenish yellow spores.

H-99. **Regional distribution of physiological race of *Phytophthora infestans* in Korea.** K. Y. Ryu¹, J. T. Kim¹, J. S. Kim¹, J. U. Cheon¹, Y. I. Hahm¹, and B. S.

Kim². ¹Highland Crop Research Div., National Highland Agricultural Experiment Station, ²Dept. of Applied Plant Science, Kangnung National University.

The incidence of potato late blight was showed differently according to the varieties and cultivation patterns in Korea. In this year, the occurrence of late blight reached to 1~100% in commercial fields in Bosung of Chunnam province during the spring season. To identify the physiological race of isolates collected from potato cultivation areas, the differential hosts were grew in greenhouse for two months. Detached leaves of differential host were inoculated with suspension of sporangia and zoospores of isolates. After five days inoculation, the race was determined on the basis of sporulation and production of sporangia over the upper surface of detached leaves. Distribution of physiological races of *P. infestans* isolates was slightly different among the cultivation areas. The dominant race of *P. infestans* was Race1.3 in Korea and the ratio of Race 1.3 isolate was 62.8%. Race 0 and Race 2 of *P. infestans* were frequently found in Chunnam province but the Race1.3 was not isolated from those fields. Though five races were found in Kimjae of Chunbuk province and four races were found in other investigated areas, the physiological races of isolates seemed not to be diversified in potato cultivation areas. However, the chemical response of isolates were diversified depending on cultivation conditions, and the continual survey on population dynamics was needed to follow the changes of late blight pathogen.

H-100. Genetic diversity of *Fusarium graminearum* from maize in Korea. H. Kim¹, J. J. Jeon¹, S. H. Yun², Y. W. Lee¹. ¹School of Agricultural biotechnology, Seoul National University, Suwon 441-744, Korea, ²Division of Life Sciences, Soonchunhyang University, Asan 336-745, Korea

A total of 584 isolates of *Fusarium graminearum* (Shwein.) Petch (teleomorph : *Gibberella zeae*) were obtained from maize in Gangwon province of Korea during 1999-2000. Of these isolates, 500 were self-fertile and 84 were female-sterile. A phylogentic tree of the isolates were constructed by using amplified fragment length polymorphism (AFLP). AFLP showed polymorphic bands and these bands, haplotypic loci, were used to analyze population genetic diversity. Population structure of the isolates consists of four lineages. (7, 6, 3 and 2) Lineage 7 was the major group (74%) and followed by lineage 3 (13%), lineage 6 (12%) and lineage 2 (1%). Estimate of Neis Gst and Nm values showed a significant difference in allelic frequencies among lineages. Maximum parsimony trees based on selected sequencing data from *Tri101*, *Tri7* and *MAT* genes were found to be concordant with AFLP data. Each lineage showed a significant difference in fertility. Fertility of Lineage 7 isolates was 100% followed by lineage 6 and lineage 3 isolates that showed 69% and 25%, respectively. When the representative isolates of each lineage were inoculated to barley, they were virulent regardless of lineages. Trichothecene production of *F. graminearum* isolates was variable. Lineage 7 isolates and lineage 6 isolates produced deoxynivalenol (DON) and nivalenol (NIV), repectively, whereas other lineages produced either DON or NIV. The results of this study provide the difference of genetic variation among lineages in *F. graminearum* population from maize in Korea.