

International Conference on

Mycology & Mushrooms

September 12-14, 2016 San Antonio, USA

Investigation of microorganisms' in imported media substrates for mushroom cultivation

Seong Hwan Kim¹, Geunsick Lee¹, Hyuk Woo Kwon¹ and Chan Jung Lee²¹Dankook University, South Korea²National Institute of Horticulture and Herbal Science, South Korea

Recently, with the introduction of good agricultural practices (GAP) in mushroom cultivation, the numbers of farmers who are seeking for quality mushroom production are increasing in Korea. Agriculture byproducts are the major resources of medium substrates for mushroom cultivation in greenhouses. Due to the shortage of domestic supply of the medium substrates, the import of agriculture byproducts is gradually increasing. Subsequently, toward enhancing quality production, investigation of imported agriculture byproducts as safe medium substrates is prompted. To obtain information on harmful microbes, we isolated and identified bacteria and fungi from the imported cotton seed hull, beet pulp, kapok meal, cotton seed meal, peat moss and wheat straw which were imported in 2015 from Ukraine, Egypt, China, Indonesia, Canada, Germany and Pakistan. In this study, we report that a total of 9 genera and 11 species of fungi were indentified. Dominant fungi were *Penicillium*. Regarding *Penicillium* fungi; *P. chermesinum*, *P. allii*, *P. commune*, *P. janthinellum*, *P. toxicarium*, *P. erubescens*, *P. spinulosum*, and *P. melinii* were identified. Other indentified fungal species were *Aspergillus pseudoglaucus*, *A. tubingensis*, *A. fumigatus*, *Bjerkandera adusta*, *Bionectria ochroleuca*, *Chaetomium bostrychodes*, *Fusarium solani*, *Paecilomyces formosus*, *Umbelopsis isabellina* and *Mucor racemosus f. racemosus*. These identified fungi included toxin-producing species and pathogens of plants, mushroom and human. Our study demonstrated that there was introduction of fungi from foreign sources through the imported agriculture byproducts for mushroom cultivation.

Biography

Seong Hwan Kim has completed his PhD and Postdoctoral studies from University of British Columbia. He is a Professor of Dankook University. He has published more than 90 papers in reputed journals and has been serving as a Member of Board of Directors of Korean Society of Mushroom Science, Audit of Korean Mycological Society and an Editorial Board Member of *Journal of Microbiology and Biotechnology* and *Journal of Odor and Indoor Environment*.

monika.coton@univ-brest.fr

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