

2-001-4

## Diversity of Arbuscular Mycorrhizal Fungal Spores in Jeju Island, Korea

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Arbuscular mycorrhizal fungi (AMF) are one of the most important symbiont in ecosystem. They exist as asexual spores in rhizosphere until they meet the plant root. when they meet the plant root, hypha from AMF spores infect into the root and form the arbuscular mycorrhiza. AMF provide better nutrient absorptivity to host plant, enhance tolerance against plant root pathogen, and improve resistance against the stress by heavy metal or salinity. Due to their benefits for plants, AMF have importance in plant and soil ecosystem. Jeju island is the largest island in Korea, about 88 miles from the mainland of Korea. Jeju island show the different vegetation from the mainland, so there are needed studies about mycorrhizal fungi in Jeju island. In this study, we confirmed AMF spore distribution and diversity of AMF species in soils of Jeju island. We sampled the rhizospheres from 12 sites in Jeju island, and sampled rhizospheres were trap-cultured with host plants (*Sorghum bicolor*) in greenhouse. AMF spores were extracted from cultured soils using wet sieving method. AMF spores were identified by morphological characteristics and molecular analysis. As a result, we identified 20 AMF species from 12 genera. *Acaulospora* sp. JJ18046 showed similar morphological characteristics to *Acaulospora scrobiculata*, but result of molecular analysis indicated that DNA sequence of the spore is similar to *Acaulospora spinosa*, or compose another clade. Therefore, we considered the strain JJ18046 as the novel AMF species candidate.