Fungal diversity of seeds of *S. vomeracea* subsp. *laxiflora* and effects of these fungi on seed germination

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One of the world's largest plant family is Orchidaceae (Rasmussen, 1995). Many species are collected from nature for commercial purposes all over the world. Despite giving millions of seeds, germination in the nature is very difficult. Under natural conditions, germination depends on establishing a symbiotic relationship with a suitable fungus. In our research, it was aimed to determine fungal diversity and effects of these fungi to germination in the natural environment of *S. vomeracea* subsp. *laxiflora* seeds. The seeds were placed by dipping them near the plant roots. Seventy four fungi were isolated from the seed surface. In the morphological analysis of fungi, colony appearance, color, number of nuclei and growth rate were examined. The PCR protocol of the ITS1-5.8S-ITS2 gene region is described in Pascual *et al.* (2000). Phylogenetic trees were constructed using the algorithm of MEGA 4 (Tamura *et al.*, 2007) and Mr Bayes (Ronquist *et al.*, 2011). It was determined that one of the seed surface fungi belonged to *Tulasnella* genus and the other isolates belonged to *Fusarium, Pythium, Phoma, Alternaria, Aspergillus, Mortierella, Chaetomium, Arthrinium, Cunninghamella, Lecanicillium, Boeremia*. The fungi of the *Rhizoctonia* group obtained from the isolations promoted germination and non-*Rhizoctonia* fungi did not affect germination.

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