

## Effect of geographical location, seasonal weather variation and age of the needles on the diversity of fungal flora of Scots pine, (*Pinus sylvestris*), in Finland

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The influence of seasonal weather variations and latitude on the diversity of fungal flora of Scots pine (*Pinus sylvestris*) needles was investigated. A total of 81 needle pairs (i.e. 162 needles) were sampled for fungal flora. This led to 3868 fungi isolations which were assigned to 68 morphospecies. Among these were 64 endophytic species, 58 epiphytic species and 54 species that were common as both epi- and endophytes. Dothideomycetes fungi accounted for 50 % of all the isolates. The dominant species was *Hormonema dematioides* and some species well-known of their saprotrophic life stages on hardwoods as foliar fungi were also observed. Endophytes were more frequently isolated than epiphytes. The abundance of endophytes increased from fall season to spring but frequencies of epiphytes decreased during winter but increased again in the spring. Significant differences were found between frequencies of endophytes in the Northern and Southern Finland which suggests that altitude have an impact on the abundance of endophytes. The dual life styles observed for epiphytes and endophytes at the different seasons suggest that most epiphytes enter into endophytic phase in their life cycle during harsh weather conditions.