

Abstract

Pyrophilous fungi have a relatively unique ecology among fungi, as they have adapted to fire and can thrive in burned areas. Despite the extreme conditions, species that benefit from fire can be found worldwide. Fire adaptations vary widely among pyrophilous species. Fungal succession differs based on substrates or burn severity on the site. Pyrophilous fungi have various life strategies both on and outside of burned sites. We can find saprotrophic, endophytic, and mycorrhizal fungi among them. The pyrophilous lifestyle has independently emerged in many groups of both macroscopic and microscopic fungi throughout evolution. Adaptations of pyrophilous fungi to fire permeate their entire life cycle. Fire plays a role in spore dispersal and fire adaptations are important during germination and growth on burned areas, often under extreme chemical conditions. Many aspects of the life cycle of pyrophilous fungi remain unclear, such as dispersal ability, rapid colonization of burned areas or certain post-fire life stages. Further research is needed to fully understand the ecology and life strategies of pyrophilous fungi. The aim of this work is to summarize the current level of knowledge on the ecology of pyrophilous fungi, particularly in terms of their succession, dispersal, spore viability, and factors inducing their germination.

Keywords: Basidiomycota, Ascomycota, burnt sites, ecology, spore germination