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Analyzing aquatic fungal communities in Australia: impacts of sample incubation and geographic distance of streams

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Fungal colonization of *Eucalyptus viminalis* exposed in three streams (two sites each) near Armidale (NSW Tablelands, Australia) was characterized by measuring reproduction from recovered leaves in aerated and static water. Spore production for zoosporic and mitosporic fungi increased by up to 220 % and 310 %, respectively, in aerated water. Percentage similarities of aquatic hyphomycete communities between pairs of aerated and static samples from the same stream averaged 67.5 %; similarities among samples from different streams averaged 50.3 %. Canonical Analysis of Principal Coordinates (CAP) revealed no significant difference between fungal communities of aerated vs. static treatments summarized over all sites. The fungal communities of substrates from an additional nine streams, primarily from the coast, were characterized in September, 2010. They were compared to those on *E. viminalis* leaves incubated for four weeks at the original six sites. CAP revealed a significant difference between tableland and coastal fungal communities. Percentage similarities correlated significantly with geographic distance of the streams ($R^2 = 0.13$), their temperature ($R^2 = 0.46$) and their altitude ($R^2 = 0.65$).

Key words: aquatic hyphomycetes, zoosporic fungi, spore production, aeration vs. static incubation, temperature, geographic distance.

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Studie se zabývá společenstvy zoosporických a mitosporických hub na opadu *Eucalyptus viminalis* ve vodě tří potoků poblíž Armidale v Austrálii.