# Culture growth of *Phellinus contiguus* under laboratory conditions

István Eső[1], Norbert Horváth[2]

[1] University of Sopron – SKF - IWS, PhD student, eso.istvan@phd.uni-sopron.hu

[2] University of Sopron – SKF - IWS, associate professor, horvath.norbert@uni-sopron.hu

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## ABSTRACT

The white rot fungi *Phellinus contiguus* is commonly found in the forests of Europe, therefore there are plenty of recordings of its distribution and identification. The main focus of literature is better identification of the specie by traditional light-microscopy (Schmidt et al., 2006) and new DNA analysis (Fischer et al., 2001) methods. In contrast with its rich recordings in the wild, there are very few information on its optimum growth conditions (Butler et al., 1988), wood decaying method and its appearances in built environment.

While on living trees the fungi usually destroy its host short after growing multiple small fruiting bodies, indoors since perennial white rot fungi, *Phellinus contiguus* is capable of growing up to 1,5 m long and 30 cm wide fruiting bodies over the years, causing large amounts of damages in the wooden structure. Interestingly, while in forest *Phellinus contiguus* is found only on deciduous trees, it has been encountered on built in *Picea abies* multiple times in Hungary, which is the main wooden construction material in the country. Fruiting bodies has been found on roof deckings, roof structure elements, window sill and window framework.

Although Butler and associates carried out multiple experiments about growing factors of this polypore, their main goal was to characterise the fruiting inducing factors of *Phellinus contiguus,* not to produce viable mycelium. These studies were a good starting point to determine the optimal environmental factors in which the fungi is capable of producing mycelium usable for determining the wood decaying capacity of the fungi. After experiments on different wood powders (*Picea abies*, *Pinus sylvestris*, *Larix decidua*, *Quercus robur*, *Fagus sylvatica* and *Robinia pseudoacacia* sapwood and heartwood), in different humidity and temperature it was determined *Phellinus contiguus* grows fastest in 30°C temperature but perishes in 35°C and grows more and richer mycelium in high humidity: 90 %rH (Fig. 1). In lower temperatures the fungi produce a slower growing but thick mycelium layer that can be used for wood decaying capability testing.

Since the standard wood decay test takes sixteen weeks, it gives the opportunity to observe the wood decaying process by taking samples of the inoculated wood every week. Observing primarily the decay of lignin gives the opportunity to evaluate the results of different testing methods. Chemical analysis determines the amount of lignin and holocelluloses which can be compared with the result of stained microscopy slides, SEM (Schwarze, 2007) and FTIR spectroscopy (Bari et a., 2015). This way the process of wood decay and fungi development can be observed in chronological order and the course of macroscopical, microscopical and chemical changes can be determined.

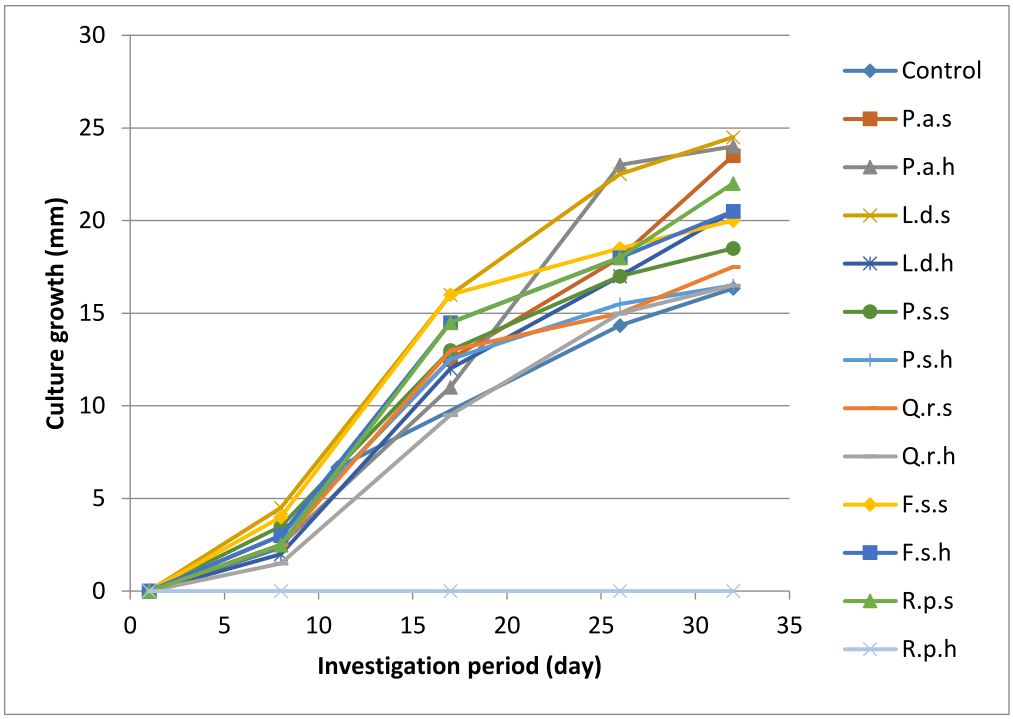


***Figure 1: Culture growth on sap- and heartwood powder, 20°C 90% rH***

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