

Characteristics of *Tremella fuciformis* and *Annulohyphomyces stygium* for Optimal Cultivation Conditions

Authors : Eun-Ji Lee, Hye-Sung Park, Chan-Jung Lee, Won-Sik Kong

Abstract : We analyzed the DNA sequence of the ITS (Internal Transcribed Spacer) region of the 18S ribosomal gene and compared it with the gene sequence of *T. fuciformis* and *Hypoxylon* sp. in the BLAST database. The sequences of collected *T. fuciformis* and *Hypoxylon* sp. have over 99% homology in the *T. fuciformis* and *Hypoxylon* sp. sequence BLAST database. In order to select the optimal medium for *T. fuciformis*, five kinds of a medium such as Potato Dextrose Agar (PDA), Mushroom Complete Medium (MCM), Malt Extract Agar (MEA), Yeast extract (YM), and Compost Extract Dextrose Agar (CDA) were used. *T. fuciformis* showed the best growth on PDA medium, and *Hypoxylon* sp. showed the best growth on MCM. So as to investigate the optimum pH and temperature, the pH range was set to pH4 to pH8 and the temperature range was set to 15°C to 35°C (5°C degree intervals). Optimum culture conditions for the *T. fuciformis* growth were pH5 at 25°C. *Hypoxylon* sp. were pH6 at 25°C. In order to confirm the most suitable carbon source, we used fructose, galactose, saccharose, soluble starch, inositol, glycerol, xylose, dextrose, lactose, dextrin, Na-CMC, adonitol, Mannitol, mannose, maltose, raffinose, cellobiose, ethanol, salicine, glucose, arabinose. In the optimum carbon source, *T. fuciformis* is xylose and *Hypoxylon* sp. is arabinose. Using the column test, we confirmed sawdust a suitable for *T. fuciformis*, since the composition of sawdust affects the growth of fruiting bodies of *T. fuciformis*. The sawdust we used is oak tree, pine tree, poplar, birch, cottonseed meal, cottonseed hull. In artificial cultivation of *T. fuciformis* with sawdust medium, *T. fuciformis* and *Hypoxylon* sp. showed fast mycelial growth on mixture of oak tree sawdust, cottonseed hull, and wheat bran.

Keywords : cultivation, optimal condition, *tremella fuciformis*, nutritional source

Conference Title : ICMMP 2018 : International Conference on Mycology and Mushroom Production

Conference Location : Barcelona, Spain

Conference Dates : May 17-18, 2018