

## Characteristics of Mycelial Growth and Fruit Body in *Lentinus lepideus* Strains

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*Lentinus lepideus* is widely distributed in the temperate region from summer to fall. Recently, a water-soluble extract from *L. lepideus* mycelium has been shown to control the expression of various cytokines[1] and controls selective cellular proteins, which play roles in the innate immune system, at the transcriptional and post-transcriptional levels[2]. However, it is difficult to cultivate for mass yield of this mushroom. Therefore, we aim to develop for mass cultivation of this mushroom. At first, we cultivated thirty-three strains with bottle culture for the investigation of characteristics of fruit body. And then, we analyzed suitable conditions of mycelial growth in *L. lepideus* strains.

Thirty three strains were classified mainly two groups with shape of fruit body. The lengths of mycelial growth in Potato Dextrose Agar(PDA) and MCM(2.0% glucose, 0.2% peptone, 0.2% yeast extract, 0.05% MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.1% K<sub>2</sub>HPO<sub>4</sub>, 0.05% KH<sub>2</sub>PO<sub>4</sub>) were longer than those in MYP(0.3% malt extract, 0.3% Yeast extract, 0.5% peptone), GPYM(1.0% glucose, 1.0 % peptone, 1.0% yeast extract, 1.5% malt extract) and Czapek Dox(3.0% sucrose, 0.3% NaNO<sub>3</sub>, 0.1% K<sub>2</sub>HPO<sub>4</sub>, 0.05% MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.05% KCl, 0.001% FeSO<sub>4</sub>·7H<sub>2</sub>O). However, fresh and dry weights of mycelia in GPYM were heavier than those in any other media. The suitable temperature for mycelial growth is between 26°C and 29°C. The selected nine strains of *L. lepideus* showed better growth of mycelia at pH 3.0 and 4.0 than the other pHs. Although it was showed distinct requirement of carbon and nitrogen sources for vegetative growth according to strains of this mushroom, mainly mycelial growth of selected nine strains was observed at media including xylose and tryptone, respectively. In addition to, higher C/N ratio resulted in higher dry weight of mycelia. Consequently, we attempt to found suitable mixture media and environmental condition for mass cultivation.

### Reference

- [1] Jin M, Jung HJ, Choi JJ, Jeon H, Oh JH, Kim B, Shin SS, Lee JK, Yoon K, and Kim S, *Experimental Biology and Medicine*, **228**, 749, 2003.
- [2] Choi JJ, Jin M, Lee JK, Lee WY, Park Y, Han YN, and Kim S, *Biochemical and Biophysical Research Communications*, **339**, 880, 2006.