Thesis Title Studies on Formation, Regeneration and Fruiting Body Formation of *Plueurotus cystidiosus* Protoplasts.

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ABSTRACT

Conditions suitable for the release of mycelial protoplasts of *Pleurotus cystidiosus* and for reversion of the isolated protoplasts were examined. The study culminated in the development of a method using commercially available preparation of 2.0 % Novozym™234, 1.5 % Chitinase, 1.5 % Driselase and 2.0 % Cellulase, by which about 3.8 x 10^8 /ml protoplasts could be obtained from the young growing mycelia, within 10 hours. The 0.05 M Na-maleate buffer containing 0.6 M $MgSO_4$, pH 5.8 is suitable as protoplast buffer (buffer/stabilizer). Protoplasts from *P. cystidiosus* mycelia regenerated into normal hyphae with frequencies about 0.19 % in glucose-malt-yeast extract medium supplemented with 1.0 % sorbitol (regeneration medium), in embedding method. The reversion

frequency was shown to be influence by nutrient composition, especially of carbon and nitrogen sources in the regeneration medium. Mycelium derived from protoplasts of *P. cystidiosus* consistently developed normal fruiting bodies.