

Chiu, S. W. & Moore, D. (1998). A study of the genetic mechanisms which generate diversity in a self fertile mushroom, *Volvariella*. Spoken offered paper at the International Symposium on Science and Cultivation of Mushrooms, Nanjing, China, 12-15 October 1998. In: *Proceedings of the '98 Nanjing International Symposium Science and Cultivation of Mushrooms* (ed. M. Lu, K. Gao, H. -F. Si & M. -J. Chen), p. 121 (abstract). JSTC-ISMS: Nanjing, China.

A STUDY OF THE GENETIC MECHANISMS WHICH GENERATE DIVERSITY IN A SELF FERTILE MUSHROOM, *VOLVARIELLA*

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This study aims to use an integrated approach, especially molecular and protoplasting techniques, to reveal the diversity generating mechanism(s) in *Volvariella volvacea*, the Chinese straw mushroom. *V. volvacea* was first cultivated in China in 1822 and is self fertile. It is the most popular fresh mushroom in Hong Kong and the fifth in the world. We have initiated a molecular study on this mushroom using polymerase chain reaction as a multilocus genetic probe for tracing the inheritance pattern and integrating homokaryotization by the protoplasting technique to determine the genetic homogeneity in vegetative mycelium. Growth rate, colony morphology and DNA fingerprints of single spore isolates from F₁ and F₂ progenies (the first and second filial generations) have been examined and progeny segregations will be described and discussed.