

The Analysis of Cellulase and Xylanase Activity in Six Mushrooms

Li, Ze-Hong¹ and Chun-Li Wang²

Abstract

Energy and food crisis were severe problems that human want to solve. Among the future energy resources, cellulose was thought as the considerable quantities because of its renewable characteristic. Every year, plants can fix a lot of carbon from photosynthesis, half of them may be cellulose. Therefore took good use of plant to transfer the solar power to biomass would be one of the better ways to solve the energy problem in the future. The research selected six mushrooms which were rich in cellulose enzyme activity including *Agrocybe aegerita*, *Pleurotus ostreatus*, *Pleurotus citrinopileatus*, *Russula rosacea*, *Ganoderma lucidum*, *Coprinus comatus*. To compare the cellulase and xylanase enzyme activity. The result indicated that *Pleurotus ostreatus* had the best endoglucanase, exoglucanase, β -glucosidase and xylanase enzyme activity with the four values of 9701 mIU, 6368 mIU, 7977 mIU and 5871 mIU, respectively. While *Ganoderma lucidum*. had the higher laccase enzyme activity, 2750 mIU.

Key words: endoglucanase, exoglucanase, β -glucosidase, xylanase, Bio-ethanol

¹ Research Assistant, Kaoshiung District Agriculture Research and Extension Station, Council of Agriculture.

² Professor, Department of Plant industry, Nation Pingtung University of Science and Technology, Pingtung Taiwan, ROC.