Thesis Title Cultivation of Shiitake (Lentinus edodes (Berk.) Sing.) on Sawdust Substrates of Various Wood Species in Polythene Bags

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## ABSTRACT

The cultivation of Shiitake (Lentinus edodes (Berk.) Sing.) was studied in polythene bags by using 7 species of sawdust woods : Eucalypt (Eucalyptus camaldulensis Dehn.), Kra Thin Yak (Leucaena leucocephala de Wit.), Maiyaraap Yak (Mimosa pigra Linn.), Pararubber (Hevea brasiliensis Muell. Arg.), Yaang Naa (Dipterocarpus alatus Roxb.), Kra Thin Deva (Acacia mangium Willd.) and Ko Duei (Castanopsis acuminatissima Rehd.).

The objectives of this study are to compare the

mycelial growth rate, fresh weight, dry weight and production number of fruit bobies obtained.

Results revealed that there were significant differences in mycerial growth rate, fresh weight and dry weight of fruit bodies produced, but there were no statistically significant differences between the production number of fruit bodies compared with various sawdust substrates used. In correlation analysis between chemical composition of wood sawdusts and dryweight of fruit bodies produced, it was found that the 1% NaOH solubility, the amount of lignin, the alcohol-benzene solubility and the amount of alpha-cellulose were obviously demonstrated independent factors. Besides this, the determination of the straight line model for predicting dry weight of fruit bodies produced was found to be inadequate and unreliable to forecast.

The estimation of Shiitake production cost was more or less 12.35 baht/bag.

This research finding will suggest as a guidline and fundamental data for further research and development for Shiitake cultivation in which newly appropriate wood species could be substituted those prohibited oak species by consideration in term of qualified productivity of fruit bodies gained and economical benefit.