SUMMARY

Biodelignification is a delignification process using any biological method to remove lignin and maintain cellulose from wood lignocellulolytic materials component for raw material of pulp. *Pleurotus ostreatus* is a white-rot fungi with biodelignification properties. This research aimed to find out the interaction between different wood species and incubation period on lignocellulosic degradation ability of white oyster mushrooms and the best wood species for biodelignification by white oyster mushroom and to examine the quality of the raw material of the pulp produced. The method employ Completely Randomized Design (CRD) in a factorial pattern. Factor I was a type of wood sawdust (K) there were Mahogany wood sawdust (K1), Acacia wood sawdust (K2), Sengon wood sawdust (K3). Factor II was incubation period (T) there were 0 day (T1), 10 days (T2), 20 days (T3), and 30 days (T3). Each treatment was replicated 3 times, thus the total of 36 units were tested. Obtained data used as basic measurement the incresement and/or decreasement of lignin and cellulose content, then transformed to arcsin $\overline{x + 0{,}5}$ and analyzed using analysis of variance. The treatment that significantly or highly significantly affect lignin and cellulose content were then analyzed further with Least Significant Difference (LSD) at error level 5% and 1%.

Research result showed that according to each treatment, mahogany, acacia and sengon wood sawdust were significantly influence lignin content decrease and cellulose content increase, as the same case with incubation period. There are interaction between wood sawdust type and incubation period was significantly influenced by lignin content decrease and cellulose content increase, and the best combination treatment obtained from sengon and acacia wood sawdust at 30 days incubation period with the highest lignin content decrease and cellulose content increase. The best ability of white oyster mushroom to delignify lygnocellulolytic component used for raw material of pulp obtained from acacia and sengon wood sawdust with the lowest content decrease and the highest cellulose content increase at incubation period of 30 days.

Keywords: *Pleurotus ostreatus*, biodelignification, incubation period.