SUMMARY

White rot fungi are members of basidiomycetous fungi that can be used for the delignification process, because they are capable to secrete one or more extracelluler enzymes that are able to degrade lignin. Several species of white rot fungi that are used as biodelignification agents are *Pleurotus ostreatus*, *Ganoderma lucidum* and *Phanerochaete chrysosporium*. Beside the kind of fungi, the other factor that influence delignification process is incubation time which is important to the fungi to degrade cellulose and lignin. This research objective are to know the interaction effect of species of white rot fungi and incubation time in biodelignification process of sengon wood sawdust and to know species of white rot fungi and the optimum of incubation time that most effectively biodelignify sengon wood sawdust.

This research employed experimental design with Completily Randomized Design (CRD) in a Factorial pattern and analyzed by using analysis of variance (F test) with the error contents 5% and 1% followed by Duncan's Multiple Range Test (DMRT) on highly different significance effect of the treatment. The treatments will be inoculation of *P. ostreatus*, *G. lucidum* and *P. chrysosporium* incubated in 0 day, 10 days, 20 days, and 30 days. Each treatment has 3 replication. Species of white rot fungi and incubation times were independent variable and biodelignification activity was dependent variable. The main parameter will be lignin and cellulose content before and after inoculation and the supporting parameters will be pH and the growth speed of the white rot fungi mycelia on the substrate. The result of Analysis of variance showed that there are no interaction effect between treatment of type of white rot fungi and incubation time on the lignin content in sengon wood sawdust. But, independenly type of white rot fungi and incubation gave the significant effect on the lignin content in sengon wood sawdust. *P. chrysosporium* is the type of white rot fungi that most effective to biodelignify sengon wood sawdust that showed the lowest of averages of lignin contents 7.11% and with the incubation time 30 days that is lignin contents of 9.59 %.

Key Words : White rot fungi, *Pleurotus ostreatus*, *Ganoderma lucidum*, *Phanerochaete chrysosporium*, Biodelignification