

## SUMMARY

Mangrove plays an essential role in ecosystem processes through its goods and services. About 637,624.31 ha of mangrove in Indonesia are in critical condition and need to be rehabilitated. *Rhizophora mucronata* is one of the major mangrove tree that commonly found due to its wide distribution. *R. mucronata* regenerates quickly as a propagule. Therefore it becomes a good candidate for seeds supply in rehabilitation programs. *R. mucronata* nursery had influenced by its environmental factors, such as medium. Husk and husk charcoal can be added to the medium to increase nutrient as well as medium porosity. It is expected to increase the gas exchange capacity in *R. mucronata* nursery media and to observe the effect of growth and physiology on *R. mucronata* nursery. Biomass and chlorophyll content are the main parameters used to determine the physiological process of *R. mucronata* grown on different nursery media. This study aims to assess differences in nursery media and the best nursery media that influence the biomass and chlorophyll content of *R. mucronata* plants.

The research was carried out experimentally with a Completely Randomized Design (CRD) with six levels of nursery media as the treatments. This research conducted for nine months in the Ayah mangrove forest area for a nursery of *R. mucronata*, while the biomass and chlorophyll content analysis was carried out at the Toxicology Laboratory, Plant Physiology Laboratory, and ITMEL Laboratory of Jenderal Soedirman University, Purwokerto. The independent variable is the planting medium which consists of 6 levels of treatment. While, the dependent variables are the biomass of root, stem, leaves, hypocotyl, and chlorophyll content of *R. mucronata* leaves. The primary parameter is the biomass consisting of dry weight and wet weight of root, stem, leaves, hypocotyl, and chlorophyll content of *R. mucronata* leaves. The secondary parameters are water content in the media, carbon content in the media, pH, and N, P, and K content. The primary data were analyzed using ANOVA with a significant value of 95% and 99%. Then proceed with the honest significant difference test (HSD) with a significant value of 95%. Analysis was carried out using SPSS software. The secondary data will be analyzed with descriptive data analysis.

The result of research obtained that modification of nursery media with husk and husk charcoal only increased wet biomass of roots. The best nursery media affecting the wet biomass of roots is mud and husk charcoal with ration 1:1. The husk charcoal can increase soil porosity so that soil becomes loose and easy absorb water. Husk charcoal also has the characteristic of easily binding water. The increasing wet biomass of roots also affected by environmental factors such as water content in the medium. While the pH value obtained in the medium is classified as low but still within the tolerance limit, affecting *R. mucronata*.

Keywords: *biomass, chlorophyll, husk charcoal, nursery media, R. mucronata.*