SUMMARY

VIANTI. In Vitro Conservation of Peatland Species Tumih (*Combretocarpus rotundatus* (Miq.) Danser). Under supervision of EDHI SANDRA and ISTOMO.

Tumih (*Combretocarpus rotundatus* (Miq.) Danser) is one of local species which is recommended for rehabilitation of disturbed peatland area. This species is classified as fast growing species and tolerant to dry and open area, thus suitable for pioneer plant of rehabilitation efforts in peat swamp forest. One of its multiplication efforts for germplasm conservation is tissue culture. Development of woody plant’s tissue culture is facing difficulties such as in explants sterilization phase, its low rate of multiplication and its phenolic compound which cause explants browning. This research was a preliminary research of explants preparation and sterilization techniques of tumih. The objective of this research was to identify the success of explants preparation and sterilization of tumih, observed from its survival rate, contamination level and browning level.

This research was carried out at March to August 2011 at Environmental Biotechnology Laboratory of Environmental Research Centre of IPB. The tip of tumih were used as explants material. Sterilization included the use of detergent, HgCl₂, Clorox, and sterilized water. Those explants were then initiated in MS media added with BAP with concentration of 0 ml/l; 0.5 ml/l; 1 ml/l and 1.5 ml/l, and TDZ with concentration of 0 ml/l; 0.05 ml/l; 0.1 ml/l and 0.5 ml/l. This research used 16 treatments with 7 repetition of each treatment, thus there are 112 experiment units.

Result showed that there were 25 explants which survived, characterized by green colour on its leaves and stems. Browning, characterized by brown colour of explants, occurred on 21 explants, while fungal and bacterial contamination occurred on 66 explants. The average percentage of survival explants was 22.32%, contaminated by fungi was 57.14%, contaminated by bacteria was 1.79%, and browning was 18.75%. This preliminary research were categorized into success which was indicated by green colour on the leaves and stems of its 25 survival explants. In order to decrease contaminant contained in plants source, a more intensive quarantine measure was needed. Fungicide and bactericide sprayed on to source of explants could reduce the rate of fungal and bacterial contamination carried by the explants.

Keywords: *Combretocarpus rotundatus*, rehabilitation, in vitro conservation, sterilization