ABSTRACT

FITOREMEDIATION AND RESPONSE OF PLANTLET CULTURE *Curcuma heyneana* Val. et V. Zijp TO ADDITION OF HEAVY METAL ION Cu^{2+}

Plantlet culture of *Curcuma heyneana* Val. et V. Zijp was treated in copper containing media with various concentrations (0,0064, 5, 10, and 15 ppm Cu^{2+}), for 0,0064 is as control. Each group consist of 30 culture bottles and half of each group have cultivated, while the others will be continued to the next passage. Growth index, pH value and % brix of the media will be measured on each passage as another parameter of the plantlet culture. The ability of *Curcuma heyneana* Val. et V. Zijp to remediate the copper in the media will be measured by analyzing the Cu^{2+} residue and it's accumulation in the biomass of plantlet culture with Atomic Absorption Spectrophotometer instrument. The accumulation of Cu^{2+} in *Curcuma heyneana* Val. et V. Zijp biomass was 117 ± 6 µg/g, 278 ± 22 µg/g, and 607 ± 51 µg/g for plantlet culture group 5, 10, and 15 ppm Cu^{2+} respectively. The highest accumulation is 607 ± 51 µg/g. This accumulation was higher than 100 ± 6 µg/g from *Nicotiana tabacum* L. (Gori *et al*., 1998). It's proved that the plantlet culture of *Curcuma heyneana* Val. et V. Zijp have an ability to be phytoremediator.

Key words : plantlet culture, copper toxicity, *C. heyneana*, plant regeneration