

Biological activities of crude early immature durian *Durio zibethinus* fruit extract

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Abstract: Durian (*Durio zibethinus*) is a popularly consumed fruit. To maintain the quality of fruit, 10 including the size and taste to meet consumer desirability, many early immature durian fruits were 11 pruned out. For a 5-year durian tree, it is estimated that around 100-200 fruit were pruned out per 12 a tree. Therefore, the fruit is one of the agricultural wastes and no scientific report on this waste has 13 been found yet. In this study we evaluated biological activities of crude extract of the early immature 14 durian fruit. These included antioxidant activities and anti-melanogenesis effect through tyrosinase 15 inhibitory activity. We found that the extract had a greater antioxidant activity than ascorbic acid, 16 according to DPPH and FRAP assays. For tyrosinase inhibitory activity assay, the extract had much 17 lower potentials than the kojic acid. The IC₅₀ values of the extract and kojic acid were 10,500 and 33 18 µg/ml, respectively. In addition, we reported the cytotoxic effect of the extract on HaCaT cells by 19 MTT assay. We found that the viability of the cells was significantly different (P<0.05) compared to 20 the control group at 160 µg/ml. This study suggests that early immature durian fruit could be an 21 interesting novel raw material from agricultural waste that can potentially be used for therapeutic 22 and cosmeceutical.

Keywords: durian; crude extract; biological activity

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