ABSTRACT

THE CHARACTERIZATION OF FLAVONOIDS COMPOUNDS ISOLATED FROM METHANOL EXTRACT OF Gliricidia maculata LEAVES

By

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This research aims to isolate flavonoid compounds which have botanical insecticide from methanol extract of Gliricidia maculata leaves. The methanol extract was obtained from maceration of G. maculata leaves powder. Fractionation and purification of the extract was done with column chromatography method using Sephadex LH-20 as adsorbent and MeOH : H₂O (4:1) as eluent. The fractions resulted in was monitored by thin layer chromatography method with adsorbent of Silica Gel 60 F₂₅₄ on aluminium plate and DCM : MeOH (7:3) as eluent. Identification of flavonoid compound using AlCl₃ gave Rf value of 0.531. The relatively pure fraction was recrystallized and gave yellowish white crystal RIO-46A about 0.35 gram. Analysis of the crystal using UV-Vis spectrophotometry showed maximum adsorption at λ 268 (band II) and λ 349 (band I) and analysis using IR spectrophotometry gave adsorption bands on wavelength numbers of 3373 cm⁻¹ (O-H), 2926-2885 cm⁻¹ (aliphatic C-H), 1593-1459 cm⁻¹ (C = C aromatic), 1729 cm⁻¹ (C = O) and 1073 cm⁻¹ (C-O-C). Based on both analysis method, it is concluded that isolate was a flavonoid aglycon from flavon. The result of bioassay test toward of papaya mealybug (Paracoccus marginatus) showed that the isolate has a characteristic of botanical insecticide with LC₅₀ 3.35% after 12 hours of treatment.

Keywords: flavonoid compounds, isolation, Gliricidia leaves, botanical insecticide