ABSTRACT

THE EFFECT OF BREWING TIME TOWARDS THE CONCENTRATION OF DISSOLVED (-)-*EPIGALLOCATECHIN GALLATE* (EGCG) IN GREEN TEA BAG PRODUCT

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Green tea (*Camellia sinesis*) is one of the most consumed beverages worldwide. (-)-*Epigallocatechin gallate* (EGCG) is the major bioactive compound in green tea. Concentration of EGCG in the tea extract is affected by temperature of the extraction process, concentration tea sample, duration of extraction (brewing time), and rate of stirring (Khokhar and Magnusdottir, 2002). The purpose of this study is to obtain effective and efficient EGCG extraction process. The dissolved EGCG was determined after brewed green tea bag sample for 1, 2, 4, 8 and 16 minutes, respectively. HPLC with RP C-18 μbondapak 10 μm 3.9 x 300 mm as column, the mobile phase was water: methanol: acetic acid 2% (pH=3) (60:35:5 v/v/v) with flow rate was 1.000 ml/min was used in this study. Photo Diode Array detector was used with wavelength 274.0 nm. According on this study, there were difference dissolved EGCG concentration in green tea bag sample that was brewed in various minute, the dissolved EGCG concentration for 1, 2, 4, 8 and 16 minutes were 1.78±0.33% (w/w), 1.92±0.35% (w/w), 2.76±0.29% (w/w), 2.82±0.24% (w/w), and 2.70± 0.18% (w/w), respectively. It can be concluded that minimum brewing time to produce maximum EGCG with hot water was obtained at 95°C after 4 minutes.

Keywords: Green tea bag, *Epigallocatechin gallate* (EGCG), brew, HPLC