

Pulsed electric field-assisted ethanolic extraction of *Nepeta binaludensis*: bioactive compounds and antioxidant activity in soybean oil

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This study was conducted with the aim of investigating the extract of *Nepeta binaludensis* on the stability of soybean oil. The ethanolic extract of nepeta was extracted with assisting of pulse electric field process (voltage 6000 V and number of pulses 60n). The phenolic components in the extract were evaluated by Shimadzu Nexera X2 UHPLC System with SIL-30AC autosampler. The antioxidant properties of the extract in different concentration (0.5, 2, 4 and 6%) on the oxidative stability of purified soybean oil were compared with the synthetic antioxidant TBHQ (0.01%). The total phenolic compounds (TPC), free radical scavenging power (DPPH sc) and reducing power of Fe III (FRAP) of nepeta extract were 425.93 mg/g, 75.06% and 1696.06 $\mu\text{molFe II/L}$, respectively. The components of phenolic compounds of ethanolic extract included chlorogenic acid, caffeic acid, rutin, paracoumaric acid, rosmarinic acid, Kaempferol, apigenin. The major part of the phenolic compounds of the extract was rosmarinic acid (235.71 mg/g). Also, the results showed that all concentrations of *Nepta binalodensis* extract had antioxidant activity, and the antioxidant power of the extract with a concentration of 6% (11.99 hours) was higher than the synthetic antioxidant power of TBHQ (8.03 hours).

