Chemical Composition and Antioxidant Activities of Citronella Essential Oil *Cymbopogon nardus* (L.) Rendle fractions

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Abstract	The human body needs antioxidants to protect the body from free radical attacks. One of the antioxidant sources is citronella oils that are mainly produced in Indonesia. This study aimed to isolate and fractionate citronella oils, to identify the compounds contained in citronella oils and its fractions, and to test their antioxidant activity. Citronella oils were afforded from C. nardus (L.) Rendle through steam distillation and the fractionation of citronella oils was performed using fractional distillation under reduced pressure. Identification of the major components from the isolated citronella oils and the fractions were carried out using gas chromatography-mass spectrometry (GC-MS). Meanwhile, the antioxidant activity test was performed using the 2,2-diphenyl-1-picrylhydrazyl (DPPH) method. The fractionation of citronella oils successfully afforded four fractions, i.e., Fraction 1 (F1), Fraction 2 (F2), Fraction 3 (F3), and residue (R). Identification results of the dominant compound contained in citronella oil, F1, F2, F3, and R fractions were citronellal (36.63%), limonene (67.07%), citronellal (92.39%), geraniol (62.41%), and geraniol (47.03%), respectively. The antioxidant activity test showed the antioxidant activity (IC50) of citronella oil, as well as fraction F1, F2, F3, and the Residues were 488, 14.254, 305, 253, and 93 mu g/mL respectively.
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