ABSTRACT

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ACETYLATION OF CLOVE OIL WITH RADICAL SCAVENGER PARAMETER

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Eugenol contributed to the aroma of clove and high radical scavenging activity due to the presence of hydroxyl in its structure. The potent oxidative, strong and pungent odour, toxicity of eugenol has limiting usage of eugenol. Several studies showed that acetylation reaction with acetic anhydride can substitute the hydroxyl group of eugenol to produced its derivative. Clove oil used were extracted using hydrodistillation and gave yield of 6.3752±2.1938%. The acetylation of clove oil was carried out using acetic anhydride and sodium hydrogen carbonate with ethyl acetate as the solvent. The successful of acetylation reaction in producing eugenol derivative indicated by reduce of radical scavenger activity, the formation of spot in Thin Later Chromatography, and characterization using UV-Vis spectrophotometry. The highest yield of acetylated eugenol was 62.6963±3.7839% produced from 7 mmol of acetic anhydride with 6 hours duration. The radical scavenging activity of acetylated eugenol 23241±151.7470. Analysis of FT-IR and GC-MS of acetylated eugenol showed the expected chemical structure and molecular weight. Acetylated eugenol produced has milder and lower pungent aroma and decreased toxicity for 71%

Keywords: Eugenol, *Syzygum aromaticum*, acetylation, radical scavenger activity, acetylated eugenol.

References: 58 (1991-2018)