

Antioxidant Properties of Liquid Smoke Production Variation of Pyrolysis Temperature Raw and Different Concentration

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Abstract : This study aims to determine the antioxidant properties of liquid smoke which is obtained from pyrolysis of various raw materials with temperature levels and different concentrations of liquid smoke. This research is conducted experimentally using a completely randomized factorial design 3 x 4 x 6 with three replications to obtain 216 units trial. A factor is the type of raw material (coconut fiber, coconut shell and cinnamon), B factor is the temperature of pyrolysis (temperature of 100±10°C; 200±10°C; 300±10°C; and 400±10°C) and C factor concentration of liquid smoke (1 ppm, 10 ppm, 100 ppm, 500 ppm, 1000 ppm and 1500 ppm). The observed parameters measured is % inhibition (inhibition) and IC₅₀ (inhibitor concentration) of liquid smoke is the third combination of treatment results. The result of research show a significant interaction (P < 0.05) in the treatment combination of differences in raw material liquid smoke with a temperature pyrolysis against the percentage of inhibition (inhibition) of liquid smoke as well as in combination treatment for different concentrations with the difference of pyrolysis temperature, while for the combination treatment of liquid smoke raw materials with different concentrations show no significant difference (P > 0.05) as well as the interaction of a combination of three (3) treatment of the raw material, pyrolysis temperature and concentration show no significant difference (P > 0.05). Based on the result of the research, a conclusion can be drawn. The percentage of the largest inhibition is got in the combination of cinnamon raw materials treatment on pyrolysis temperature of 400 ± 10 ° C of 23.865% with IC₅₀ value of 35.52 ppm. b. The percentage of the largest inhibition values is got in the combination of cinnamon raw materials at 1500 ppm concentration of liquid smoke of 27.173% is not significantly different from other treatments with IC₅₀ value of 6.08 ppm. c. the percentage of the largest inhibition value is got in the combination of the pyrolysis temperature treatment of 400 ± 10 ° C in liquid smoke concentration of 1500 ppm of 30.559% with IC₅₀ value of 4.96 ppm. d. the percentage of the largest inhibition is got in the combination of cinnamon raw materials treatment on pyrolysis temperature of 400±10°C in liquid smoke concentration 1500 ppm of 35.091% is not significantly different from other treatments with IC₅₀ value of 8.19 ppm.

Key words: antioxidants, raw materials, temperature, liquid smoke, concentration.