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Antibacterial Properties of Liquid Smoke from Various Raw Materials with Different Pyrolysis Temperature Level

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Abstract: This study aims to determine the nature of liquid smoke toxicity obtained from pyrolysis on various raw materials with different temperature levels to EscherichiaColi. This study was conducted experimentally by using the complete random design on factorial pattern 3 x 4 x 7 with three replications so that there are 252 experimental units. Factor A is the type of raw material that consists of coconut husk, coconut shell and cinnamon, factors B is temperature levels such as temperature 100 ± 10°C; 200 ± 10°C; 300 ± 10°C; and 400 ± 10°C and factors C is the seven (7) concentration levels of 0 ppm, 1 ppm 10 ppm, 100 ppm, 500 ppm, 1000 ppm and 1500 ppm. The observed parameters are the antibacterial properties of Escherichia coli resistivity diameter (DDH). The result of research showed that there is a significant interaction ($P<0.05$) between using the type of liquid smoke raw material with pyrolysis temperature levels and the difference of liquid smoke concentration to the antibacterial properties such as Escherichia coli resistivity diameter (DDH). The highest value of Escherichia coli resistivity Diameter (DDH) on liquid smoke can be found in raw material treatment from cinnamon with pyrolysis temperature level of 400 ± 10°C at concentration 1500 ppb that shows resistivity diameter (22.29 mm/ppb) compared to the other treatment combinations. Based on this result of research, it can be concluded that the use of cinnamon with pyrolysis temperature level of 400 ± 10°C at concentration 1500 ppb is better to be used as antibacterial than the combination of coconut husk and coconut shell raw materials treatment, the other pyrolysis temperature and lower liquid smoke concentration.

Keywords : raw material type; temperature; liquid smoke; concentration; antibacterial properties.

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