SYNTHESIS and BRINE SHRIMP LETHALITY TEST of N-METHYLANILINOMETHYL CARDANOL

Previous studies showed that cardanol lack of molluscides activity. Therefore in this study cardanol was modified by adding N-methylanilinomethyl group through Mannich reaction. The reaction was carried out by mixing cardanol, formaldehyde and N-methylaniline in round-bottom flask with ethanol as solvent and refluxed for 8 hours in a water bath temperature of ± 90 ° C. Mole ratio of cardanol, formaldehyde and N-methylaniline was 1: 2: 2. The potential toxicity of the obtained compound was determined using Brine Shrimp lethality test (BST) to determine the value of 50% Lethal Concentration (LC50) 24 hours after treatment. The concentration of the tested solution were 10 ppm, 25 ppm, 50 ppm, 100 ppm and 200 ppm. Furthermore, mortality data of shrimp larva was processed by probit analysis with SPSS 15.0 for windows with 95% degree of confidence, LC50 cardanol values was obtained at 77,80 ppm and LC50 N-methylanilinomethyl cardanol was 171,14 ppm.

Keywords: cardanol, brine shrimp lethality test, N-methylanilinomethyl cardanol, Mannich reaction.