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TOXICITY OF CALCIUM PROPIONATE IN BRINE SHRIMP (ARTEMIA SALINA) LETHALITY ASSAY

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Abstract

Calcium Propionate is considered one of the most used products as a preservative for breads and other kinds of foods. As a preservative, it controls the expansion of microbes in foods such as yeast, molds, and other micro-organisms. This study tested for the toxicity of Calcium Propionate using the Brine Shrimp Lethality Assay (BLSA). Three trials with six set-ups involved the application of varying concentrations of Calcium Propionate on Brine Shrimp in different concentrations (12.5 µg/ml, 25 µg/ml, 50 µg/ml, 100 µg/ml), with two control set-ups (2mg of $K_2Cr_2O_7$ and artificial sea water), to identify the optimum concentration of Calcium Propionate on BSLA and the effects of Calcium Propionate on Brine Shrimp through LC_{50} and Probit Analysis.The test concluded that the LC_{50} concentration of Calcium Propionate is 237 µg/ml, which suggests that Calcium Propionate is slightly toxic, since the LC_{50} is greater than 100 µg/ml.

***Keywords*:** Calcium Propionate, Brine Shrimp, Brine Shrimp Lethality Assay, Toxicity, Artificial Sea Water, Potassium Dichromate, Probit Analysis, Lethality Concentration 50, Survival Rate.