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DETERMINATION OF BRINE SHRIMP LETHALITY OF DIFFERENT SOLVENT EXTRACTS OF SOFT STEMS OF DIFFERENT BANANA (*MUSA SP.*) CULTIVARS

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Banana stems are a waste product once the fruit bunches are harvested, and they have also lost their significance among the current generation due to the lack of awareness of their values. In this study, the soft stems of the Ambulkesel, Seenikesel, Suvandel, and Alukesel cultivars of the *Musa sp.* (banana plant) were investigated for their brine shrimp lethality effect against *Artemia salina* nauplii. Powdered soft stems of four cultivars were sequentially extracted with dichloromethane (DCM), ethyl acetate (EtOAc), and methanol (MeOH). The crude extracts were tested for brine shrimp lethality (BSL) using *A. salina* nauplii of the second instar. This work used seawater and 1% dimethyl sulphoxide (DMSO) as the negative control and potassium dichromate (K_2Cr_2O7) as the positive control. The soft stems of four banana cultivars showed moderate toxicity (LD_{50} < 2000 mg L^{-1}) toward *A. salina*, according to the results of the BSLA, while the overall lethality percentage was discovered to be dose-dependent of the crude extract within the chosen range of 62.5–2000 mg L^{-1}. The toxicity properties of DCM, EtOAc, and MeOH extracts of these soft stems showed LD_{50} values ranging from 891.1-1071.4 mg L^{-1}, 1246.8-1428 mg L^{-1}, and 696.5-822.2 mg L^{-1}, respectively. The DCM crude extracts of banana soft stems of the *Ambulkesel, Seenikesel, and Alukesel* cultivars and the MeOH extracts of all four cultivars showed toxic activity against the second nauplii of *A. salina* in accordance with literature, that classified crude extracts and pure substances into toxic (LD_{50} value 1000 mg L^{-1}) and non-toxic (LD_{50} > 1000 mg L^{-1}). The BSL assay showed that the most active fraction is the methanol fraction of the *Seenikesel* cultivar, with an LD_{50} value of 696.5 mg L^{-1}. Compared to potassium dichromate, DCM and MeOH extracts of four cultivars displayed moderate toxicity against *A. salina*. No lethality percentage was detected in the negative control. The LD_{50} values of soft stems of banana plant extracts to brine shrimps indicate the presence of potent components, which will be explored further.

Keywords: *Artemia salina*, Brine shrimp, Lethal concentration, *Musa spp*., Soft stems