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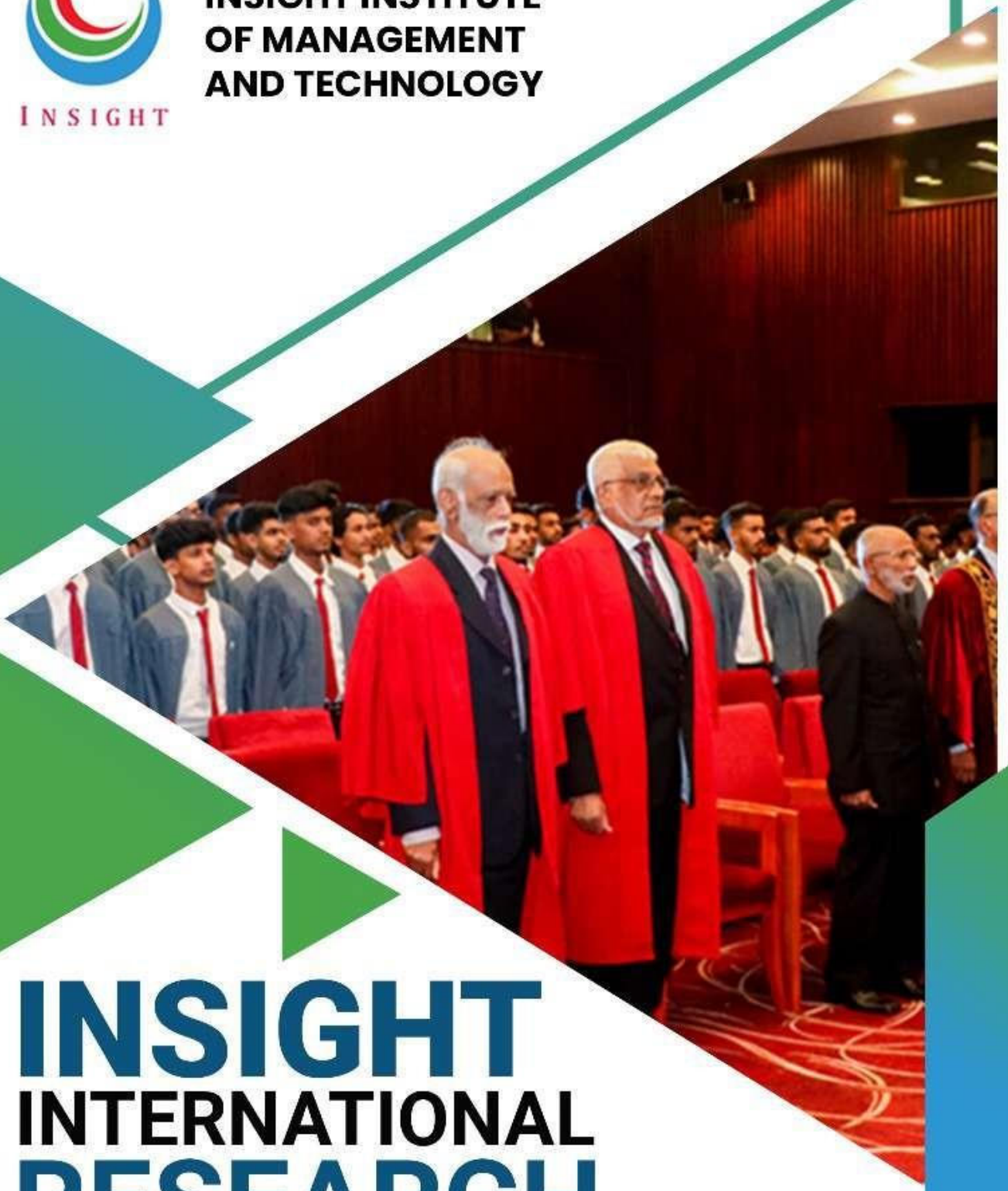

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Determination of brine shrimp lethality of different solvent extracts of *Terminalia catappa* L. Seed kernel

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Terminalia catappa L. (TC), a large spreading tree is widely distributed in the tropical and the sub-tropical regions in the world. Different parts of this tree possess various medicinal properties.The present study was planned to determine whether the seed kernels of TC have potential toxiceffects using a brine shrimp lethality assay. Powdered seed kernels of purple and yellow cultivarsof TC were sequentially extracted with different solvents including hexane, ethyl acetate (EtOAc),and methanol (MeOH). The active nauplii of two days old brine shrimp *Artemia salina,* were usedin the bioassay. The brine shrimp lethality of plant extracts was reported as lethal concentration (LC_{50}). The plant extracts were dissolved in artificial seawater to create a concentration series ofcrude extracts (62.5-2000 mg L^{-1}). Ten active nauplii were introduced into each 1 mL of each extract in a 24-well semi microplate, and the plates were then left at room temperature for 24 hours while being illuminated. The number of surviving nauplii after 24 hours was counted to determine the LC_{50}. Data were analysed by one-way ANOVA using Minitab 17 software package. In this work, seawater was used as a negative control, and potassium dichromate was used as a positive control. No brine shrimp lethality was observed in hexane extracts of seed kernels of TCPurple cultivar while moderate brine shrimp lethality was observed in hexane extracts of seed kernels of TC Yellow cultivar with LC_{50} of 1370.58 ± 148.75 mg L^{-1}. Between EtOAc extracts, the highest brine shrimp lethality was detected from TC Yellow with LC_{50} of 234.18 ± 13.79 mg L^{-1} while TC Purple showed a moderate brine shrimp lethality with LC_{50} of 997.57 ± 4.92 mg L^{-1}. Between MeOH extracts, the highest brine shrimp lethality was observed from TC Yellow (LC_{50}=880.20 ± 3.92 mg L^{-1}) while TC Purple showed a moderate brine shrimp lethality with LC_{50} of 1744.69 ± 5.77 mg L^{-1}. When compared with all crude extracts, the positive control ($K_2Cr_2O_7$) exhibited the significantly ($p < 0.05$) highest brine shrimp lethal activity (LC_{50} = 13.33 ± 0.45 mg L^{-1}). According to the study, TC yellow demonstrated higher brine shrimp lethality than the TC Purple. As such, TC yellow may have the possibility of toxicity on other biological activities which will be worth of investigating.

Keywords: *Artemia salina*, Brine shrimp lethality, Lethal concentration, *Terminalia catappa* L.