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Toxicity Test of Aluminium on *Vibrio alginolyticus* as a Preliminary Test of Contaminated Soil Remediation

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Abstract

Aluminium contaminated soil is recently of concern due to the utilization of aluminium waste as roads and also river dams. This utilization is debatable because aluminium waste is categorized as hazardous waste, and yet violates regulation. One method that widely known to remediate metal contaminated soil is bioremediation. The toxicity test of aluminium contaminated soil on specific bacteria is required as preliminary study before conducting soil remediation. *Vibrio alginolyticus* is known to have good ability as a bio-agent for the treatment of aluminium. Toxicity test of aluminium contaminated soil on *V. alginolyticus* was conducted by using colony forming analysis. Several concentrations of $AlCl_3$, i.e., 0, 50, 100, 200, 350, and 500 mg/L were used to determine bacterial growth in aluminium contaminated soil sample. Result indicated that *V. alginolyticus* showed a colony growth was still observed at the concentration of aluminium up to 350 mg/L. This equals to 308.78 mg/kg of aluminium contaminated soil. Furthermore, the aluminium concentration of 500 mg/L (i.e., equals to 374.53 mg/kg) completely inhibited the bacterial metabolism. This condition was indicated by the absence of *V. alginolyticus* growth.

Keywords--- Al, bioaugmentation, bioremediation, colony, *V. alginolyticus*

Growth Screening of Microalgae Species Isolated from Terengganu Waters, Malaysia

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Abstract

Microalgae are photosynthetic organisms which need light, carbon dioxide and nutrient for their growth. They can be found anywhere and can live in various conditions. Biodiversity of microalgae species comprised of several thousand species with 11 divisions might signify sources that are remain unknown. Only few species of microalgae have been studied in detailed or being screened for specific purposes or compounds and leaves large number of species remaining unexplored. Thus in this study, sampling of microalgae were conducted around Terengganu areas. Successfully isolated microalgae species from Terengganu water bodies were then were screened to identify species that easy to grow and has faster growth. Potential isolates which easy to grow were then can be manipulated and applied for specific uses.

Keywords--- **microalgae, growth, screening, Terengganu**