

Effect of Planting Techniques on Mangrove Seedling Establishment in Kuwait Bay

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Abstract : Mangroves are halophytic shrubs habituated in the intertidal zones in the tropics and subtropics, forming a complex and highly dynamic coastal ecosystem. Historical evidence indicating the existence followed by the extinction of mangrove in Kuwait; hence, continuous projects have been established to reintroduce this plant to the marine ecosystem. One of the major challenges in establishing large-scale mangrove plantations in Kuwait is the very high rate of seedling mortality, which should ideally be less than 20%. This study was conducted at three selected locations in the Kuwait bay during 2016-2017, to evaluate the effect of four planting techniques on mangrove seedling establishment. Coir-pillow planting technique, comp-mat planting technique, and anchored container planting technique were compared with the conventional planting method. The study revealed that the planting techniques significantly affected the establishment of mangrove seedlings in the initial stages of growth. Location-specific difference in seedling establishment was also observed during the course of the study. However, irrespective of the planting techniques employed, high seedling mortality was observed in all the planting locations towards the end of the study; which may be attributed to the physicochemical characteristics of the mudflats selected.

Keywords : *Avicennia marina* (Forsk.) Vierh, coastal pollution, heavy metal accumulation, marine ecosystem, sedimentation, tidal inundation

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