

Abstract

Replicate azoic and organic-free sediments from a natural *Rhizophora mucronatamangrove* were enriched with similar amounts of mangrove and seagrass leaf litter to the natural organic concentration to establish which sources of litter most influence meiofaunal re-colonisation of reforested *R. mucronatamangrove* sediments in Gazi Bay. Sediments were incubated in 70 cc syringes with screened openings on the sides, allowing meiofaunal colonisation from the natural mangrove sediments in which they were buried. Controls were syringes filled with azoic sediment. The syringes were retrieved on days 1, 14, 30 and 60 days post-placement. Replicate cores were taken on the first day of the experiment to provide baseline data on the meiofaunal densities and community composition. Recolonisation occurred one day post-placement and meiofauna responded more to the addition of mangrove leaf litter, attaining the highest meiofaunal densities by the end of the experiment. ANOVA revealed a significant ($p < 0.05$) litter source effect between mangrove and seagrass leaf litter, especially 30 days post-placement