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Effect of seasonal changes on abundance and heavy metal accumulation in the marine polychaete *Nereis succinea*

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Effect of seasonal changes on uptake of dissolved ions of Pb, Cu, Cr, Zn, Mn and Fe as related to chemical and physical water criteria was investigated in the marine polychaete Nereis succinea. Studied species was collected from nonpolluted site; the marine biological station (MBS) and polluted site; the fish port station (FPS) at Hurghada, Red sea. The seasonal means of ecological factors were significantly differed between the two studied sites; pH ($P<0.05$), dissolved oxygen ($P<0.05$) turbidity ($P<0.01$) and conductivity ($P<0.01$). The abundance of Nereis succinea exhibited highly significant difference ($P<0.01$) between MBS and FBS sites. LSD multicomparison revealed high significant difference ($P<0.01$) between the means of Nereis abundance at all seasons except in winter and autumn between the two sites and winter and spring in MBS only. MANOVA test revealed that the seasonal means of concentration of all studied metals in Nereis tissue, exhibited high significance ($P<0.01$) at both sites, except in the case of lead. MANOVA showed that the BAFs of studied metals may be depending on the environmental factors as well as season and site variations. All BAFs at FBS gave the significant level ($P<0.01$), while at MBS the same level of significance was observed for Pb, Cd and Cu and ($P<0.05$) for Fe.

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