

## LIST OF TABLES

Figure No.	Title	Page No.
1.1	Major trace elements in effluents from various industries	4
1.2	Classification of elements according to toxicity and availability	11
1.3	The physiological role of essential elements in plants and animals ICP-AES operating parameters	15
2.1	Effect of pH on the complexation of metals from Amberlite	55
3.1	XAD-16 coated with PBHCD	79
3.2	Effect of acid concentration on elution of metals	82
3.3	Effect of sample volume on elution of metal ions	84
3.4	Tolerance limits of matrix ions for Determination of Cu(II), Mn(II) and Zn(II) by the Proposed Method	88
3.5	Determination of trace metal ions in Standard Reference Materials (NIST 1643e water) by the proposed method ( $n = 5$ )	89
3.6	Determination of Cu(II), Mn(II) and Zn(II) in natural water samples ( $n=5$ )	90
3.7	Determination of Cu(II), Mn(II) and Zn(II) in leafy vegetable samples	91
4.1	Effect of pH on the complexation of metals from Amberlite XAD-2 coated with NPTT	105
4.2	Recovery of trace metals Pb(II), Ni(II), Cu(II) and Cd(II) using various eluents	108
4.3	Effect of sample volume on elution of metal ions	109
4.4	Tolerance limits of matrix ions for determination of Pb(II), Ni(II), Cu(II) and Cd(II) by the proposed method ( $n=5$ )	113
4.5	Determination of trace metal ions in various water samples	114
4.6	Determination of trace metal ions in various food samples ( $\text{mg g}^{-1}$ )	115
4.7	Comparative data from some recent studies on off-line SPE systems based on use of Amberlite resins	117

5.1	Effect of pH on the complexation of metals from Amberlite XAD-16 coated with HPTT	129
5.2	Recovery of trace metals Cu(II), Fe(II), Co(II), and Mn(II) using various eluents	131
5.3	Effect of sample volume on elution of metal ions	133
5.4	Optimum experimental conditions for the sorption and desorption of metal ions on Amberlite XAD-16-HPTT resin	135
5.5	Tolerance Limits of Matrix Ions for Determination of Cu(II), Fe(II), Co(II) and Mn(II) by the Proposed Method ( $n=5$ )	136
5.6	Recovery of trace metals from standard reference materials after preconcentration on Amberlite XAD-16-HPTT resin	138
5.7	Determination of trace metal ions in various water samples	139
5.8	Determination of trace metal ions in vegetable samples ( $\mu\text{g g}^{-1}$ )	140