**LIST OF ILLUSTRATIONS**

<table>
<thead>
<tr>
<th>Fig. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Temporal variations of soil dehydrogenase activity in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.2</td>
<td>Temporal variations of mitochondrial ATPase at early vegetative stage of <em>Triticum aestivum</em> in response to different effluent concentrations of effluent</td>
</tr>
<tr>
<td>4.3</td>
<td>Temporal variations of DNA content at early vegetative stage of <em>Triticum aestivum</em> in response to different effluent concentrations of effluent</td>
</tr>
<tr>
<td>4.4</td>
<td>Temporal variations of RNA content at early vegetative stage of <em>Triticum aestivum</em> in response to different effluent concentrations of effluent</td>
</tr>
<tr>
<td>4.5</td>
<td>Variations of sugar in the leaves of the <em>Triticum aestivum</em> at various time intervals in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.6</td>
<td>Variations of nitrate reductase activity in the leaves of the <em>Triticum aestivum</em> at various time intervals in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.7</td>
<td>Variations of proteins in the leaves of the <em>Triticum aestivum</em> at various time intervals in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.8</td>
<td>Variations of non-structural carbohydrates in the leaves of the <em>Triticum aestivum</em> at various time intervals in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.9</td>
<td>Variations of sodium contents in the leaves of the <em>Triticum aestivum</em> in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.10</td>
<td>Variations of potassium contents in the leaves of the <em>Triticum aestivum</em> at various time intervals in response to different concentrations of effluent</td>
</tr>
<tr>
<td>4.11</td>
<td>Variations of organic carbon in the leaves of the <em>Triticum aestivum</em> in response to different concentrations of effluent</td>
</tr>
</tbody>
</table>
4.12 Variations of nitrogen contents in the leaves of the *Triticum aestivum* in response to different concentrations of effluent.

4.13 Variations of dry matter content (%) in *Triticum aestivum* at various time intervals in response to different concentrations of effluent.

4.14 Variations of relative water contents (%) in the leaves of *Triticum aestivum* at various time intervals in response to different concentrations of effluent.

4.15 Penicle length of *Triticum aestivum* irrigated with different concentrations of effluent.

4.16 Grain number per penicle of the *Triticum aestivum* irrigated with different concentrations of effluent.

4.17 Weight of grains per penicle of the *Triticum aestivum* irrigated with different concentrations of effluent.

4.18 Effect of initial concentration of toxicants on biosorption by non-immobilized wheat straw.

4.19 Effect of initial concentration of toxicants on biosorption by immobilized wheat straw.

4.20 Freundlich adsorption isotherm for chromium removal by non-immobilized wheat straw.

4.21 Freundlich adsorption isotherm for nickel removal by non-immobilized wheat straw.

4.22 Freundlich adsorption isotherm for lead removal by non-immobilized wheat straw.

4.23 Freundlich adsorption isotherm for phenol removal by non-immobilized wheat straw.

4.24 Freundlich adsorption isotherm for chromium removal by immobilized wheat straw.

4.25 Freundlich adsorption isotherm for nickel removal by immobilized wheat straw.
4.26 Freundlich adsorption isotherm for lead removal by immobilized wheat straw

4.27 Freundlich adsorption isotherm for phenol removal by immobilized wheat straw

4.28 Effect of initial concentration of toxicants on biosorption by non-immobilized *A. sydowi* dead biomass

4.29 Effect of initial concentration of toxicants on biosorption by immobilized *A. sydowi* beads

4.30 Freundlich adsorption isotherm for chromium removal by non-immobilized *A. sydowi*

4.31 Freundlich adsorption isotherm for nickel removal by non-immobilized *A. sydowi*

4.32 Freundlich adsorption isotherm for lead removal by non-immobilized *A. sydowi*

4.33 Freundlich adsorption isotherm for phenol removal by non-immobilized *A. sydowi*

4.34 Freundlich adsorption isotherm for chromium removal by immobilized *A. sydowi*

4.35 Freundlich adsorption isotherm for nickel removal by immobilized *A. sydowi*

4.36 Freundlich adsorption isotherm for lead removal by immobilized *A. sydowi*

4.37 Freundlich adsorption isotherm for phenol removal by immobilized *A. sydowi*

4.38 Effect of initial concentration of toxicants on biosorption by non-immobilized *A. niger* dead biomass

4.39 Effect of initial concentration of toxicants on biosorption by immobilized *A. niger* beads

4.40 Freundlich adsorption isotherm for chromium removal by non-immobilized *A. niger*

4.41 Freundlich adsorption isotherm for nickel removal by non-immobilized *A. niger*
4.42 Freundlich adsorption isotherm for lead removal by non-immobilized *A. niger*

4.43 Freundlich adsorption isotherm for phenol removal by non-immobilized *A. niger*

4.44 Freundlich adsorption isotherm for chromium removal by immobilized *A. niger*

4.45 Freundlich adsorption isotherm for nickel removal by immobilized *A. niger*

4.46 Freundlich adsorption isotherm for lead removal by immobilized *A. niger*

4.47 Freundlich adsorption isotherm for phenol removal by immobilized *A. niger*

4.48 Effect of initial concentration of toxicants on biosorption by non-immobilized *P. janthinellum* dead biomass

4.49 Effect of initial concentration of toxicants on biosorption by immobilized *P. janthinellum* beads

4.50 Freundlich adsorption isotherm for chromium removal by non-immobilized *P. janthinellum*

4.51 Freundlich adsorption isotherm for nickel removal by non-immobilized *P. janthinellum*

4.52 Freundlich adsorption isotherm for lead removal by non-immobilized *P. janthinellum*

4.53 Freundlich adsorption isotherm for phenol removal by non-immobilized *P. janthinellum*

4.54 Freundlich adsorption isotherm for chromium removal by immobilized *P. janthinellum*

4.55 Freundlich adsorption isotherm for nickel removal by immobilized *P. janthinellum*

4.56 Freundlich adsorption isotherm for lead removal by immobilized *P. janthinellum*

4.57 Freundlich adsorption isotherm for phenol removal by immobilized *P. janthinellum*
4.58 Effect of initial concentration of toxicants on biosorption by Ca-alginate beads

4.59 Freundlich adsorption isotherm for chromium removal by Ca-alginate beads

4.60 Freundlich adsorption isotherm for nickel removal by Ca-alginate beads

4.61 Freundlich adsorption isotherm for lead removal by Ca-alginate beads

4.62 Freundlich adsorption isotherm for phenol removal by Ca-alginate beads

4.63 Biosorption of toxicants from refinery effluent by non-immobilized dead biomass

4.64 Biosorption of toxicants from refinery effluent by immobilized biosorbents beads