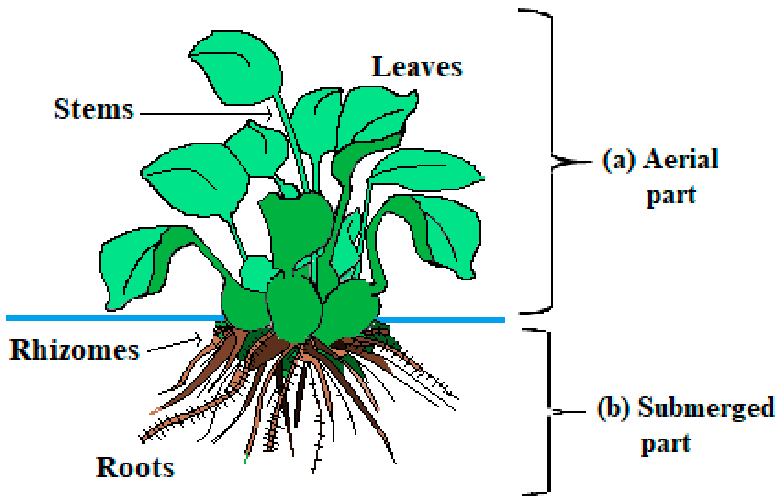


**Figure S1.** Water hyacinth structure. (**a**) Stems and leaves, (**b**) Rhizomes and roots.

**Table S1.** Correlation matrix of physicochemical parameters.

| | DO (mg/L) | Temp (°C) | pH | ORP (mV) | Turb (NTU) | EC (µS/cm) |
|---|---|---|---|---|---|---|
| DO (mg/L) | 1 | - | - | - | - | - |
| Temp (°C) | | 1 | - | −0.547 * | - | - |
| pH | | | 1 | - | - | - |
| ORP (mV) | | | | 1 | - | - |
| Turb (NTU) | | | | | 1 | 0.953 * |
| EC (µS/cm) | | | | | | 1 |

* significantly at $p < 0.05$.

**Table S2.** Uptake of potential toxic metals by *Eichhornia crassipes* from different types of water treated.

| Type of water treated | PTM | Maximum potential toxic metal content (mg/Kg d.w.) | | | Factors | | General conditions | References |
|---|---|---|---|---|---|---|---|---|
| | | Submerged part | Aerial part | Whole plant | BF | TF | | |
| Tap water | As | 81.0 * | - | - | 275 | - | Artificial system of 65 L plastic tubes with. Experiment was run for 3 weeks. Plants were grown with the Hoagland solution. | [1] |
| | Cu | 2838.0 * | - | - | 1763 | - | | |
| | Zn | 3544.0 * | - | - | 1046 | - | | |
| | Hg | 1634.0 * | - | - | 1552 | - | | |
| Effluent from a Steel Foundry | Zn | 0.4 * | 1.1 [b] | 1.5 | - | 2.48 | Artificial system of 34 × 30 cm tubes size with 10 liters of water. Young plants collected from their natural habitat were selected for the experiment | [2] |
| | As | 0.7 * | 0.6 [b] | 1.3 | - | 0.84 | | |
| | Pb | 0.7 * | 3.0 [b] | 3.8 | - | 4.21 | | |
| | Cr | 1.0 * | 0.7 [b] | 1.7 | - | 0.68 | | |
| | Cd | 0.01 | - | 0.02 | - | - | | |
| Tailings drainage water | Ba | 600.0 * | 120.0 [a] | 720.0 | 10,040 * | 0.12 [d] | Experiment was conducted in a pond containing waste materials produced by the cyanidation of the primary polymetallic ores. Water hyacinths were grown in greenhouse and relocated into the pond. | [3] |
| | Mo | 13.0 * | 23.0 [a] | 36.0 | 24,360 * | 0.85 [d] | | |
| | Pb | 85.0 * | 10.0 [a] | 95.0 | 18,800 * | 0.06 [d] | | |
| | Cd | 2.1 | 2.6 [a] | 4.7 | 3750 | 1.2 | | |
| River water | Cr | 17.2 * | - | - | 751 | - | Water samples and Water hyacinths samples were collected from Lerma River, in the North of Toluca, México. | [4] |
| | Cu | 21.5 * | - | - | 594 | - | | |
| | Pb | 7.2 * | - | - | 1210 | - | | |
| | Zn | 91.2 * | - | - | 1341 | - | | |
| | Ni | 10.8 * | - | - | 2156 | - | | |
| | Ti | 325.0 * | - | - | 16,250 | - | | |
| Hoagland solution | Pb | - | - | 300 | 440 | - | Pot experiment was carried out in the laboratory. Water hyacinths were collected from a pond. Pb and Cd levels in water were 80 and 8 mg/L, respectively. | [5] |
| | Cd | - | - | 64 | 12 | | | |
| River water | Cr | 1.6 * | 0.4 | - | 2.4 | - | An artificial wetland (AW) was constructed near the river Indus (Pakistan). The AW was filled with *Eichhornia crassipes* (at the age of 13-weeks). The HRTC was 40 h. | [6] |
| | Cu | 5.2 * | 2.2 | - | 3.1 | - | | |
| | Ni | 5.0 * | 2.3 | - | 2.2 | - | | |
| | Pb | 5.7 * | 2.8 | - | 3.8 | - | | |
| | Cd | 3.2 * | 1.8 | | 3.4 | - | | |
| Natural water from a reservoir | Zn | 1900.0 * | 420.0 | - | 4000 | 0.22 [d] | Several polyethylene containers (150 to 285 L.) were filled with *Eichhornia crassipes* (6 weeks old) and natural water from Novosibirskoye reservoir, | [7] |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Cu | 2300.0 * | 110.0 | - | 9000 | 0.04 [d] | Russian Federation. 4 days of HRTC and pH 8 | |
| | Pb | 2060.0 | 120.0 | - | 8000 | 0.06 [d] | | |
| | Cd | 270 | 70 | - | | 0.26 [d] | | |
| Saline water | As | 0.2 | 0.4 | - | 20 | 2.38 | Water samples and water hyacinth samples were collected from estuary Ondo state, Niger delta zone. Commercial activities in the area are carried out with speedboats used for transportation of goods by the people while inhabitants of some parts of the estuary use the water for recreational purpose | [8] |
| | Cu | 31.4 | 56.5 | - | 24 | 1.80 | | |
| | Cr | 5.0 | 10.1 | - | 111 | 2.00 | | |
| | Ni | 0.7 | 1.4 | - | 12 | 1.96 | | |
| | Pb | 0.4 | 0.6 | - | 21 | 1.67 | | |
| | Zn | 131.8 | 223.0 | - | 40 | 1.69 | | |
| | V | 1.5 | 3.3 | - | 16 | 2.25 | | |
| Hoagland solution | Cr | 1250.0 * | 45.0 | - | 1515 | - | Mature E. crassipes plants were collected from the Oba dam at the University of Ibadan in Nigeria and placed in nutrient solution with toxic metals. 21 days of experimentation was carried out in which plastic buckets containing. Acidic nutrient solutions (pH 5.5) were used in this study to prevent heavy metal precipitation. | [9] |
| | Cu | 600.0 * | 29.0 | - | 1298 | - | | |
| | Ni | 400.0 * | 43.0 | - | 1104 | - | | |
| | Pb | 600.0 * | 43.0 | - | 1048 | - | | |
| | Zn | 2500.0 * | 72.0 | - | 2552 | - | | |
| | Hg | ~30 | ~0 | - | 385 | | | |
| Secondary treated municipal wastewater | Cr | 620.0 * | 421.0 [b] | - | 516 [d] | 0.66 | Water hyacinths were cultured in 150 L capacity of glass aquariums filled with 95 L of secondary treated municipal wastewater collected from Dinapur Sewage Treatment Plant. Highest removal was recorded at 20th day of experimentation. | [10] |
| | Cu | 570.0 * | 340.0 [b] | - | 5181 [d] | 0.60 | | |
| | Zn | 480.0 * | 250.0 [b] | - | 521 [d] | 0.52 | | |
| | Ni | 280.0 * | 140.0 [b] | - | 3733 [d] | 0.50 | | |
| | Cd | 620 | 320 [b] | | 6888.8 [d] | 0.58 | | |
| Hoagland solution | Cu | 23,387.0 * | 59.5 | - | 823 | - | E. crassipes and water were collected from Matanza-Riachuelo river, Argentina. 6-L plastic reactors containing Hoagland solution. | [11] |
| Water from a former mining pond | As | 1.1 * | 0.2 | - | 0.03 | 0.16 | The former mining pond in Bidor, Perak State, Peninsular Malaysia. Experimentation was carried out in dry sason. Water hyacinth plant samples were collected from the same pond. The plant samples were cut into two parts, namely shoots and roots. | [12] |
| | Cr | 7.5 * | 0.3 | - | 0.08 | 0.04 | | |
| | Cu | 497.0 * | 145.0 | - | 2.63 | 0.30 | | |
| | Ni | 127.0 * | 81.0 | - | 12.8 | 0.63 | | |
| | Pb | 422.0 * | 534.0 | - | 6.9 | 1.20 | | |
| | Zn | 1091.0 * | 3506.0 | - | 25 | 3.21 | | |
| | Hg | 1.3 * | 0.7 | - | - | 0.5 | | |
| Effluent from a coal mine | Cr | 132.7 | 52.3 [b] | - | - | 0.31 | Hydrophytes were collected from the Agrofarm pond of the Banaras Hindu University, Varanasi, India. Plants were cultured in 150 L capacities of glass aquariums containing mining effluent collected from an open cast coal mine. | [13] |
| | Co | 45.7 | 28.2 [b] | - | - | 0.61 | | |
| | Pb | 215.7 | 60.2 [b] | - | - | 0.27 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ni | 128.9 | 52.7 [b] | - | - | 0.43 | Values reported after 20th day of operation |
| | Cd | 3.2 | 1.0 [b] | - | - | 0.31 | |

* Roots, [a] Stem and leaves, [b] Leaves, [c] Hydraulic retention time, [d] Calculated from information provided, [e] Mean values ± SD (VAL01, VAL02 and VAL03 (n = 3)), BDL = below detection limit.

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