

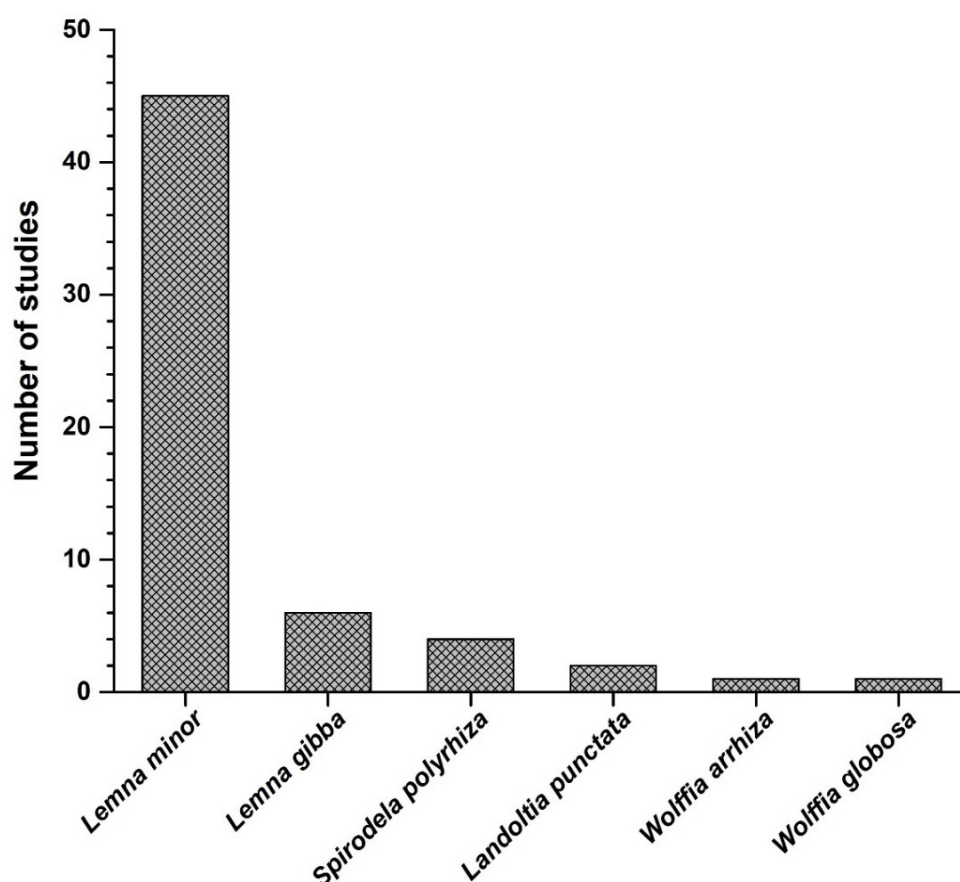
Comparative phytotoxicity of metallic elements on the duckweed *Lemna gibba* L. using growth- and chlorophyll fluorescence induction-based endpoints

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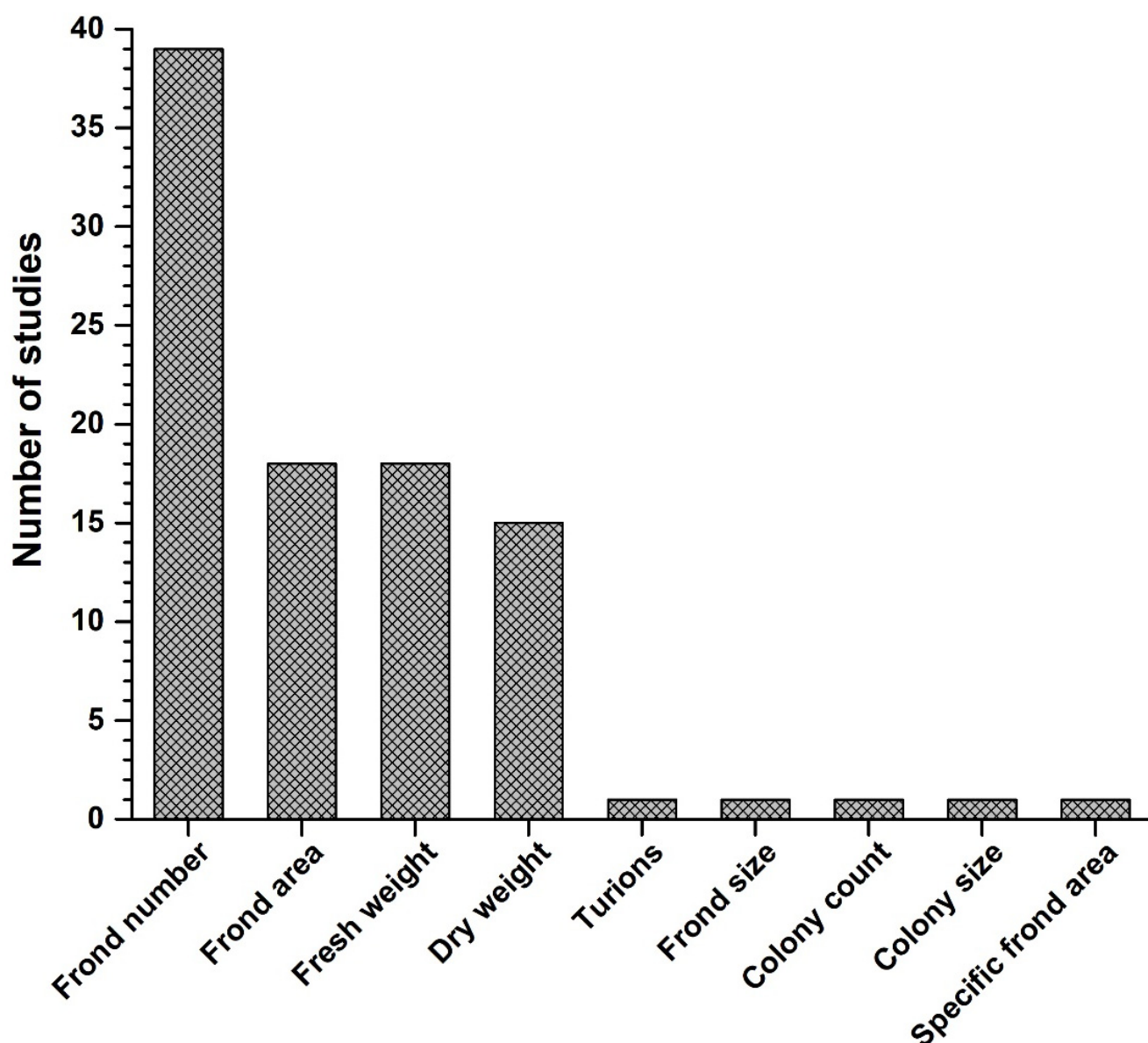
This supplementary file consists of the studied species, parameters within the three endpoint-groups and the references used for the upset plot provided as **Figure. 1** in the main text of this study. We reviewed a total of 123 studies related to duckweed toxicity testing according to OECD (2006) [1] protocol. The following keywords were used in Scopus search engine, accessed on November 11, 2023:

“duckweed AND toxicity AND endpoint AND oecd AND PUBYEAR > 2012 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE,"j"))”

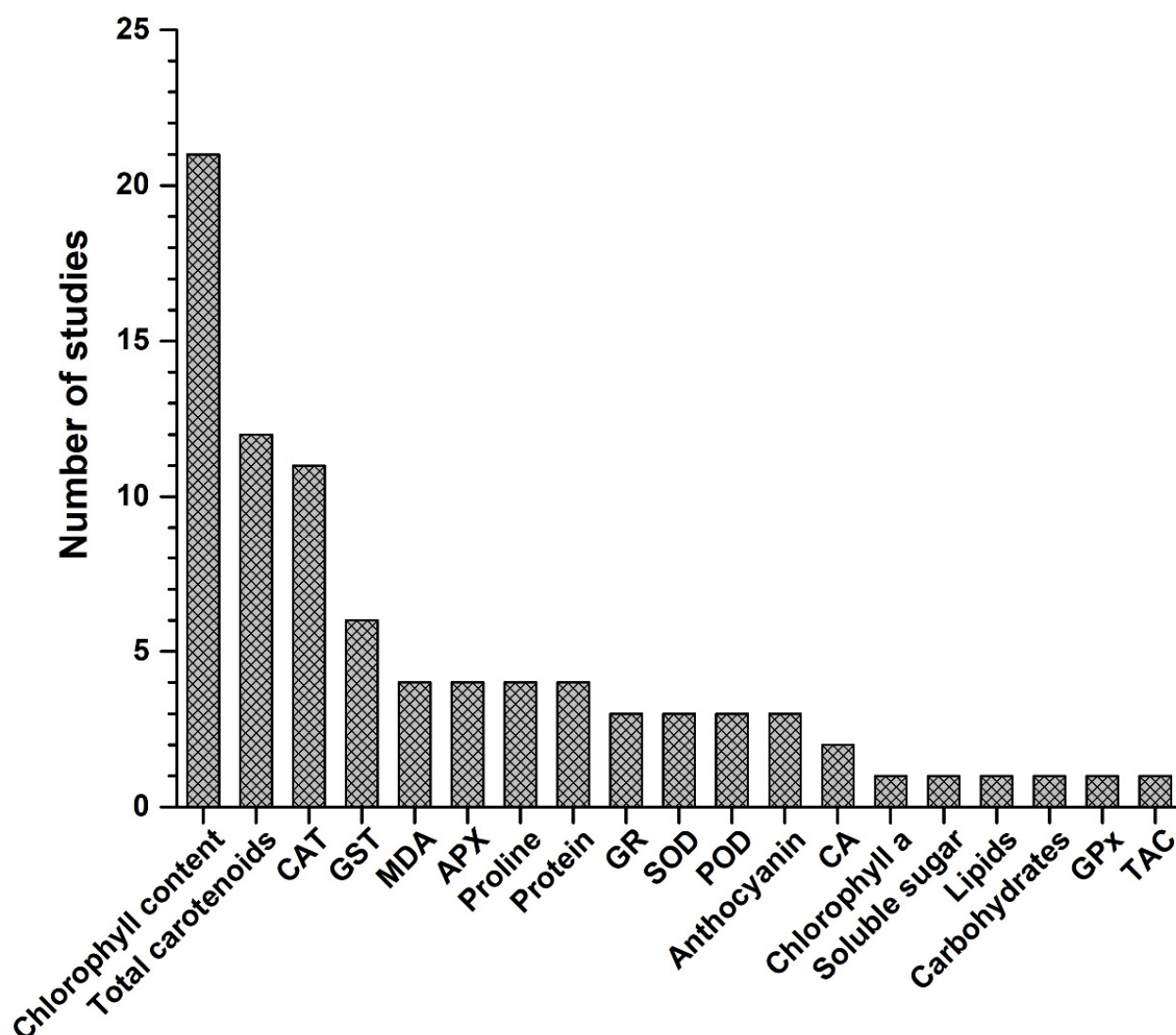
The results of this meta-analysis are based on 53 relevant studies [2–54] out of the total 123 studies found using the search keywords. The outcomes are provided as **Figure. 1** (part of the main text) and metadata figures (S1-S4; given below), while the references are provided at the end of this file.



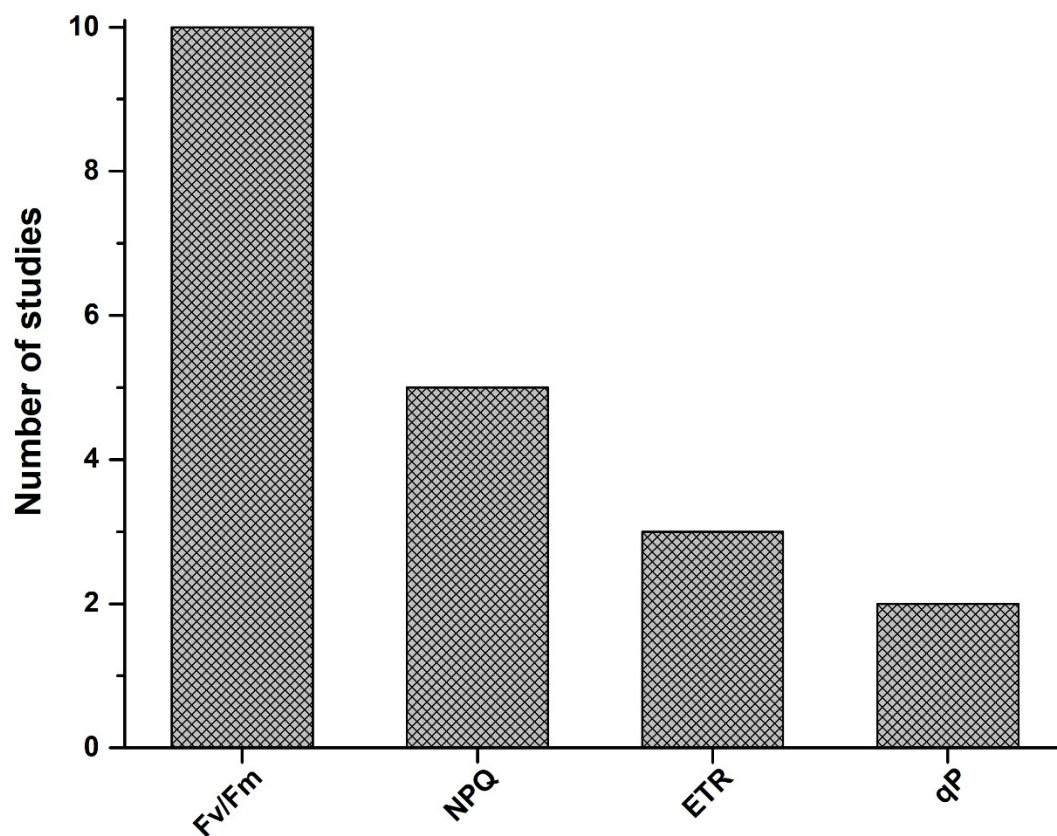
Metadata Figure S1. The occurrence of the studied duckweed species (*L. minor* [2–4,6–10,12–29,31–36,38–40,43,45–50,52–54], *L. gibba* [27,32,37,41,42,44], *S. polyrhiza* [5,9,17,36], *Land. Punctata* [30,51], *W. arrhiza* [9], *W. globosa* [11]) in different ecotoxicological studies conducted according to OECD (2006) [1] guidelines, using growth-, biochemistry- and ChlF-based endpoints.



Metadata Figure S2. The occurrence of the studied growth and morphology-based test endpoints including frond number [1–6,9–13,15–22,24,26–29,31,32,34,35,37–47,49–54], frond area [5,8,9,12,17,19,22,23,30,34,36,41,42,46–48,52,54], fresh weight [13,14,23,25,29,31–33,39,40,42,45–47,50,52–54], dry weight [7,9,10,16,18,28,32,34,39,42,43,46,47,53,54], turions [5], frond size [42], colony count [32], colony size [40] and specific frond area [42] used in different ecotoxicological studies according to the OECD (2006) [1] guidelines.



Metadata Figure S3. The occurrence of the studied biochemical markers as test endpoints including chlorophyll content [2–4,8,14,15,19,24–27,34,35,37–39,42,44,45,47,52], total carotenoids [8,24,26,27,34,37,38,42,44,45,47,52], catalase (CAT) [8,14,24,26,27,37,38,40,44,47,54], glutathione S-transferases (GST) [8,24,26,37,40,44], malondialdehyde (MDA) [2,3,14,34], ascorbate peroxidase (APx) [14,24,37,54], glutathione reductase (GR) [14,37,54], superoxide dismutase (SOD) [14,37,54], peroxidase (POD) [14,47,54], anthocyanin [27,38,42], carbonic anhydrase (CA) [26,44], chlorophyll a [22], soluble sugars [14], lipids [35], carbohydrates [35], glutathione peroxidase (GPx) [40] and total antioxidant capacity (TAC) [35] used in different ecotoxicological studies according to the OECD (2006) [1] guidelines.



Metadata Figure S4. The frequency of the studied ChlF-based test endpoints used in different ecotoxicological studies according to the OECD (2006) [1] guidelines. The studied endpoints in this figure include Fv/Fm (denotes the maximal quantum yield of PSII in dark-adapted state) [10,13,14,17,27,34,46,47,52,53], NPQ (stands for non-photochemical quenching) [17,34,46,52,53], ETR (Electron transport rate) [17,34,46] and qP (photochemical quenching) [52,53].

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