a)

3.00
2.50
2.00
1.50
1.00
0.50
0.00
Concentration [mg/L]
0
5
10
15
20
25
30
35
40
45
50
55
60
Time [min]
Pl
Sp
Dp

b)

35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Conductivity [uS/cm]
0
5
10
15
20
25
30
35
40
45
50
55
60
Time [min]
Pl
Sp
Dp

c)

Figure S1. Changes in physicochemical parameters in Ni solution during the accumulation process on moss gametophytes: a) its concentration, b) conductivity, c) pH

a)

b)

c)

Figure S2. Changes in physicochemical parameters in Zn solution during the accumulation process on moss gametophytes: a) its concentration, b) conductivity, c) pH

a)

Concentration [mg/L]
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0 5 10 15 20 25 30 35 40 45 50 55 60
Time [min]
Pl
Sp
Dp

b)

Conductivity [uS/cm]
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
0 5 10 15 20 25 30 35 40 45 50 55 60
Time [min]
Pl
Sp
Dp

c)

pH [-]
5.00
4.50
4.00
3.50
0 5 10 15 20 25 30 35 40 45 50 55 60
Time [min]
Pl
Sp
Dp

Figure S3. Changes in physicochemical parameters in Cd solution during the accumulation process on moss gametophytes: a) its concentration, b) conductivity, c) pH

a)

b)

c)

Figure S4. Changes in physicochemical parameters in Pb solution during the accumulation process on moss gametophytes: a) its concentration, b) conductivity, c) pH

Table S1. Concentrations of metals naturally accumulated in the mosses used for the experiments [mg/g d.w.]

Biomonitor	Ni	Cu	Zn	Cd	Pb
P. schreberi	< 0.001	< 0.001	0.04	< 0.0003	0.003
S. fallax	< 0.001	< 0.001	0.03	< 0.0003	< 0.002
D. polysetum	< 0.001	< 0.001	0.04	< 0.0003	< 0.002