***Supplementary Material***

1. **Supplementary Tables**

**Supplementary Table 1.** pH and SOM (%) in soil at the beginning (T0) and at the end (T112) of the experiment.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **pH** | | | | | | **SOM (%)** | | | | | |
|  | T0 | | | T112 | | | T0 | | | T112 | | |
| C | 7.75 | ± | 0.06 | 7.57 | ± | 0.01 | 8.41 | ± | 0.18 | 8.13 | ± | 0.26 |
| CEf |  |  |  | 7.50 | ± | 0.06 |  |  |  | 8.48 | ± | 0.37 |
| CEfLs |  |  |  | 7.52 | ± | 0.03 |  |  |  | 7.60 | ± | 0.17 |
| CLs |  |  |  | 7.63 | ± | 0.02 |  |  |  | 8.02 | ± | 0.13 |

**Supplementary Table 2.** PCB and PCDD/Fs total and congeners concentrations (ng/kg) in contaminated soil at the beginning (C\_T0) and at the end (“Treatment”\_T112) of the experiment.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Congeners** | **C\_T0** | | | **C\_T112** | | | **CEf\_T112** | | | **CEfLs\_T112** | | | **CLs\_T112** | | |
| **PCB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PCB1 | 446.00 | ± | 169.54 | 738.00 | ± | 130.98 | 1010.67 | ± | 198.13 | 367.33 | ± | 88.88 | 529.67 | ± | 235.36 |
| PCB101 | 5146.67 | ± | 1344.24 | 4646.67 | ± | 485.29 | 6606.67 | ± | 383.03 | 3203.33 | ± | 469.41 | 7406.67 | ± | 658.04 |
| PCB104 | 0.50 | ± | 0.00 | 1.97 | ± | 0.47 | 2.93 | ± | 1.04 | 1.83 | ± | 0.36 | 2.67 | ± | 0.41 |
| PCB105 | 3956.67 | ± | 586.52 | 1820.00 | ± | 25.17 | 1683.33 | ± | 69.36 | 1690.00 | ± | 115.04 | 1663.33 | ± | 137.76 |
| PCB110 | 7853.33 | ± | 1510.91 | 12666.67 | ± | 1466.67 | 19133.33 | ± | 1281.06 | 8810.00 | ± | 1863.18 | 20800.00 | ± | 1517.67 |
| PCB114 | 95.10 | ± | 12.40 | 125.67 | ± | 12.73 | 120.33 | ± | 3.18 | 149.67 | ± | 7.88 | 120.40 | ± | 14.69 |
| PCB118 | 7110.00 | ± | 1682.88 | 2826.67 | ± | 161.90 | 2536.67 | ± | 130.43 | 2833.33 | ± | 116.81 | 2470.00 | ± | 251.20 |
| PCB123 | 558.00 | ± | 49.70 | 186.67 | ± | 14.11 | 264.33 | ± | 19.92 | 242.67 | ± | 38.74 | 176.67 | ± | 11.41 |
| PCB126 | 29.53 | ± | 3.92 | 19.67 | ± | 0.42 | 290.00 | ± | 19.31 | 110.27 | ± | 88.37 | 241.90 | ± | 113.28 |
| PCB128 | 2194.33 | ± | 910.78 | 4223.33 | ± | 213.02 | 4106.67 | ± | 620.71 | 3633.33 | ± | 535.73 | 5020.00 | ± | 511.60 |
| PCB138 | 29033.33 | ± | 2026.77 | 15900.00 | ± | 945.16 | 15500.00 | ± | 503.32 | 20300.00 | ± | 1159.02 | 15466.67 | ± | 1650.59 |
| PCB146 | 3680.00 | ± | 321.87 | 2013.33 | ± | 153.01 | 1896.67 | ± | 56.96 | 2350.00 | ± | 92.92 | 1956.67 | ± | 222.81 |
| PCB149 | 14600.00 | ± | 1582.19 | 7516.67 | ± | 759.26 | 7513.33 | ± | 239.88 | 9796.67 | ± | 359.64 | 7683.33 | ± | 1000.11 |
| PCB15 | 1290.00 | ± | 197.32 | 810.33 | ± | 36.67 | 699.00 | ± | 16.80 | 910.67 | ± | 39.98 | 714.33 | ± | 86.39 |
| PCB151 | 5666.67 | ± | 540.41 | 1979.00 | ± | 589.49 | 2433.33 | ± | 112.60 | 3340.00 | ± | 174.74 | 2456.67 | ± | 430.56 |
| PCB153 | 28466.67 | ± | 1779.83 | 10750.00 | ± | 563.47 | 11066.67 | ± | 317.98 | 14400.00 | ± | 781.02 | 10923.33 | ± | 1154.07 |
| PCB155 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 |
| PCB156 | 2383.33 | ± | 123.47 | 1286.67 | ± | 26.67 | 1176.67 | ± | 69.36 | 1296.67 | ± | 50.44 | 1236.67 | ± | 127.06 |
| PCB157 | 853.33 | ± | 106.98 | 533.00 | ± | 16.26 | 432.00 | ± | 26.56 | 503.00 | ± | 31.05 | 500.00 | ± | 32.58 |
| PCB167 | 909.00 | ± | 66.46 | 656.33 | ± | 39.62 | 609.33 | ± | 87.06 | 1349.67 | ± | 390.87 | 630.33 | ± | 36.50 |
| PCB169 | 549.33 | ± | 6.44 | 5.17 | ± | 0.75 | 3.44 | ± | 1.06 | 4.89 | ± | 0.77 | 4.95 | ± | 0.53 |
| PCB170 | 21666.67 | ± | 3435.27 | 13500.00 | ± | 585.95 | 11500.00 | ± | 435.89 | 13633.33 | ± | 952.77 | 12000.00 | ± | 953.94 |
| PCB177 | 9386.67 | ± | 1413.95 | 5503.33 | ± | 423.57 | 4233.33 | ± | 197.01 | 5133.33 | ± | 443.82 | 4566.67 | ± | 356.20 |
| PCB180 | 51100.00 | ± | 7824.96 | 25533.33 | ± | 833.33 | 22866.67 | ± | 674.12 | 28200.00 | ± | 1709.78 | 23333.33 | ± | 2049.66 |
| PCB183 | 6026.67 | ± | 872.72 | 4260.00 | ± | 409.51 | 3683.33 | ± | 140.51 | 4363.33 | ± | 273.03 | 3926.67 | ± | 457.98 |
| PCB187 | 23633.33 | ± | 2425.79 | 16400.00 | ± | 1053.57 | 13600.00 | ± | 1410.67 | 17733.33 | ± | 1020.35 | 15233.33 | ± | 1329.58 |
| PCB188 | 8.26 | ± | 1.48 | 3.48 | ± | 0.12 | 3.41 | ± | 0.12 | 3.94 | ± | 0.23 | 3.60 | ± | 0.29 |
| PCB189 | 542.00 | ± | 44.75 | 298.33 | ± | 10.84 | 254.33 | ± | 19.64 | 252.33 | ± | 21.79 | 269.33 | ± | 23.10 |
| PCB19 | 0.50 | ± | 0.00 | 7.00 | ± | 2.92 | 1.37 | ± | 0.44 | 13.13 | ± | 1.45 | 10.39 | ± | 4.48 |
| PCB202 | 1653.33 | ± | 135.44 | 1105.00 | ± | 79.74 | 870.33 | ± | 39.93 | 1007.33 | ± | 44.20 | 946.33 | ± | 94.94 |
| PCB205 | 528.33 | ± | 37.03 | 6410.00 | ± | 496.02 | 5163.33 | ± | 189.06 | 6690.00 | ± | 55.68 | 5456.67 | ± | 664.19 |
| PCB206 | 4493.33 | ± | 534.83 | 2806.67 | ± | 151.03 | 2406.67 | ± | 107.29 | 2570.00 | ± | 170.88 | 2503.33 | ± | 213.10 |
| PCB208 | 970.67 | ± | 133.56 | 482.33 | ± | 111.18 | 443.00 | ± | 23.52 | 472.67 | ± | 32.22 | 544.00 | ± | 16.26 |
| PCB209 | 14233.33 | ± | 2444.27 | 10836.67 | ± | 578.51 | 10170.00 | ± | 750.27 | 10513.33 | ± | 1085.44 | 7500.00 | ± | 1129.70 |
| PCB28 | 413.63 | ± | 202.48 | 155.43 | ± | 61.88 | 173.33 | ± | 33.39 | 608.00 | ± | 182.79 | 353.67 | ± | 132.18 |
| PCB3 | 1257.00 | ± | 437.31 | 352.33 | ± | 12.68 | 403.33 | ± | 157.32 | 218.33 | ± | 23.24 | 239.33 | ± | 22.88 |
| PCB37 | 65.81 | ± | 33.24 | 64.63 | ± | 19.51 | 46.17 | ± | 18.09 | 42.93 | ± | 7.95 | 95.10 | ± | 11.44 |
| PCB4 | 210.00 | ± | 57.13 | 126.67 | ± | 6.84 | 140.67 | ± | 15.30 | 160.67 | ± | 15.84 | 114.97 | ± | 35.15 |
| PCB52 | 1794.67 | ± | 656.08 | 4163.33 | ± | 1953.05 | 788.33 | ± | 112.19 | 674.00 | ± | 57.00 | 1133.67 | ± | 173.58 |
| PCB54 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 | 0.50 | ± | 0.00 |
| PCB77 | 28.57 | ± | 4.42 | 269.20 | ± | 162.24 | 368.33 | ± | 197.67 | 59.13 | ± | 6.31 | 389.67 | ± | 12.67 |
| PCB81 | 26.63 | ± | 6.90 | 8.97 | ± | 1.09 | 12.17 | ± | 0.47 | 10.97 | ± | 0.12 | 10.38 | ± | 1.67 |
| PCB95 | 3883.33 | ± | 706.76 | 4456.67 | ± | 374.89 | 6770.00 | ± | 559.40 | 4050.00 | ± | 841.61 | 7440.00 | ± | 859.21 |
| PCB99 | 3033.33 | ± | 1155.95 | 1993.33 | ± | 258.28 | 3006.67 | ± | 198.10 | 1362.33 | ± | 353.52 | 3310.00 | ± | 301.39 |
| Total PCB | 259333.33 | ± | 10867.89 | 167333.33 | ± | 4666.67 | 164333.33 | ± | 3382.96 | 173000.00 | ± | 8326.66 | 169000.00 | ± | 15044.38 |
| **PCDD/PCDF** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OCDD | 1922.00 | ± | 861.93 | 731.67 | ± | 57.17 | 641.00 | ± | 69.09 | 517.33 | ± | 143.88 | 689.00 | ± | 58.81 |
| OCDF | 210.00 | ± | 31.79 | 124.67 | ± | 4.10 | 120.67 | ± | 1.33 | 156.67 | ± | 17.07 | 122.33 | ± | 11.84 |
| 1,2,3,7,8- PeCDD | 0.25 | ± | 0.00 | 0.25 | ± | 0.00 | 0.25 | ± | 0.00 | 0.25 | ± | 0.00 | 0.25 | ± | 0.00 |
| 2,3,7,8- TCDD | 29.77 | ± | 0.80 | 0.05 | ± | 0.00 | 0.05 | ± | 0.00 | 0.05 | ± | 0.00 | 0.05 | ± | 0.00 |
| 2,3,7,8- TCDF | 357.67 | ± | 26.72 | 210.33 | ± | 2.73 | 220.33 | ± | 11.46 | 269.00 | ± | 36.14 | 200.33 | ± | 8.45 |
| 1,2,3,7,8- PeCDF | 196.00 | ± | 16.29 | 115.33 | ± | 4.37 | 100.70 | ± | 3.73 | 117.27 | ± | 11.05 | 97.30 | ± | 6.09 |
| 2,3,4,7,8- PeCDF | 175.00 | ± | 8.33 | 101.87 | ± | 3.32 | 90.80 | ± | 5.10 | 116.33 | ± | 15.33 | 82.50 | ± | 4.76 |
| 1,2,3,4,7,8- HxCDD | 0.25 | ± | 0.00 | 2.93 | ± | 0.15 | 2.24 | ± | 0.56 | 1.07 | ± | 0.42 | 2.40 | ± | 0.60 |
| 1,2,3,4,7,8- HxCDF | 229.33 | ± | 21.28 | 140.00 | ± | 7.00 | 134.67 | ± | 5.78 | 175.67 | ± | 10.99 | 136.00 | ± | 8.50 |
| 1,2,3,6,7,8- HxCDD | 79.80 | ± | 7.69 | 4.56 | ± | 0.41 | 4.76 | ± | 0.91 | 7.14 | ± | 0.75 | 4.77 | ± | 0.41 |
| 1,2,3,6,7,8- HxCDF | 71.80 | ± | 10.60 | 145.33 | ± | 7.22 | 40.43 | ± | 2.00 | 46.07 | ± | 1.68 | 38.93 | ± | 2.41 |
| 2,3,4,6,7,8- HxCDF | 53.07 | ± | 3.90 | 29.33 | ± | 0.07 | 30.83 | ± | 1.27 | 49.87 | ± | 10.45 | 26.23 | ± | 2.22 |
| 1,2,3,4,6,7,8- HpCDD | 84.30 | ± | 9.36 | 16.90 | ± | 0.59 | 15.27 | ± | 0.66 | 9.02 | ± | 4.40 | 14.10 | ± | 0.70 |
| 1,2,3,4,6,7,8- HpCDF | 176.33 | ± | 13.42 | 127.00 | ± | 6.43 | 74.83 | ± | 10.55 | 74.00 | ± | 1.21 | 103.47 | ± | 18.56 |
| 1,2,3,7,8,9- HxCDD | 1.15 | ± | 0.90 | 5.71 | ± | 0.33 | 5.88 | ± | 0.56 | 7.39 | ± | 0.33 | 6.39 | ± | 0.50 |
| 1,2,3,7,8,9- HxCDF | 49.37 | ± | 5.84 | 25.47 | ± | 2.17 | 39.23 | ± | 3.02 | 25.08 | ± | 12.53 | 22.43 | ± | 3.65 |
| 1,2,3,4,7,8,9- HpCDF | 39.57 | ± | 5.79 | 26.90 | ± | 0.97 | 26.17 | ± | 2.15 | 21.05 | ± | 9.51 | 26.03 | ± | 2.46 |
| Total PCDD/Fs | 176.00 | ± | 10.69 | 92.40 | ± | 2.40 | 79.43 | ± | 3.34 | 97.80 | ± | 8.11 | 73.03 | ± | 4.09 |