

| METAL | Material | Population 1    | Population 2   | Population 3   | Population 4   | Population 5     | Population 6     | Population 7     | Population 8     | Population 9   | Population 10    | Population 11   | Population 12    | Population 13   | Population 14   | Mean             | Kruskal-Wallis test                      |
|-------|----------|-----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|-----------------|------------------|-----------------|-----------------|------------------|--|
| Al    | SOIL     | 496.93 ± 23.92  | 55.74 ± 1.30   | 44.22 ± 2.06   | 163.89 ± 4.36  | 47.17 ± 1.19     | 85.45 ± 1.17     | 62.82 ± 1.70     | 366.00 ± 1.63    | 31.88 ± 1.90   | 102.12 ± 4.27    | 4.04 ± 1.50     | 69.94 ± 4.42     | 101.75 ± 7.84   | 75.60 ± 0.99    | 101.15 ± 31.85   | H <sub>(13, 42)</sub> = 40.39 p = 0.0001 |
|       | ROOT     | 2977.21 ± 16.81 | 2738.03 ± 0.00 | 617.83 ± 13.31 | 886.58 ± 0.00  | 1782.50 ± 164.55 | 1145.67 ± 58.35  | 733.99 ± 201.24  | 1630.64 ± 202.73 | 860.56 ± 5.11  | 2455.57 ± 965.88 | 705.01 ± 6.42   | 2438.13 ± 100.92 | 2922.74 ± 9.60  | 370.62 ± 3.49   | 1590.36 ± 253.53 | H <sub>(13, 42)</sub> = 40.70 p = 0.0001 |
|       | STEM     | 475.50 ± 2.18   | 155.19 ± 7.61  | 112.15 ± 2.33  | 273.60 ± 9.03  | 188.19 ± 0.70    | 508.48 ± 9.83    | 79.47 ± 1.94     | 478.68 ± 27.42   | 341.62 ± 15.10 | 86.38 ± 3.17     | 56.82 ± 2.15    | 1219.99 ± 61.01  | 333.33 ± 2.84   | 49.62 ± 4.35    | 311.36 ± 82.51   | H <sub>(13, 42)</sub> = 40.51 p = 0.0001 |
|       | LEAF     | 165.47 ± 0.91   | 41.24 ± 2.32   | 28.01 ± 0.86   | 136.39 ± 12.62 | 9.02 ± 0.57      | 36.51 ± 1.77     | 171.87 ± 3.38    | 25.04 ± 1.16     | 55.61 ± 2.60   | 82.89 ± 2.50     | 6.80 ± 0.51     | 24.46 ± 3.30     | 49.45 ± 2.24    | 32.10 ± 1.24    | 61.78 ± 14.96    | H <sub>(13, 42)</sub> = 40.62 p = 0.0001 |
| V     | SOIL     | 0.82 ± 0.02     | 0.60 ± 0.06    | 0.65 ± 0.02    | 1.06 ± 0.02    | 0.62 ± 0.03      | 0.51 ± 0.02      | 0.99 ± 0.01      | 0.66 ± 0.03      | 2.60 ± 0.10    | 1.74 ± 0.06      | 9.81 ± 0.19     | 1.62 ± 0.19      | 2.70 ± 0.04     | 2.22 ± 0.12     | 1.90 ± 0.64      | H <sub>(13, 42)</sub> = 39.77 p = 0.0002 |
|       | ROOT     | 2.97 ± 0.02     | 4.13 ± 0.00    | 1.13 ± 0.03    | 1.50 ± 0.00    | 3.50 ± 0.22      | 2.37 ± 0.08      | 1.74 ± 0.34      | 2.66 ± 0.25      | 2.83 ± 0.04    | 130.14 ± 64.70   | 2.14 ± 0.09     | 7.17 ± 0.33      | 8.90 ± 0.04     | 2.34 ± 0.07     | 12.39 ± 9.08     | H <sub>(13, 42)</sub> = 39.95 p = 0.0001 |
|       | STEM     | 0.30 ± 0.03     | 0.51 ± 0.02    | 0.47 ± 0.02    | 0.75 ± 0.02    | 0.76 ± 0.04      | 1.05 ± 0.01      | 0.50 ± 0.02      | 1.14 ± 0.05      | 0.83 ± 0.01    | 0.66 ± 0.02      | 0.33 ± 0.02     | 4.37 ± 0.13      | 1.43 ± 0.08     | 0.48 ± 0.01     | 0.97 ± 0.28      | H <sub>(13, 42)</sub> = 39.92 p = 0.0001 |
|       | LEAF     | 0.09 ± 0.00     | 0.08 ± 0.00    | 0.04 ± 0.01    | 0.41 ± 0.02    | 0.15 ± 0.01      | 0.07 ± 0.00      | 0.40 ± 0.02      | 0.06 ± 0.01      | 0.11 ± 0.01    | 0.14 ± 0.01      | 0.13 ± 0.00     | 0.07 ± 0.01      | 0.12 ± 0.00     | 0.06 ± 0.00     | 0.14 ± 0.03      | H <sub>(13, 42)</sub> = 39.95 p = 0.0001 |
| Cr    | SOIL     | 2.07 ± 0.12     | 1.26 ± 0.08    | 2.70 ± 0.91    | 1.42 ± 0.03    | 1.27 ± 0.02      | 1.50 ± 0.27      | 1.44 ± 0.05      | 2.05 ± 0.46      | 1.59 ± 0.12    | 1.51 ± 0.05      | 1.92 ± 0.21     | 1.61 ± 0.09      | 1.70 ± 0.11     | 2.14 ± 0.27     | 1.73 ± 0.11      | H <sub>(13, 42)</sub> = 25.69 p = 0.0187 |
|       | ROOT     | 2.09 ± 0.13     | 2.26 ± 0.00    | 0.65 ± 0.01    | 0.94 ± 0.00    | 1.81 ± 0.11      | 1.21 ± 0.03      | 0.90 ± 0.16      | 1.71 ± 0.11      | 1.43 ± 0.02    | 37.81 ± 18.58    | 1.10 ± 0.05     | 2.59 ± 0.16      | 3.20 ± 0.02     | 0.91 ± 0.03     | 4.19 ± 2.59      | H <sub>(13, 42)</sub> = 40.54 p = 0.0001 |
|       | STEM     | 0.43 ± 0.00     | 0.58 ± 0.02    | 0.55 ± 0.02    | 0.87 ± 0.01    | 0.55 ± 0.00      | 0.74 ± 0.02      | 0.48 ± 0.03      | 0.84 ± 0.00      | 0.63 ± 0.01    | 0.52 ± 0.02      | 0.54 ± 0.00     | 1.76 ± 0.03      | 0.66 ± 0.02     | 0.33 ± 0.00     | 0.68 ± 0.09      | H <sub>(13, 42)</sub> = 39.39 p = 0.0002 |
|       | LEAF     | 0.17 ± 0.00     | 0.09 ± 0.00    | 0.07 ± 0.00    | 0.25 ± 0.01    | 0.22 ± 0.02      | 0.10 ± 0.01      | 0.32 ± 0.00      | 0.09 ± 0.01      | 0.11 ± 0.01    | 0.17 ± 0.01      | 0.17 ± 0.01     | 0.10 ± 0.01      | 0.11 ± 0.00     | 0.07 ± 0.00     | 0.15 ± 0.02      | H <sub>(13, 42)</sub> = 39.47 p = 0.0002 |
| Mn    | SOIL     | 549.92 ± 18.77  | 354.65 ± 2.02  | 53.02 ± 0.47   | 813.04 ± 11.53 | 252.00 ± 1.83    | 2542.58 ± 144.78 | 2858.11 ± 2.96   | 614.50 ± 1.30    | 240.14 ± 7.30  | 2595.18 ± 1.92   | 7.98 ± 0.07     | 39.02 ± 1.59     | 52.81 ± 1.55    | 207.99 ± 2.41   | 798.64 ± 278.12  | H <sub>(13, 42)</sub> = 40.59 p = 0.0001 |
|       | ROOT     | 42.60 ± 0.89    | 90.10 ± 0.00   | 16.80 ± 0.44   | 60.99 ± 0.00   | 94.97 ± 4.85     | 208.33 ± 7.44    | 134.31 ± 42.50   | 48.91 ± 1.54     | 19.96 ± 0.58   | 235.42 ± 88.66   | 24.08 ± 1.21    | 47.84 ± 2.60     | 63.30 ± 0.40    | 13.16 ± 0.38    | 78.63 ± 18.62    | H <sub>(13, 42)</sub> = 40.39 p = 0.0001 |
|       | STEM     | 7.28 ± 0.08     | 17.85 ± 0.85   | 9.54 ± 0.23    | 36.82 ± 0.92   | 25.00 ± 0.72     | 53.47 ± 1.81     | 46.20 ± 1.81     | 29.47 ± 1.04     | 63.92 ± 2.82   | 182.56 ± 8.93    | 11.19 ± 0.28    | 108.04 ± 3.88    | 37.92 ± 1.61    | 11.51 ± 0.24    | 45.77 ± 12.79    | H <sub>(13, 42)</sub> = 40.65 p = 0.0001 |
|       | LEAF     | 35.04 ± 0.21    | 26.52 ± 0.76   | 6.25 ± 0.03    | 114.57 ± 4.75  | 61.65 ± 2.18     | 9.08 ± 0.14      | 78.72 ± 0.67     | 6.00 ± 0.13      | 22.76 ± 0.21   | 11.38 ± 0.06     | 14.60 ± 0.05    | 5.55 ± 0.19      | 10.36 ± 0.24    | 10.80 ± 0.04    | 29.52 ± 8.81     | H <sub>(13, 42)</sub> = 40.81 p = 0.0001 |
| Fe    | SOIL     | 431.49 ± 37.90  | 31.08 ± 2.66   | 28.02 ± 2.78   | 189.59 ± 11.79 | 91.34 ± 6.46     | 24.33 ± 1.35     | 252.61 ± 14.85   | 20.55 ± 1.64     | 11.58 ± 1.28   | 116.09 ± 4.54    | 49.51 ± 2.01    | 156.03 ± 19.10   | 50.91 ± 4.75    | 163.69 ± 15.98  | 115.49 ± 31.46   | H <sub>(13, 42)</sub> = 40.22 p = 0.0001 |
|       | ROOT     | 3376.74 ± 61.82 | 2002.54 ± 0.00 | 391.64 ± 9.20  | 656.12 ± 0.00  | 1481.96 ± 88.27  | 1311.25 ± 48.20  | 1037.06 ± 166.38 | 1203.47 ± 66.45  | 691.42 ± 11.64 | 1534.04 ± 337.81 | 1323.02 ± 68.19 | 3465.32 ± 170.30 | 2785.17 ± 13.84 | 480.25 ± 21.12  | 1552.86 ± 269.87 | H <sub>(13, 42)</sub> = 40.10 p = 0.0001 |
|       | STEM     | 286.55 ± 9.09   | 178.55 ± 12.02 | 126.92 ± 4.41  | 200.41 ± 7.53  | 220.91 ± 9.52    | 404.95 ± 14.06   | 170.12 ± 6.68    | 390.54 ± 16.11   | 297.14 ± 11.81 | 202.23 ± 12.08   | 154.23 ± 3.40   | 1221.48 ± 74.32  | 315.13 ± 4.72   | 33.49 ± 0.77    | 300.19 ± 75.90   | H <sub>(13, 42)</sub> = 40.08 p = 0.0001 |
|       | LEAF     | 63.31 ± 0.48    | 28.68 ± 3.23   | 22.95 ± 9.85   | 192.16 ± 4.57  | 57.13 ± 2.72     | 23.99 ± 0.99     | 132.56 ± 8.42    | 18.59 ± 0.74     | 34.55 ± 0.78   | 43.92 ± 1.40     | 28.95 ± 2.37    | 56.20 ± 4.66     | 30.32 ± 7.04    | 27.19 ± 2.76    | 54.32 ± 13.16    | H <sub>(13, 42)</sub> = 37.71 p = 0.0003 |
| Co    | SOIL     | 12.74 ± 0.35    | 4.55 ± 0.02    | 0.33 ± 0.02    | 9.22 ± 0.20    | 15.57 ± 0.04     | 11.05 ± 0.24     | 15.85 ± 0.09     | 3.79 ± 0.01      | 0.82 ± 0.04    | 23.26 ± 0.22     | 0.64 ± 0.02     | 1.93 ± 0.03      | 2.60 ± 0.16     | 28.53 ± 0.54    | 9.35 ± 2.39      | H <sub>(13, 42)</sub> = 40.81 p = 0.0001 |
|       | ROOT     | 3.72 ± 0.10     | 3.60 ± 0.00    | 0.31 ± 0.01    | 1.91 ± 0.00    | 3.45 ± 0.17      | 6.23 ± 0.23      | 4.28 ± 1.12      | 1.45 ± 0.04      | 0.74 ± 0.02    | 15.67 ± 6.33     | 1.83 ± 0.08     | 1.71 ± 0.08      | 3.82 ± 0.03     | 0.55 ± 0.01     | 3.52 ± 1.04      | H <sub>(13, 42)</sub> = 40.23 p = 0.0001 |
|       | STEM     | 0.80 ± 0.01     | 0.45 ± 0.02    | 0.23 ± 0.01    | 0.73 ± 0.00    | 1.21 ± 0.03      | 1.72 ± 0.07      | 1.59 ± 0.08      | 0.61 ± 0.02      | 0.80 ± 0.03    | 1.56 ± 0.09      | 0.52 ± 0.01     | 1.88 ± 0.12      | 1.18 ± 0.06     | 0.16 ± 0.00     | 0.96 ± 0.15      | H <sub>(13, 42)</sub> = 40.06 p = 0.0001 |
|       | LEAF     | 0.36 ± 0.00     | 0.12 ± 0.00    | 0.07 ± 0.00    | 1.38 ± 0.05    | 0.24 ± 0.01      | 0.15 ± 0.00      | 0.48 ± 0.01      | 0.08 ± 0.00      | 0.15 ± 0.00    | 0.10 ± 0.00      | 0.06 ± 0.00     | 0.13 ± 0.00      | 0.11 ± 0.00     | 0.07 ± 0.00     | 0.25 ± 0.09      | H <sub>(13, 42)</sub> = 40.75 p = 0.0001 |
| Ni    | SOIL     | 7.45 ± 0.10     | 7.11 ± 0.04    | 5.70 ± 0.18    | 4.66 ± 0.15    | 8.87 ± 0.21      | 17.87 ± 0.60     | 31.77 ± 0.07     | 5.95 ± 0.27      | 4.35 ± 0.20    | 6.79 ± 0.14      | 5.16 ± 0.18     | 11.55 ± 0.19     | 6.74 ± 0.62     | 14.98 ± 0.33    | 9.92 ± 1.99      | H <sub>(13, 42)</sub> = 39.69 p = 0.0002 |
|       | ROOT     | 2.17 ± 0.08     | 4.50 ± 0.00    | 2.34 ± 0.16    | 2.09 ± 0.00    | 5.31 ± 0.32      | 2.09 ± 0.08      | 1.54 ± 0.25      | 3.46 ± 0.16      | 1.22 ± 0.11    | 21.65 ± 10.24    | 1.46 ± 0.14     | 10.07 ± 0.15     | 4.89 ± 0.10     | 2.45 ± 0.14     | 4.66 ± 1.45      | H <sub>(13, 42)</sub> = 40.61 p = 0.0002 |
|       | STEM     | 0.45 ± 0.04     | 4.44 ± 1.23    | 0.74 ± 0.06    | 3.69 ± 0.25    | 4.21 ± 2.93      | 2.50 ± 0.57      | 1.10 ± 0.24      | 0.77 ± 0.03      | 0.62 ± 0.03    | 1.12 ± 0.33      | 1.43 ± 0.07     | 1.76 ± 0.08      | 1.87 ± 0.18     | 0.55 ± 0.09     | 1.73 ± 0.38      | H <sub>(13, 42)</sub> = 35.57 p = 0.0007 |
|       | LEAF     | 0.17 ± 0.02     | 0.35 ± 0.04    | 0.40 ± 0.00    | 0.70 ± 0.03    | 0.36 ± 0.04      | 0.24 ± 0.04      | 0.37 ± 0.09      | 0.43 ± 0.02      | 0.46 ± 0.03    | 0.25 ± 0.02      | 0.29 ± 0.07     | 0.16 ± 0.01      | 0.14 ± 0.02     | 0.17 ± 0.01     | 0.32 ± 0.04      | H <sub>(13, 42)</sub> = 38.53 p = 0.0002 |
| Cu    | SOIL     | 224.69 ± 6.98   | 21.69 ± 1.49   | 4.78 ± 0.89    | 292.06 ± 7.93  | 66.86 ± 1.13     | 91.02 ± 0.64     | 355.19 ± 4.78    | 286.77 ± 1.38    | 76.00 ± 1.15   | 234.64 ± 2.67    | 201.60 ± 6.22   | 194.72 ± 4.41    | 37.80 ± 0.45    | 237.21 ± 9.82   | 166.07 ± 30.42   | H <sub>(13, 42)</sub> = 40.35 p = 0.0001 |
|       | ROOT     | 80.77 ± 2.47    | 40.60 ± 0.00   | 9.23 ± 0.13    | 48.92 ± 0.00   | 82.81 ± 4.25     | 62.65 ± 2.32     | 52.81 ± 6.27     | 47.88 ± 1.16     | 28.66 ± 1.32   | 112.00 ± 32.77   | 37.26 ± 1.92    | 78.95 ± 4.07     | 89.82 ± 0.97    | 73.29 ± 2.06    | 60.40 ± 7.36     | H <sub>(13, 42)</sub> = 40.03 p = 0.0001 |
|       | STEM     | 32.08 ± 0.71    | 28.20 ± 1.22   | 9.19 ± 0.07    | 31.03 ± 1.77   | 29.77 ± 0.43     | 34.23 ± 3.01     | 32.91 ± 1.26     | 27.06 ± 0.58     | 37.56 ± 1.39   | 26.34 ± 1.69     | 14.79 ± 0.29    | 50.57 ± 0.74     | 28.34 ± 1.46    | 27.71 ± 0.72    | 29.27 ± 2.57     | H <sub>(13, 42)</sub> = 35.13 p = 0.0008 |
|       | LEAF     | 13.78 ± 0.12    | 8.78 ± 0.19    | 3.56 ± 0.03    | 16.33 ± 1.13   | 7.19 ± 0.14      | 6.76 ± 0.16      | 12.45 ± 0.39     | 4.25 ± 0.33      | 4.92 ± 0.29    | 5.88 ± 0.10      | 11.09 ± 0.73    | 3.59 ± 0.05      | 5.69 ± 0.11     | 5.14 ± 0.18     | 7.81 ± 1.09      | H <sub>(13, 42)</sub> = 40.63 p = 0.0001 |
| Zn    | SOIL     | 483.54 ± 21.60  | 137.87 ± 2.60  | 38.40 ± 1.10   | 287.69 ± 10.99 | 402.63 ± 6.20    | 2076.38 ± 15.63  | 3138.69 ± 13.01  | 118.93 ± 13.97   | 72.10 ± 1.84   | 237.30 ± 14.33   | 44.78 ± 1.75    | 157.73 ± 32.85   | 390.62 ± 19.75  | 4696.06 ± 66.85 | 877.34 ± 379.37  | H <sub>(13, 42)</sub> = 40.37 p = 0.0001 |
|       | ROOT     | 58.64 ± 1.98    | 48.83 ± 0.00   | 29.35 ± 1.60   | 49.44 ± 0.00   | 69.23 ± 2.52     | 50.35 ± 1.72     | 73.60 ± 10.44    | 57.79 ± 0.77     | 40.32 ± 1.86   | 91.21 ± 3.16     | 50.57 ± 1.44    | 60.25 ± 2.36     | 96.35 ± 1.43    | 36.45 ± 0.15    | 58.03 ± 5.15     | H <sub>(13, 42)</sub> = 39.66 p = 0.0002 |
|       | STEM     | 61.86 ± 0.50    | 34.68 ± 0.40   | 34.09 ± 0.86   | 50.02 ± 0.27   | 42.83 ± 0.43     | 40.92 ± 1.02     | 44.42 ± 1.51     | 42.53 ± 1.05     | 70.02 ± 0.87   | 52.93 ± 3.00     | 44.22 ± 0.50    | 59.95 ± 0.85     | 71.46 ± 0.96    | 50.26 ± 0.54    | 50.01 ± 3.19     | H <sub>(13, 42)</sub> = 39.47 p = 0.0002 |
|       | LEAF     | 26.27 ± 0.26    | 16.52 ± 2.04   | 14.67 ± 0.48   | 45.90 ± 0.77   | 29.81 ± 1.55     | 23.92 ± 3.30     | 46.86 ± 0.38     | 18.03 ± 0.67     | 19.15 ± 1.30   | 18.76 ± 2.69     | 26.40 ± 0.89    | 17.54 ± 1.67     | 18.57 ± 0.75    | 19.00 ± 0.22    | 24.39 ± 2.74     | H <sub>(13, 42)</sub> = 37.73 p = 0.0005 |
| As    | SOIL     | 7.57 ± 0.23     | 13.70 ± 0.59   | 1.77 ± 0.14    | 10.94 ± 0.65   | 3.43 ± 0.06      | 6.89 ± 0.67      | 13.59 ± 0.24     | 6.16 ± 0.13      | 7.78 ± 0.03    | 24.83 ± 0.63     | 6.34 ± 0.24     | 7.10 ± 0.63      | 20.97 ± 1.20    | 54.22 ± 0.49    | 13.24 ± 3.59     | H <sub>(13, 42)</sub> = 40.09 p = 0.0001 |
|       | ROOT     | 16.63 ± 1.42    | 14.05 ± 0.00   | 1.52 ± 0.02    | 4.37 ± 0.00    | 6.37 ± 0.26      | 8.31 ± 0.34      | 8.60 ± 0.27      | 3.85 ± 0.10      | 2.26 ± 0.13    | 37.09 ± 13.90    | 11.21 ± 0.60    | 13.41 ± 0.64     | 18.79 ± 0.29    | 2.46 ± 0.04     | 10.64 ± 2.52     | H <sub>(13, 42)</sub> = 40.41 p = 0.0001 |
|       | STEM     | 1.46 ± 0.01     | 1.89 ± 0.02    | 0.67 ± 0.01    | 1.35 ± 0.05    | 1.25 ± 0.03      | 2.01 ± 0.10      | 1.59 ± 0.08      | 1.71 ± 0.00      | 1.45 ± 0.02    | 1.59 ± 0.07      | 1.23 ± 0.02     | 4.85 ± 0.02      | 2.27 ± 0.08     | 0.57 ± 0.01     | 1.71 ± 0.27      | H <sub>(13, 42)</sub> = 39.30 p = 0.0002 |
|       | LEAF     | 0.60 ± 0.02     | 0.37 ± 0.01    | 0.15 ± 0.00    | 1.32 ± 0.04    | 0.28 ± 0.04      | 0.13 ± 0.00      | 0.60 ± 0.03      | 0.13 ± 0.01      | 0.28 ± 0.01    | 0.33 ± 0.02      | 0.07 ± 0.02     | 0.30 ± 0.02      | 0.16 ± 0.01     | 0.11 ± 0.01     | 0.34 ± 0.09      | H <sub>(13, 42)</sub> = 40.39 p = 0.0001 |