

Table S1. Concentration of the sand, silt, clay, heavy metals and other chemical parameters according to the management's types, positions and times. Different letters in parentheses indicate significant differences among times of the same position and management (Wilcoxon test with BY correction, p -value ≤ 0.05).

| Elements | Int-Ir-T0 | Int-Ir-T1 | Int-Ir-T2 | Org-Ir-T0 | Org-Ir-T1 | Org-Ir-T2 | Int-R-T0 | Int-R-T1 | Int-R-T2 | Org-R-T0 | Org-R-T1 | Org-R-T2 |
|-------------------------------|----------------|----------------|---------------|----------------|----------------|-----------------|------------------|-------------------|-----------------|----------------|-----------------|----------------|
| Sand [†] | 377.3±16.7 | 377.3±16.7 | 377.3±16.7 | 474.8±9.21 | 474.8±9.21 | 474.8±9.21 | 397.3±8.73 | 397.3±8.73 | 397.3±8.73 | 437.6±7.96 | 437.6±7.96 | 437.6±7.96 |
| Silt [†] | 572.7±17.36 | 572.7±17.36 | 572.7±17.36 | 476.2±10.14 | 476.2±10.14 | 476.2±10.14 | 538.7±10.93 | 538.7±10.93 | 538.7±10.93 | 510.4±9.38 | 510.4±9.38 | 510.4±9.38 |
| Clay [†] | 50±5.77 | 50±5.77 | 50±5.77 | 49±2.77 | 49±2.77 | 49±2.77 | 64±3.06 | 64±3.06 | 64±3.06 | 52±2.91 | 52±2.91 | 52±2.91 |
| Available Cu [§] | 31.85±2.63 | 27.94±2.29 | 30.79±3.13 | 33.59±3.54 | 31.68±3.56 | 36.76±3.48 | 29.56±2.15 (ab) | 26.43±2 (b) | 32.15±2.11(a) | 32.81±3.48 (b) | 31.48±3.47 (b) | 42.04±3.89 (a) |
| Available Pb [§] | 10.73±0.68 | 9.74±0.59 | 9.9±0.64 | 9.78±0.15 (a) | 9.06±0.27 (b) | 9.83±0.31 (ab) | 7.91±0.42 (a) | 6.62±0.34 (b) | 8.35±0.49 (a) | 8.73±0.5 (a) | 7.4±0.19 (b) | 9.25±0.26 (a) |
| Available Zn [§] | 12.28±1.92 | 12.17±1.97 | 11.35±1.87 | 14.98±3.4 | 14.57±2.73 | 14.18±2.44 | 19.64±1.71 | 17.15±1.78 | 16.93±2.3 | 19.1±2.54 | 17.59±1.97 | 18.68±2.15 |
| Available Mn [§] | 9.95±0.52 (a) | 7.97±0.4 (b) | 6.12±0.52 (c) | 10.65±0.29 (a) | 7.69±0.18 (b) | 7.69±0.4 (b) | 8.4±0.3 (a) | 7.05±0.27 (b) | 7.63±0.52 (ab) | 10.22±0.54 (a) | 8.56±0.22 (b) | 8.07±0.31 (b) |
| Available Fe [§] | 67.36±6.78 (a) | 52.07±5.98 (b) | 49.65±6.7 (b) | 66.98±3.29 (a) | 52.87±2.66 (b) | 61.14±3.41 (ab) | 60.92±4.5 (a) | 44.86±3.7 (b) | 50.62±3.6 (b) | 51.17±2.22 (a) | 41.65±1.48 (b) | 50.1±2.41 (a) |
| pH [#] | 7.58±0.02 (b) | 7.60±0.03 (ab) | 7.68±0.04 (a) | 7.48±0.03 | 7.52±0.02 | 7.48±0.03 | 7.43±0.03 | 7.44±0.03 | 7.43±0.04 | 7.47±0.02 | 7.46±0.02 | 7.40±0.04 |
| Total carbonates [#] | 334.1±45.96 | 329.4±42.2 | 342.3±45.92 | 346.4±54.37 | 330.2±49.04 | 355.9±55.65 | 422.1±42.19 | 388±40.95 | 419.4±42.94 | 435.1±54.72 | 425.5±46.14 | 439.5±54.78 |
| SOM [#] | 56.1±5.69 | 56.2±6.43 | 55±5.36 | 59.9±7.82 | 59.2±7.64 | 61.7±6.35 | 68.3±4.38 | 71.2±5.53 | 63.2±5.63 | 65.6±5.39 | 62.1±5.96 | 60.3±4.78 |
| Assimilable P [#] | 36.5±5.08 | 36±4.58 | 35.3±3.3 | 37.5±3.92 | 33.3±2.65 | 42±4.59 | 184±13.77 | 185.8±9.42 | 161.7±8.89 | 96.8±6.98 | 110.9±9 | 118.1±6.34 |
| Exchangeable K [#] | 97.9±6.18 (a) | 86.6±6.69 (ab) | 75.8±3.03 (b) | 97.9±8.09 | 88.5±6.22 | 92.9±6.8 | 126.4±6.39 (b) | 172.2±7.5 (ab) | 200.2±12.87 (a) | 164.8±11.26 | 180.6±32.14 | 186.6±15.12 |
| Exchangeable Mg [#] | 865.1±81.98 | 815.7±76.42 | 793.5±68.25 | 1025.9±56.57 | 978.7±60.68 | 957.8±48.33 | 1098.4±51.06 (a) | 1064.4±65.25 (ab) | 890.3±61.83 (b) | 1060±53.05 | 1029.9±47.01 | 965.4±38.55 |
| Total N [#] | 3.16±0.3 | 3.18±0.32 | 3.34±0.32 | 3.44±0.43 | 3.46±0.4 | 3.9±0.38 | 3.64±0.22 | 3.59±0.27 | 3.38±0.28 | 3.48±0.29 | 3.45±0.3 | 3.35±0.23 |
| Exchangeable Ca [#] | 3.7±0.42 | 3.28±0.34 | 3.17±0.28 | 3.1±0.23 | 2.66±0.18 | 2.81±0.15 | 3.5±0.22 | 3.42±0.25 | 2.98±0.2 | 3.2±0.13 (a) | 2.86±0.13 (ab) | 2.6±0.13 (b) |
| CEC [#] | 21.92±1.22 | 21.47±1.2 | 22.15±1.27 | 22.36±1.71 | 21.96±1.39 | 22.69±1.55 | 25.28±0.97 | 24.51±1.17 | 22.68±1.19 | 25.36±1.26 (a) | 23.11±1.28 (ab) | 22.24±1.08 (b) |
| Soluble B [#] | 0.79±0.09 | 0.62±0.07 | 0.62±0.06 | 0.88±0.12 | 0.85±0.09 | 0.89±0.07 | 1.3±0.12 | 1.13±0.09 | 1.35±0.11 | 1.19±0.12 | 1±0.1 | 1.18±0.1 |

[†] Texture (sand, silt and clay) expressed as g/kg d.w.

[§] Heavy metals: Available Cu, Pb, Zn, Mn and Fe expressed as mg/kg d.w.

[#] Other chemical parameters: SOM, Exchangeable Ca, Total N and Soluble B expressed as g/kg d.w. Totale Carbonate expressed as g/kgCaCO₃, Assimilable P as mg/kg P₂O₅, Exchangeable K as mg/kg K₂O, Exchangeable Mg as mg/kg MgO and CEC cmolc/kg d.w.