**Table 2: Pb speciation (weighted %) in the <250 and <10 µm soil particle fraction**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adsorbed into clays and oxides** | **Organic matter bound** | **Anglesite (PbSO4)** | **Plumbojarosite**  **(PbFe6(SO4)4(OH)12)** | **Pb-phosphates (pyromorphite + Pb3(PO4)2)** | **Galena**  **(PbS)** | **R factor** |
| **< 250 µm soil particle fraction** | | | | | | | |
| **Unamended** | 2 | 31 | 67 | - | - | - | 0.00055 |
| **PA[[1]](#footnote-1)** | 9 | 9 | 82 | - | - | - | 0.00412 |
| **HA[[2]](#footnote-2)** | 0 | 16 | 78 | - | - | 6 | 0.00394 |
| **MAP3** | 0 | 28 | 72 | - | - | - | 0.00064 |
| **TSP[[3]](#footnote-3)** | 0 | 15 | 85 | - | - | - | 0.00263 |
| **Bonemeal biochar** | 0 | 42 | 45 | - | - | 13 | 0.00625 |
| **Fe2O3** | 0 | 26 | 74 | - | - | - | 0.00491 |
| **< 10 µm soil particle fraction** | | | | | | | |
| **Unamended** | 20 | 8 | 66 | 7 | - | - |  |
| **PA1** | 11 | 14 | 66 | 9 | - | - |  |
| **HA2** | 2 | 24 | 74 | - | - | - | 0.00260 |
| **MAP3** | 14 | 10 | 68 | 8 | - | - |  |
| **TSP4** | 15 | 8 | 68 | 8 | - | - |  |
| **Bonemeal biochar** | 0 | 44 | 44 | - | - | 12 | 0.00527 |
| **Fe2O3** | 0 | 0 | 87 | - | 9 | 4 | 0.00392[[4]](#footnote-4) |

**Table S2: Fe speciation (Weighted %) in the < 10 µm particle size fraction**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Ferrihydrite  (Fe(OH)3) | Goethite  (FeO(OH) | Magnetite  (Fe3O4) | Hematite  (α-Fe2O3) | Maghemite  (γ-Fe2O3) | Clay | R-factor |
| No amendment | 38 | 14 | 9 | 8 | 5 | 26 | 0.0011 |
| PA | 42 | 11 | 7 | 5 | 0 | 35 | 0.0012 |
| HA | 24 | 15 | 5 | 6 | 10 | 40 | 0.0022 |
| TSP | 42 | 8 | 8 | 15 | 2 | 26 | 0.002 |

1. Phosphoric acid [↑](#footnote-ref-1)
2. Hydroxyapatite [↑](#footnote-ref-2)
3. Mono-ammonium phosphate [↑](#footnote-ref-3)
4. Triple super phosphate [↑](#footnote-ref-4)