Table S1. Three way ANOVA of Sediment characteristics

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Source of variation | D.F. | **Moisture** | **pH** | **EC** | **OC** | **Total N** | **C/N Ratio** | **P** | **Na** | **K** |
| F | p | F | p | F | p | F | p | F | p | F | p | F | p | F | p | F | p |
| Location | 4 | 2.75 | 0.04 | 7.35 | <0.001 | 19.90 | <0.001 | 10.48 | <0.001 | 52.84 | <0.001 | 18.49 | <0.001 | 737.29 | <0.001 | 1006.41 | <0.001 | 314.76 | <0.001 |
| Plant | 2 | 0.08 | 0.92 | 8.19 | <0.001 | 2.53 | 0.09 | 12.06 | <0.001 | 18.66 | <0.001 | 4.10 | 0.02 | 9.10 | <0.001 | 45.56 | <0.001 | 105.21 | <0.001 |
| Sediment  | 1 | 5.80 | 0.02 | 0.57 | 0.46 | 3.05 | 0.09 | 13.85 | <0.001 | 0.60 | 0.44 | 3.56 | 0.10 | 8.65 | 0.005 | 157.63 | <0.001 | 8.00 | 0.006 |
| Location x Plant | 8 | 2.64 | 0.02 | 3.71 | 0.004 | 2.85 | 0.01 | 1.21 | 0.31 | 1.87 | 0.08 | 3.34 | 0.004 | 25.75 | <0.001 | 527.47 | <0.001 | 67.05 | <0.001 |
| Location x Sediment | 4 | 2.76 | 0.04 | 1.31 | 0.28 | 3.15 | 0.02 | 2.92 | 0.03 | 2.82 | 0.03 | 0.72 | 0.58 | 13.85 | <0.001 | 137.97 | <0.001 | 10.57 | <0.001 |
| Plant x Sediment | 2 | 2.11 | 0.13 | 0.28 | 0.76 | 5.51 | 0.01 | 3.89 | 0.03 | 1.43 | 0.25 | 0.22 | 0.80 | 14.46 | <0.001 | 282.40 | <0.001 | 6.78 | 0.002 |
| Location x Plant x Sediment | 8 | 1.05 | 0.41 | 1.40 | 0.22 | 1.17 | 0.33 | 3.30 | 0.002 | 3.44 | 0.002 | 0.44 | 0.89 | 7.50 | <0.001 | 63.14 | <0.001 | 12.05 | <0.001 |

Table S2. Three way ANOVA of PLFAs concentrations (nmol g-1 soil) and PLFA ratios

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Source of variation | D.F. | **Total PLFA** | **GM+ve** | **GM-ve** | **Total bacteria** | **Actinomycetes** | **Fungi** | **SAT/MONO** | **Cy/Pre** | **F/B** |
| F | p | F | p | F | p | F | p | F | p | F | p | F | p | F | p | F | p |
| Location | 4 | 5.89 | <0.001 | 8.33 | <0.001 | 14.21 | <0.001 | 10.73 | <0.001 | 18.90 | <0.001 | 7.86 | <0.001 | 11.56 | <0.001 | 27.83 | <0.001 | 16.73 | <0.001 |
| Plant | 2 | 41.68 | <0.001 | 42.13 | <0.001 | 53.42 | <0.001 | 53.83 | <0.001 | 66.26 | <0.001 | 24.41 | <0.001 | 1.23 | 0.30 | 1.74 | 0.19 | 14.44 | <0.001 |
| Soil | 1 | 67.78 | <0.001 | 36.39 | <0.001 | 74.24 | <0.001 | 67.67 | <0.001 | 63.56 | <0.001 | 71.78 | <0.001 | 36.40 | <0.001 | 6.48 | 0.01 | 7.73 | 0.01 |
| Location x Plant | 8 | 5.89 | <0.001 | 3.29 | 0.004 | 6.88 | <0.001 | 6.14 | <0.001 | 5.82 | <0.001 | 3.80 | 0.001 | 4.97 | <0.001 | 5.36 | <0.001 | 0.87 | 0.55 |
| Location x Sediment | 4 | 4.26 | 0.004 | 2.92 | 0.03 | 5.06 | 0.001 | 4.15 | 0.01 | 4.12 | 0.01 | 3.10 | 0.02 | 5.47 | <0.001 | 4.23 | 0.004 | 1.16 | 0.34 |
| Plant x Sediment | 2 | 28.06 | <0.001 | 26.00 | <0.001 | 45.19 | <0.001 | 41.62 | <0.001 | 27.87 | <0.001 | 27.31 | <0.001 | 34.46 | <0.001 | 22.29 | <0.001 | 1.49 | 0.23 |
| Location x Plant x Sediment | 8 | 3.50 | 0.002 | 3.73 | 0.001 | 4.93 | <0.001 | 4.40 | <0.001 | 2.54 | 0.02 | 4.90 | <0.001 | 8.96 | <0.001 | 5.20 | <0.001 | 0.91 | 0.51 |

Table S3. Three way ANOVA of PLFAs molar per cent

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Source of variation | D.F. | **GM+ve** | **GM-ve** | **Total bacteria** | **Actinomycetes** | **Fungi** | **NMS axis 1** | **NMS axis 2** |
| F | p | F | p | F | p | F | p | **F** | **p** | **F** | **p** | **F** | p |
| Location | 4 | 8.34 | <0.001 | 16.17 | <0.001 | 8.40 | <0.001 | 22.66 | <0.001 | 12.63 | <0.001 | 6.72 | <0.001 | 5.228 | 0.001 |
| Plant | 2 | 2.54 | 0.09 | 5.11 | 0.01 | 4.62 | 0.01 | 17.29 | <0.001 | 14.76 | <0.001 | 3.02 | 0.056 | 8.01 | <0.001 |
| Sediment | 1 | 15.24 | <0.001 | 7.36 | 0.01 | 0.28 | 0.60 | 0.20 | 0.66 | 8.74 | 0.004 | 9.14 | 0.004 | 0.439 | 0.51 |
| Location x Plant | 8 | 1.44 | 0.20 | 2.19 | 0.04 | 1.26 | 0.28 | 2.63 | 0.02 | 2.39 | 0.03 | 2.43 | 0.024 | 2.56 | 0.018 |
| Location x Sediment | 4 | 1.25 | 0.30 | 2.45 | 0.06 | 1.32 | 0.27 | 1.34 | 0.27 | 2.09 | 0.09 | 1.43 | 0.237 | 3.419 | 0.014 |
| Plant x Sediment | 2 | 5.95 | 0.004 | 15.19 | <0.001 | 8.52 | <0.001 | 5.91 | 0.01 | 1.85 | 0.17 | 14.33 | <0.001 | 5.327 | 0.007 |
| Location x Plant x Sediment | 8 | 2.83 | 0.01 | 2.85 | 0.01 | 1.24 | 0.29 | 2.06 | 0.05 | 1.78 | 0.10 | 3.04 | 0.006 | 1.559 | 0.157 |