Supplementary Material

Distinct nitrogen provisioning from organic amendments in soil as influenced by farming system and water regime

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**SI Table 4. Overview of biochemical and gene abundance data after 56 days of incubation (experiment A**). Δ=net flux between start and end of incubation (56 days , Ntot=total nitrogen, Nmin=mineral nitrogen, Nmic=microbial biomass nitrogen, DON=dissolved organic nitrogen, Nlabile= labile nitrogen (Nmin +Nmic +DON); FS=Farming system, WR=Water regime, DRY= 20% of the soils maximum water holding capacity (mWHC), WET= 80% of the soils mWHC; *apr=alkaline metallopeptidase, npr=neutral metallopeptidase, ureC=urease, amoAOB=bacterial ammonia-oxidase, amaoAOA=archaeal ammonia-oxidase*; n=4; p≤ \*0.05, \*\*0.01, \*\*\*0.001, n.s=non-significant, SE=standard error.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  | **DRY** |  | **WET** |  |  |  |  |
|   |   | **Organic** | **Conventional**  |  |  | **Organic** | **Conventional**  |  |  | **Two way ANOVA effect tests** |
|   |   | mean ± SE | Contrast analysis |   | mean ± SE | Contrast analysis |   | FS | WR | WRxFS |
| **ΔNmin** | mg kg-1 DW soil-1 | -28.4 ± 4.5 | -15.0 ± 18.6 | n.s |   | 100.8 ± 8.3 | 119.3 ± 16.1 | n.s |   | n.s | \*\*\* | n.s |
| **ΔNmic** | mg kg-1 DW soil-1 | 48.2 ± 5.6 | 52.9 ± 13.5 | n.s |   | -14.9 ± 6.1 | -11.1 ± 13.7 | n.s |   | n.s | \*\*\* | n.s |
| **ΔDON** | mg kg-1 DW soil-1 | -3.7 ± 0.7 | -4.75 ± 0.9 | n.s |   | -5.86 ± 0.9 | -15.6 ±0.8 | \*\*\* |   | \*\*\* | \*\*\* | \*\*\* |
| **ΔNlabile** | mg kg-1 DW soil-1 | 2.7 ± 5.7 | -18.8 ± 2.18 | \* |   | 66.5 ± 7.9 | 40.5 ± 6.8 | \* |   | \*\* | \*\*\* | n.s |
| **Cmic/Nmic** |   | 7.4 ± 0.01 | 6.8 ± 0.2 | n.s |   | 15.2 ± 0.7 | 43.4 ± 8.2 | \*\*\* |   | \*\* | \*\*\* | \*\*\* |
| ***apr*** | copy numbers g-1 DW soil-1 | 5.5E+06 ±6.2E+05 | 4.6E+06 ± 2.0E+05 | n.s |   | 7.6E+06 ± 1.1E+06 | 5.3E+06 ± 3.8E+05 | n.s |   | n.s | \* | n.s |
| ***npr*** | copy numbers g-1 DW soil-1 | 7.3E+04 ± 7.4E+03 | 7.6E+04 ± 1.2E+04 | n.s |   | 1.2E+05 ± 2.2E+04 | 1.4E+05 ± 1.3E+04 | n.s |   | n.s | \*\* | n.s |
| ***ureC*** | copy numbers g-1 DW soil-1 | 1.1E+09 ± 1.4E+08 | 7.6E+08 ± 1.1E+08 | n.s |   | 1.0E+09 ± 1.5E+08 | 9.2E+08 ± 7.5E+07 | n.s |   | n.s | n.s | n.s |
| ***amoAOA*** | copy numbers g-1 DW soil-1 | 2.4E+06 ± 4.2E+05 | 1.5E+06 ± 1.6E+05 | n.s |   | 5.7E+06 ± 7.9E+05 | 3.2E+06 ± 3.4E+05 | \*\* |   | \*\* | \*\*\* | n.s |
| ***amoAOB*** | copy numbers g-1 DW soil-1 | 1.6E+05 ± 3.1E+04 | 2.3E+05 ± 4.1E+04 | n.s |   | 2.0E+05 ± 3.0E+04 | 2.6E+05 ± 5.0E+04 | n.s |   | n.s | n.s | n.s |
| **CO2 respiration** | mg CO2-C kg-1 dry soil produced within 56 d | 1468.4 ± 46.8 | 1421.2 ± 80.0 | n.s |   | 2340.8 ± 1000.0 | 2515.6 ± 65.0 | n.s. |   | n.s | \*\*\* | n.s. |