

Erratum to “Short-term effects of biogas residue addition on CO₂ and N₂O production and denitrification potentials in two contrasting soils” by Chuqing Duan

26.11.2013

Figure 14 on page 20 was mislabelled, Fig. A) and Fig. C) should show NO₃⁻-N values and Fig.B) and Fig.D) should show NH₄⁺-N values. The figure below is given the correct version.

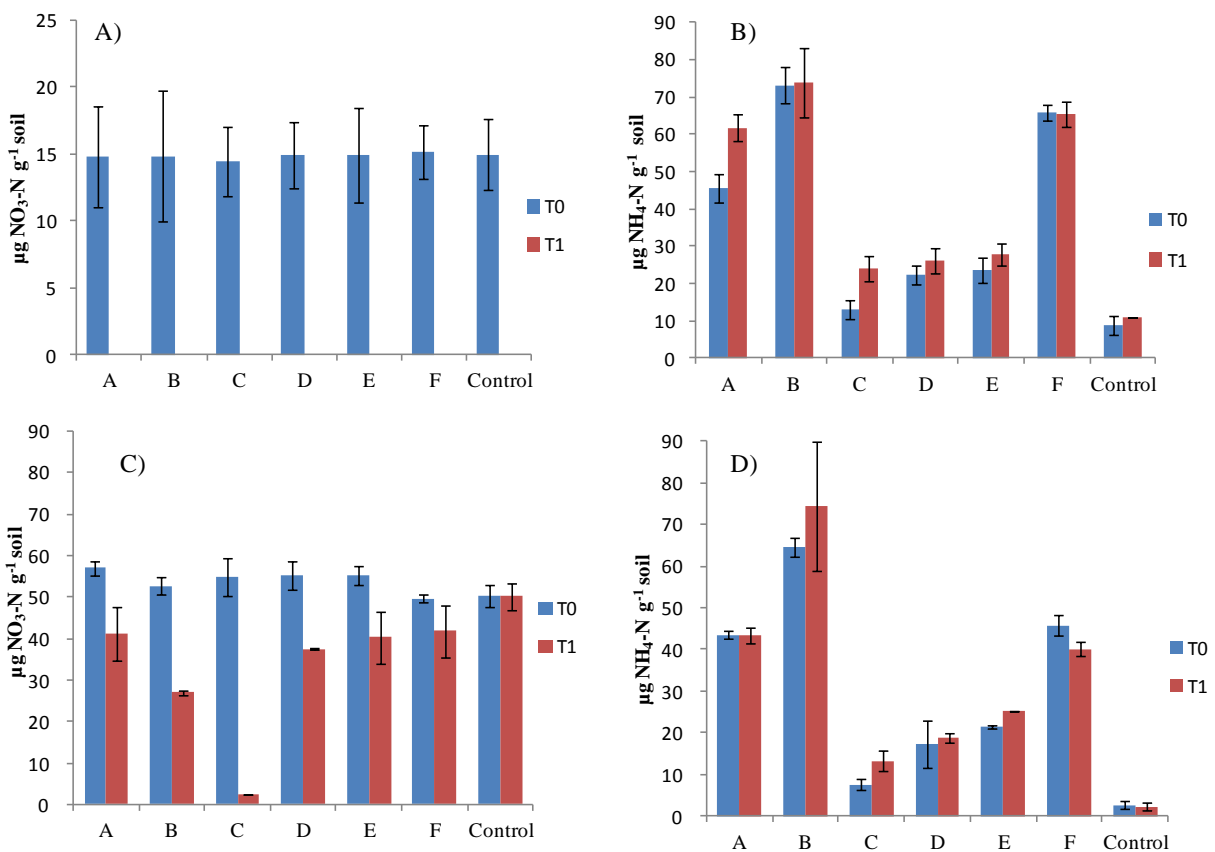


Figure 14. Recovery of NH₄⁺ added with the digestates one hour after addition (T0) and after 8 days of oxic incubation (T1) at 15 °C. A) NO₃⁻-N in loam. B) NH₄⁺-N in loam. C) NO₃⁻-N in silt. D) NH₄⁺-N in silt. Shown are averaged of three parallel incubation. Error bars denote standard SD.

The subtitle “3.3 Fate of NH₄ added” should be “3.3 Fate of nitrogen added”, and the text in this section should read:

The fate of nitrogen added with the digestates (14-140 $\mu\text{g N g}^{-1}$ soil, depending on the digestate; supplementary table 1) was studied by incubating soils adjusted to 60% WHC for 8 days under ambient atmosphere. Identical amounts of digestates were added as in Experiment 1 and 2, and mineral N (NH_4^+ and NO_3^-) was measured by extraction right after addition and after 8 days of incubation.

In the loam soil, the addition of digestates did not affect the KCl-extractable NO_3^- -N at $t=0$ (Fig. 14A), but NH_4^+ -N was increased by the addition of digestates (Fig. 14B). The amount of KCl-extractable ammonium exceeding that of unamended control soil 1 hour after addition was significantly less than the amount of added NH_4^+ in all treatment (supplementary Tab.1), suggesting significant chemical fixation on clay. After 8 days of incubation, all NO_3^- was consumed (Fig.14A), while NH_4^+ increased in 2 of the 6 amended soils (Fig. 14B), indicating that fresh ammonium was supplied by mineralization from the digestates while NO_3^- was depleted by denitrification. In the silt, the picture was similar to the loam, with the difference that NO_3^- background in the control soil was much higher than in loam (compare y-axis in Fig.14A and C) and that NO_3^- was still observed after 8 days of incubation. Moreover, the decrease of NO_3^- was affected by the type of digestates; the greatest decrease was observed in soil amended with digestate C which contained the lowest total inorganic N and the COD/TIN ratio (Fig. 14C). This is in agreement with highest accumulated N_2O production in experiment 1, which was found in silt with digestate C (Tab. 5). The increase of KCl-extractable NH_4^+ -N after 8 days of incubation was small in both soils, suggesting that N mineralisation from the digestates was small under the wet conditions chosen for the incubations.