Supplementary Figures to manuscript:

Unraveling the impact of lanthanum on methane consuming microbial communities in rice field soils

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**Supplementary Figure S1.** Top 30 microbes for start material; control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments at the ASV level in three different pH samples, from top to bottom respectively are acidic (a), neutral (b), alkaline (c) samples.

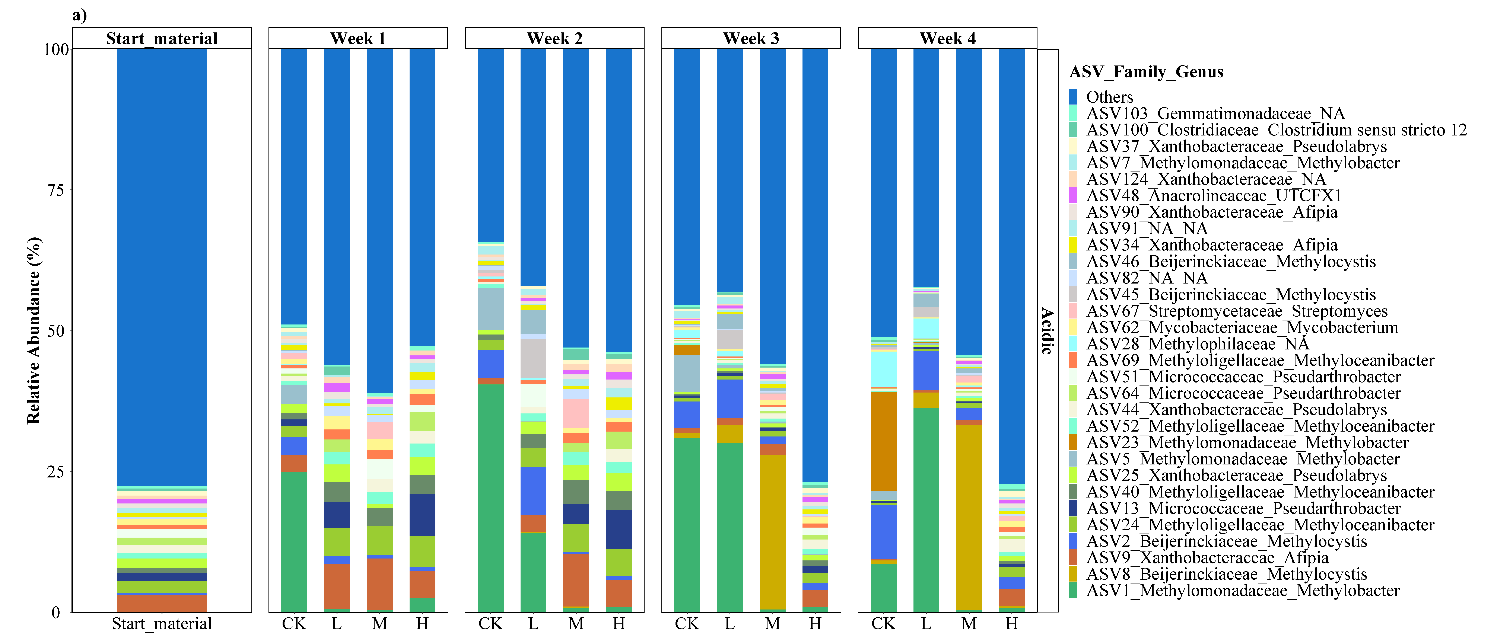
**Supplementary Figure S2.** β-diversity for start material, control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments in acidic (a), neutral (b), and alkaline (c) samples over time.

**Supplementary Figure S3.** Shannon diversity in three samples at different pH for start material, control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments (\*, *P* < 0.05; \*\*, *P* < 0.01; \*\*\*, *P* < 0.001; \*\*\*\*, *P* < 0.0001; ns, no significance). Distinct letters in the plot indicate statistically differences among different La3+ treatments (*P*<0.05).

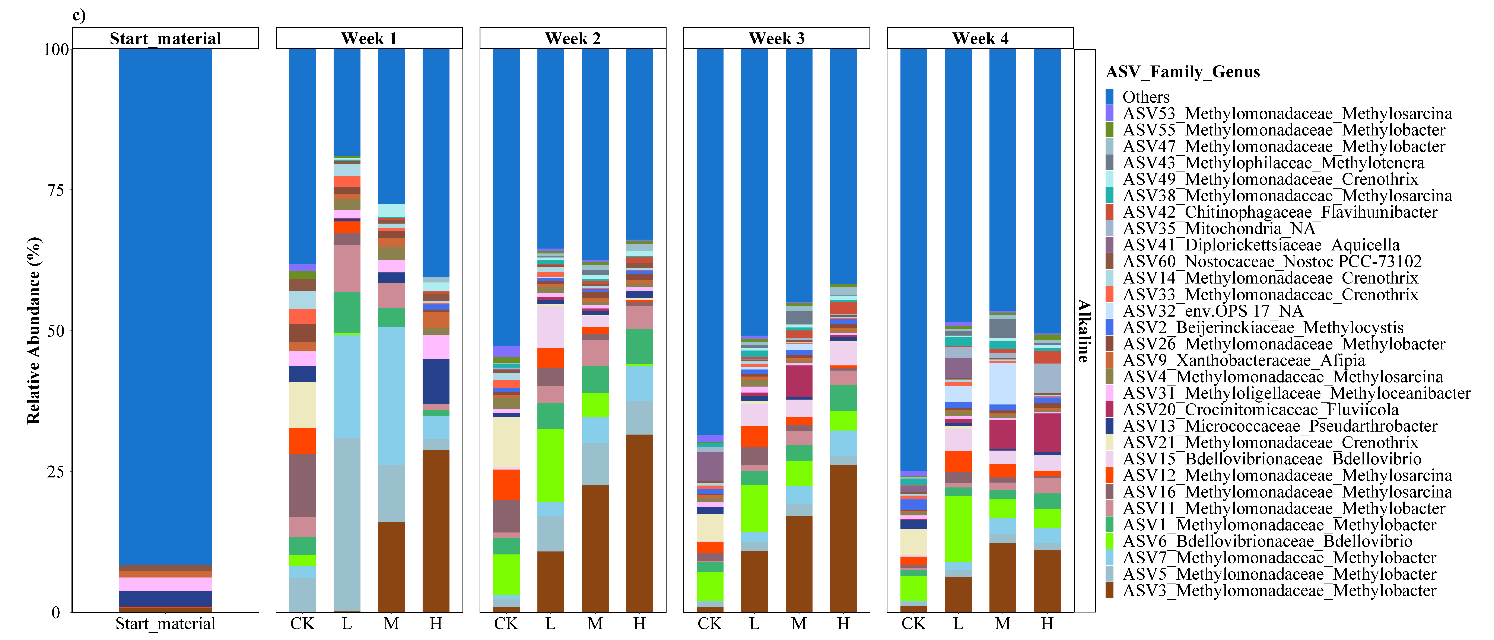
**Supplementary Figure S4.** The concentration of La in the supernatant for control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments (\*, *P* < 0.05; \*\*, *P* < 0.01; \*\*\*, *P* < 0.001; \*\*\*\*, *P* < 0.0001; ns, no significance). Error bars indicate SD (n=3), distinct letters in the plot indicate statistically differences among different La3+ treatments (*P*<0.05).

**Supplementary Figure S5.** Contents of NH4+, Ca2+, NO3-, and PO43- in the supernatant for control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments (\*, *P* < 0.05; \*\*, *P* < 0.01; \*\*\*, *P* < 0.001; \*\*\*\*, *P* < 0.0001; ns, no significance). Error bars indicate SD (n=3), distinct letters in the plot indicate statistically differences among different La3+ treatments (*P*<0.05).

**Supplementary Figure S6.** Fractions of La3+ content recovered after 4 weeks of incubation in soil particles and supernatant of 300 (L), 600 (M), and 1200 (H) La treatments.



图表, 条形图

描述已自动生成 

**Supplementary Figure S1.** Top 30 microbes for start material; control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments at the ASV level in three different pH samples, from top to bottom respectively are acidic (a), neutral (b), alkaline (c) samples.

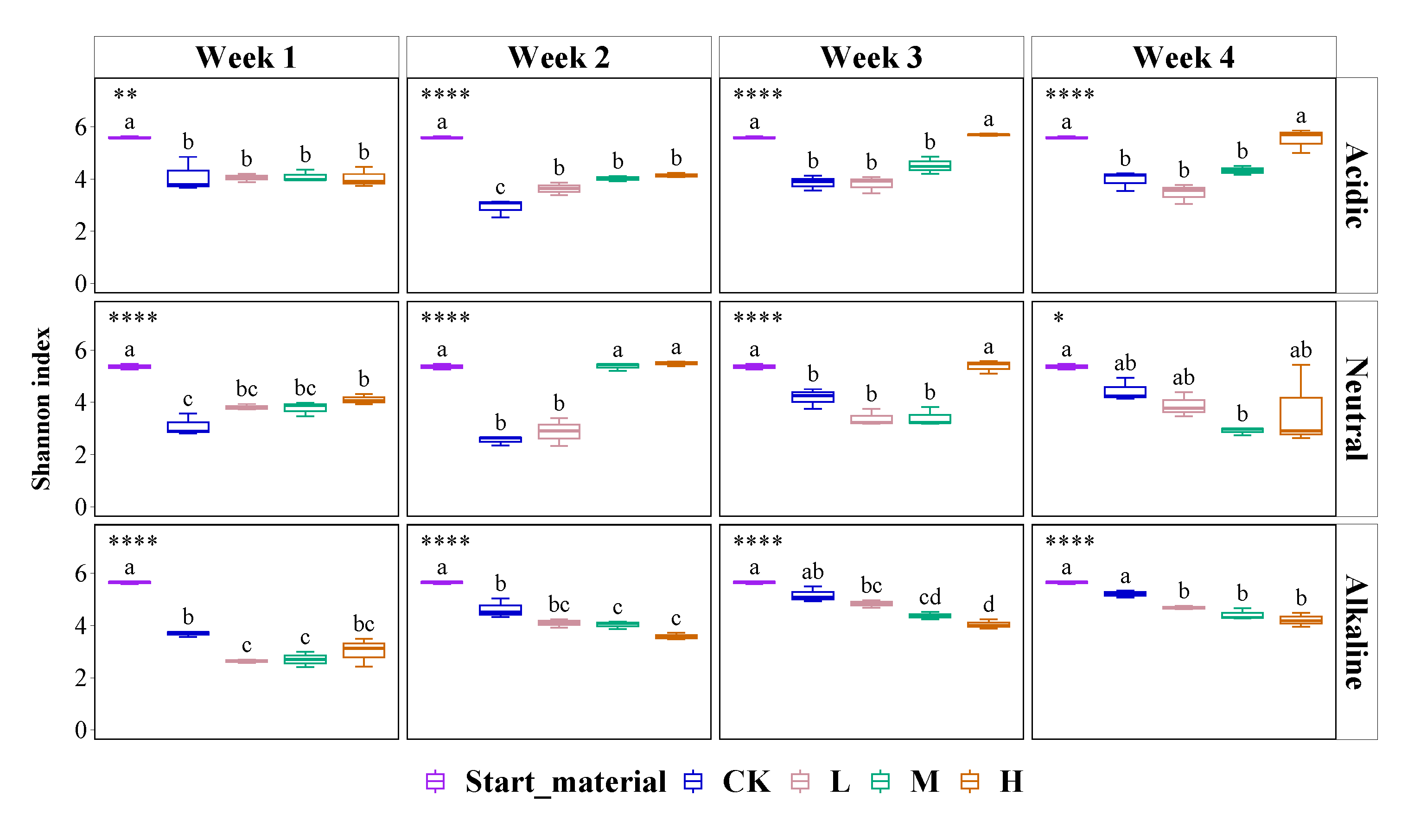


图表, 散点图

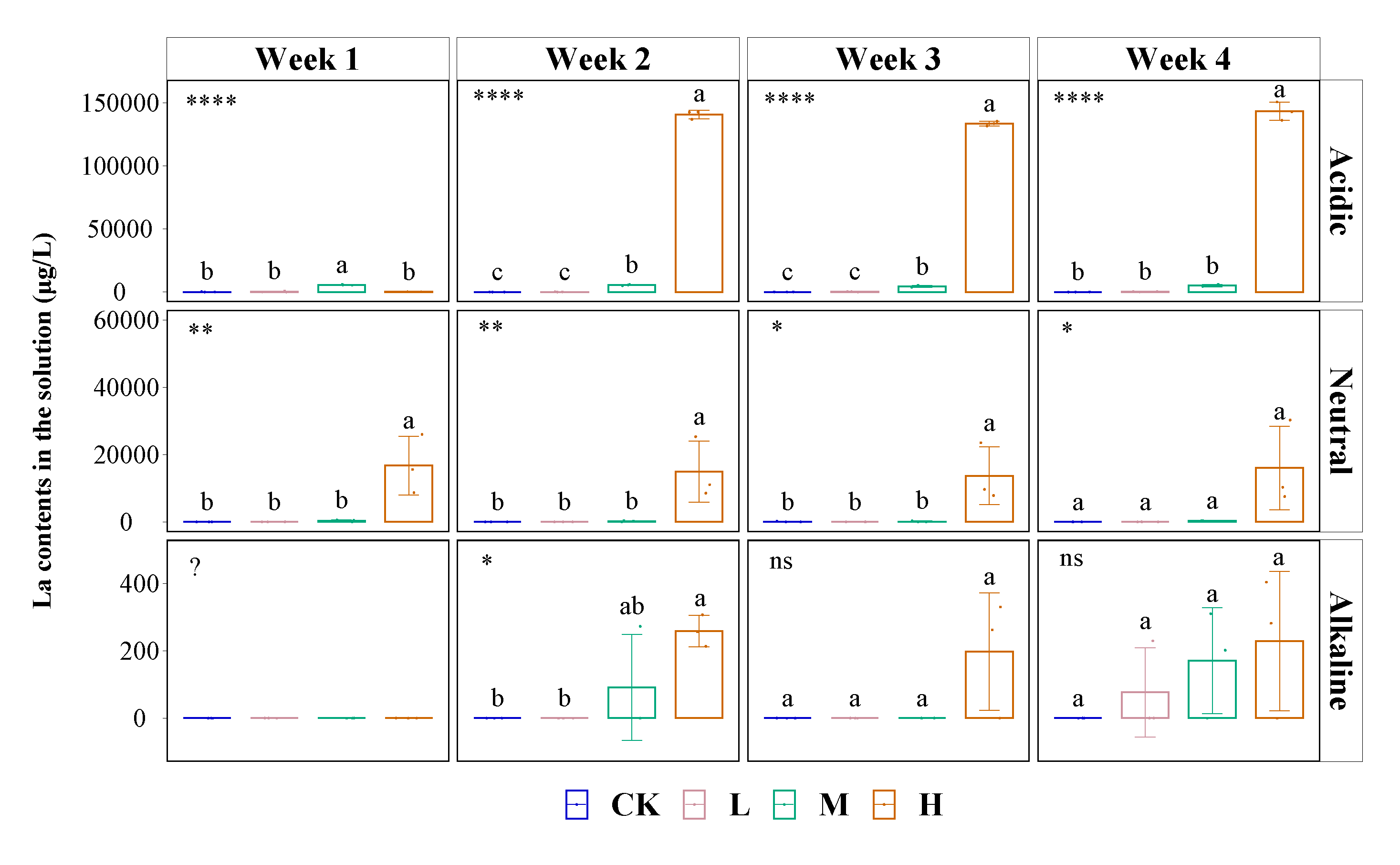
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图表

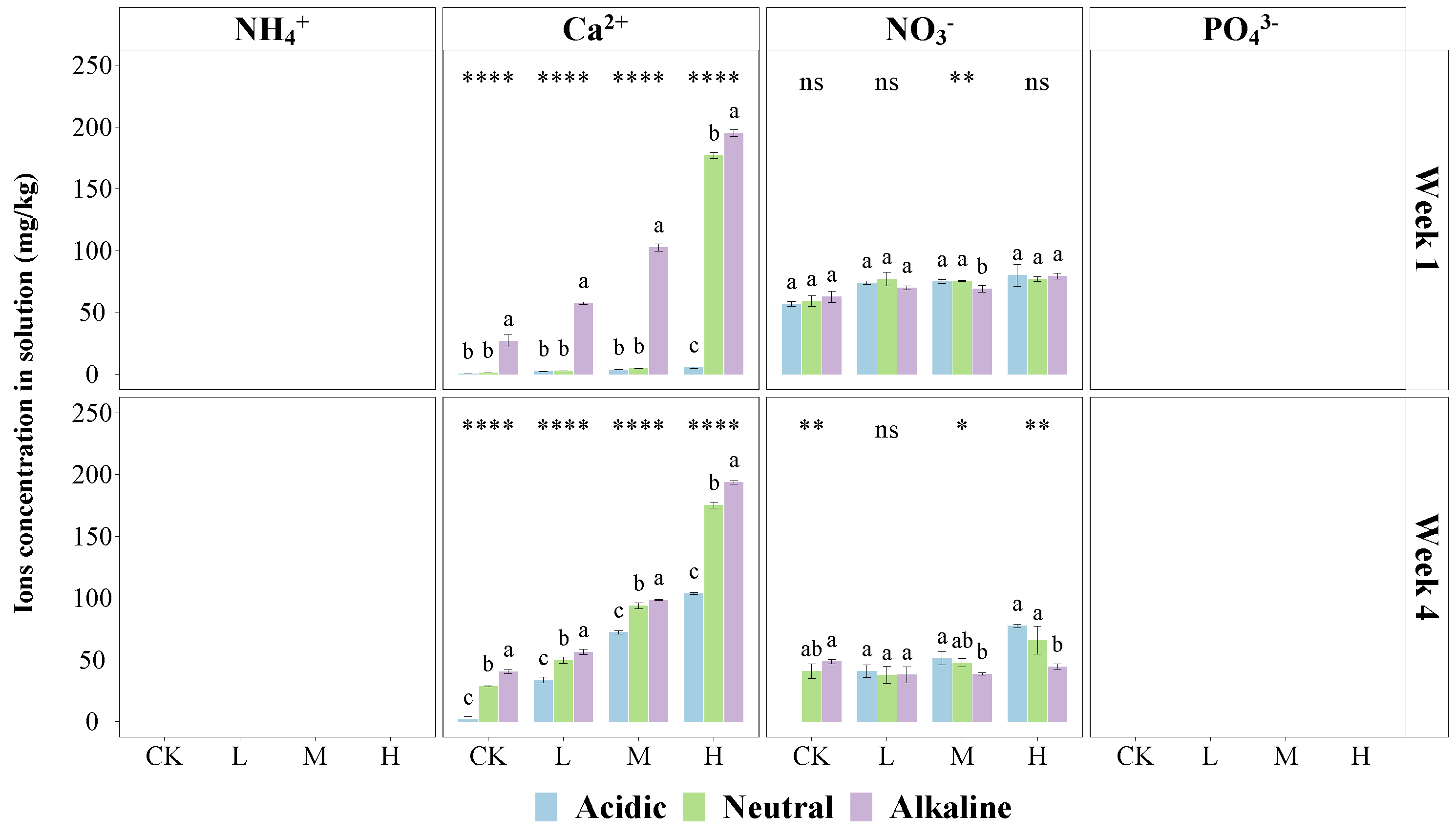
描述已自动生成**Supplementary Figure S2.** β-diversity for start material, control (CK), 300 (L), 600 (M), and 1200 (H) mg/L La treatments in acidic (a), neutral (b), and alkaline (c) samples over time.



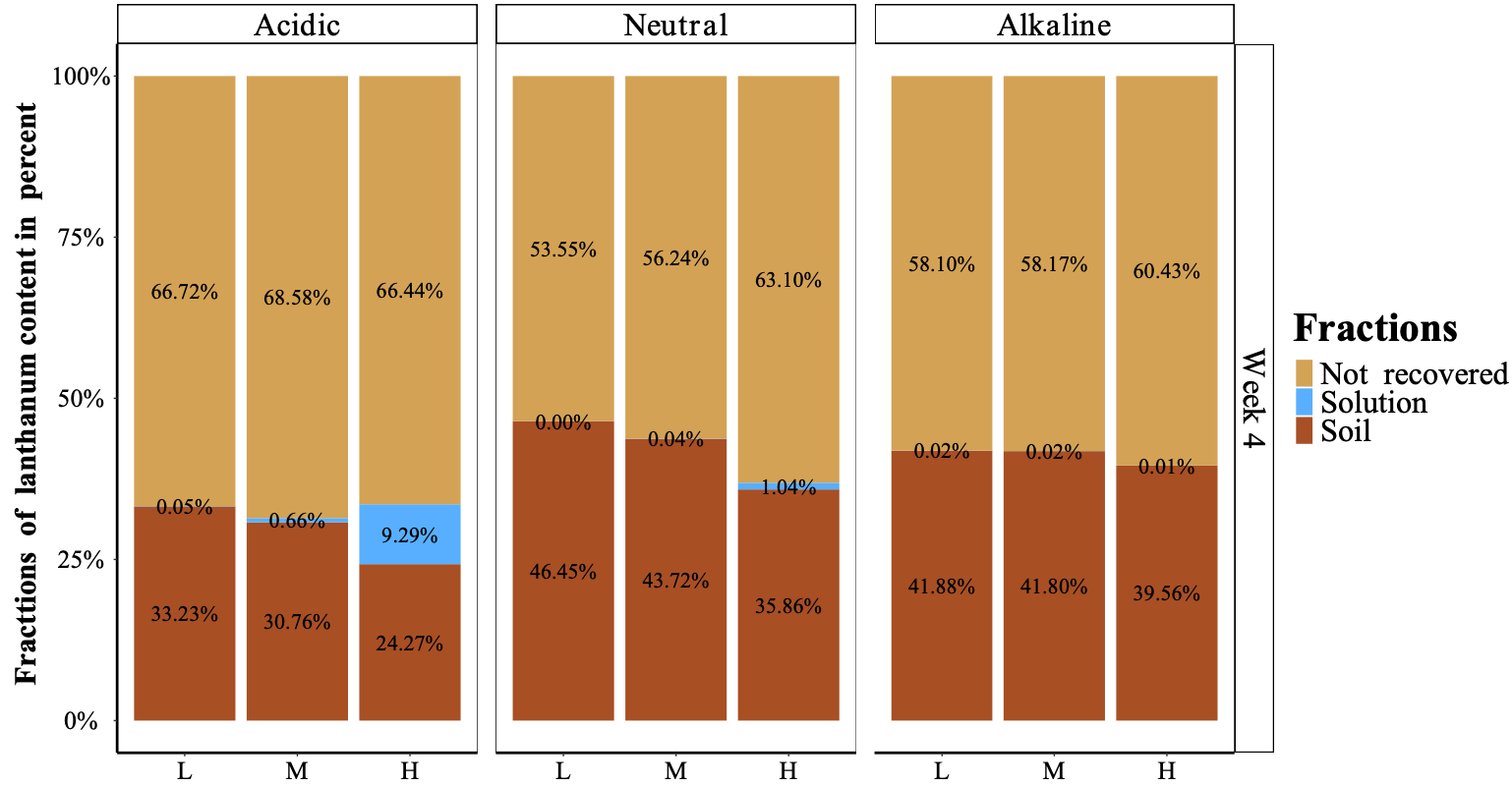
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