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Supplement of

Contrasting pH buffering patterns in neutral-alkaline soils along a 3600 km transect in northern China

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Figure S1 A 3600-km long transect (1900 km with carbonate-containing soils and 1700 km with non-carbonate containing soils) in arid and semi-arid regions of northern China was sampled.

Figure S2 Changes of mean annual precipitation (MAP) and temperature (MAT) from east to west along the longitude gradient.

Figure S2 Titration curves for selected carbonate containing soils (#12, #23, and #36) and non-carbonate containing soils (#45, #58 and #62). Points show data and lines show the fitted curves.

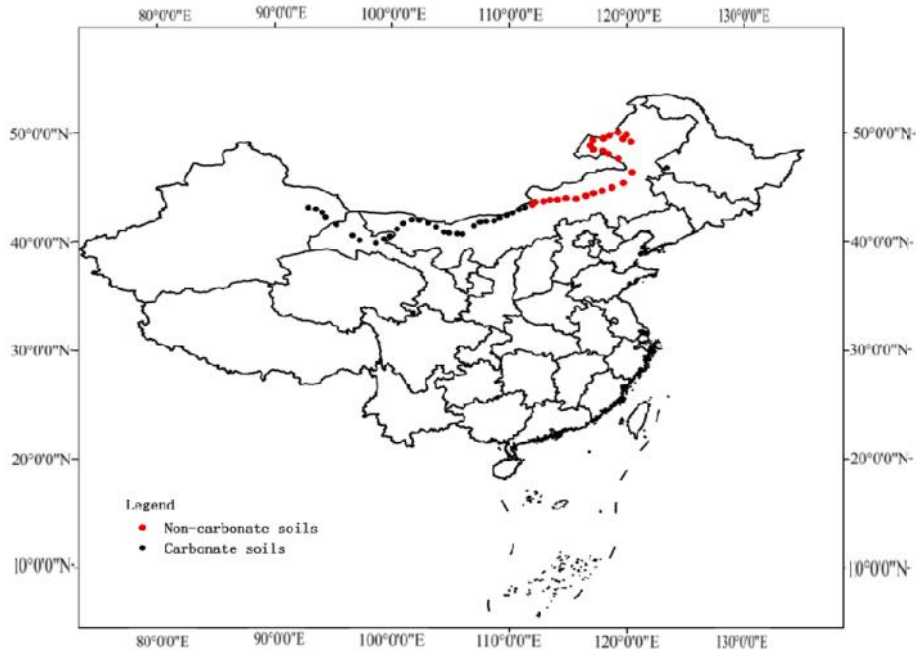
Figure S3 Relationships between soil pH buffer capacity (pHBC) at the mid-point of the titration curve and pHBC at fixed values of pH (pH7.5 in the carbonate containing soils and pH 5 and 6 in the non-carbonate containing soils).

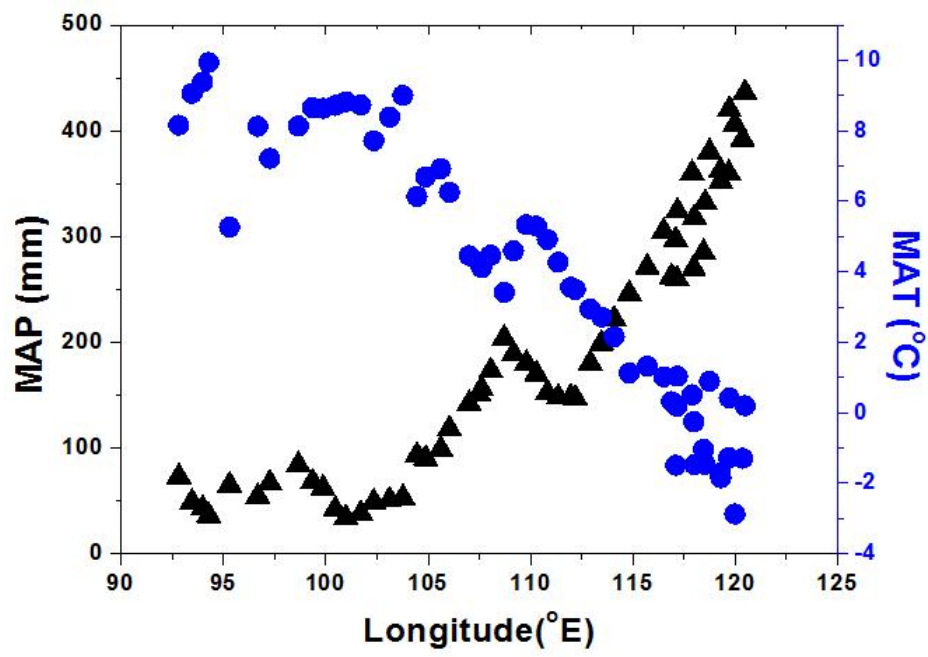
Figure S5 Relationships between soil clay content and cation exchange capacity (CEC) for the carbonate containing soils and the non-carbonate containing soils.

Figure S6 Soil pH buffering capacity (pHBC) as a function of pH for the carbonate containing soils (#12, #23 and #36) and the non-carbonate containing soils (#45, #58 and #62).

Figure S7 Relationships between soil variables (carbonate content, organic carbon content, soil cation exchangeable capacity) and initial pH along the transect in northern China.

Figure S8 Relationships between soil pH and aridity index along the transect in northern China.





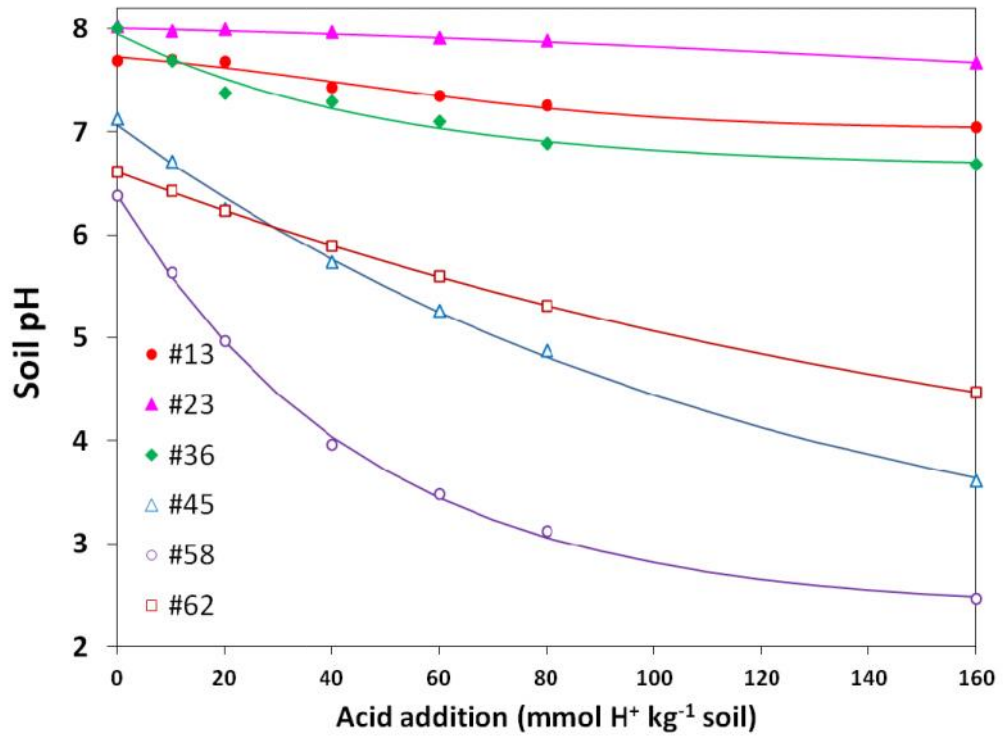


Figure S2

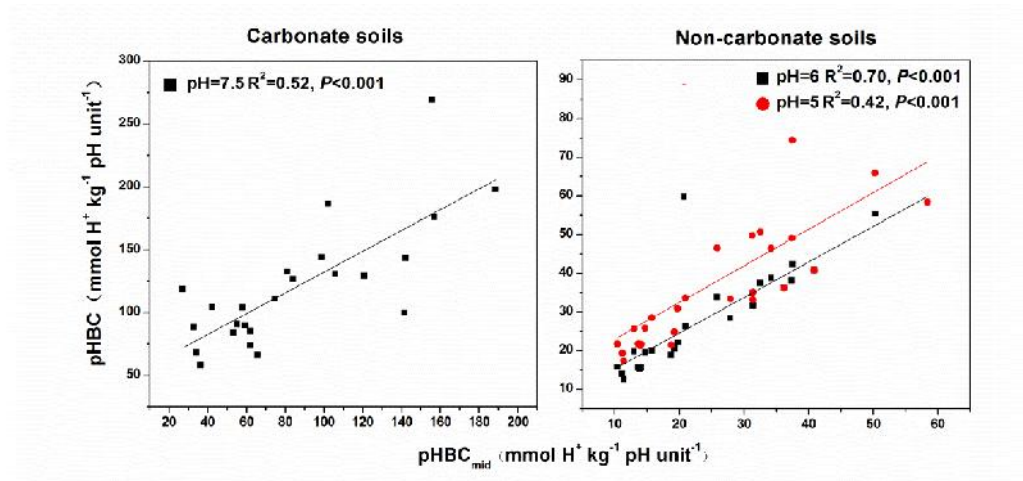


Figure S3

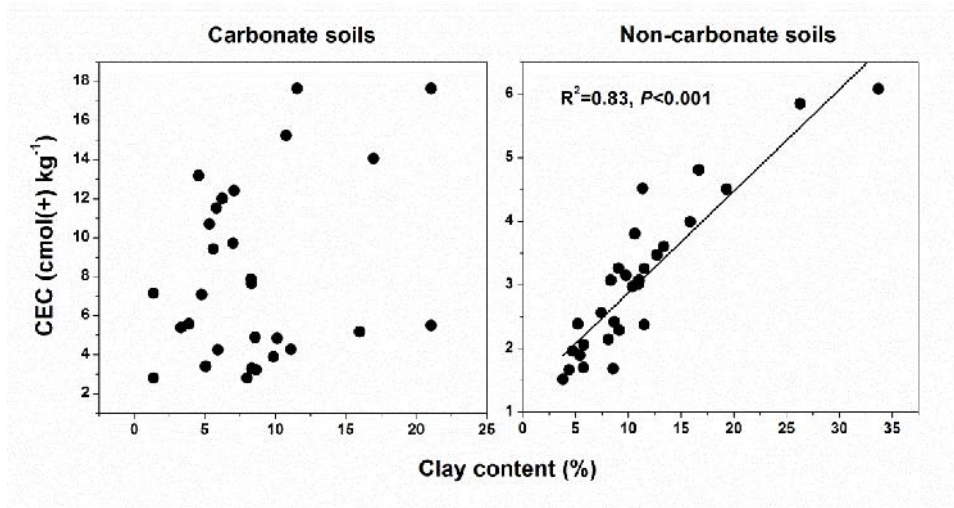


Figure S4

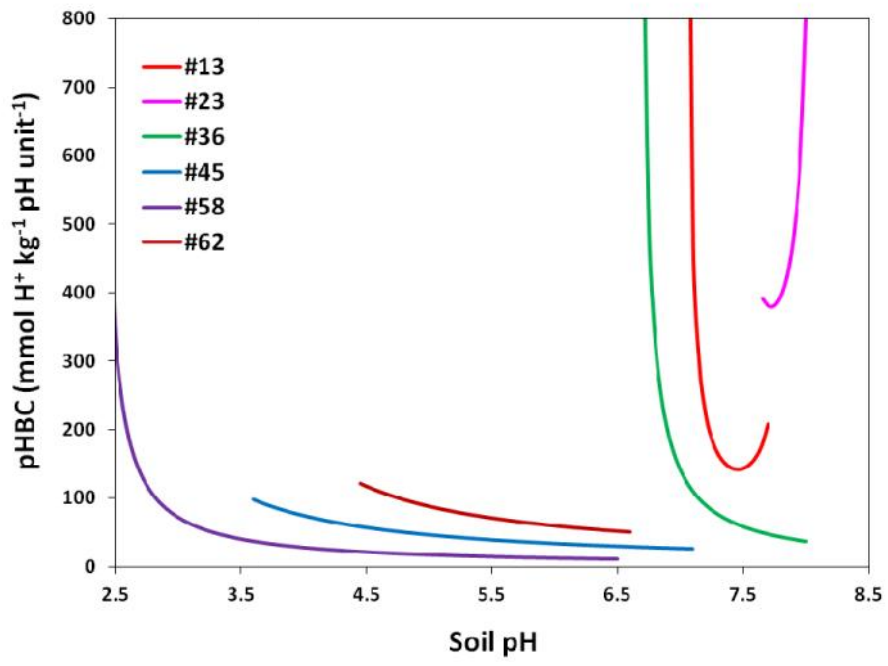


Figure S5

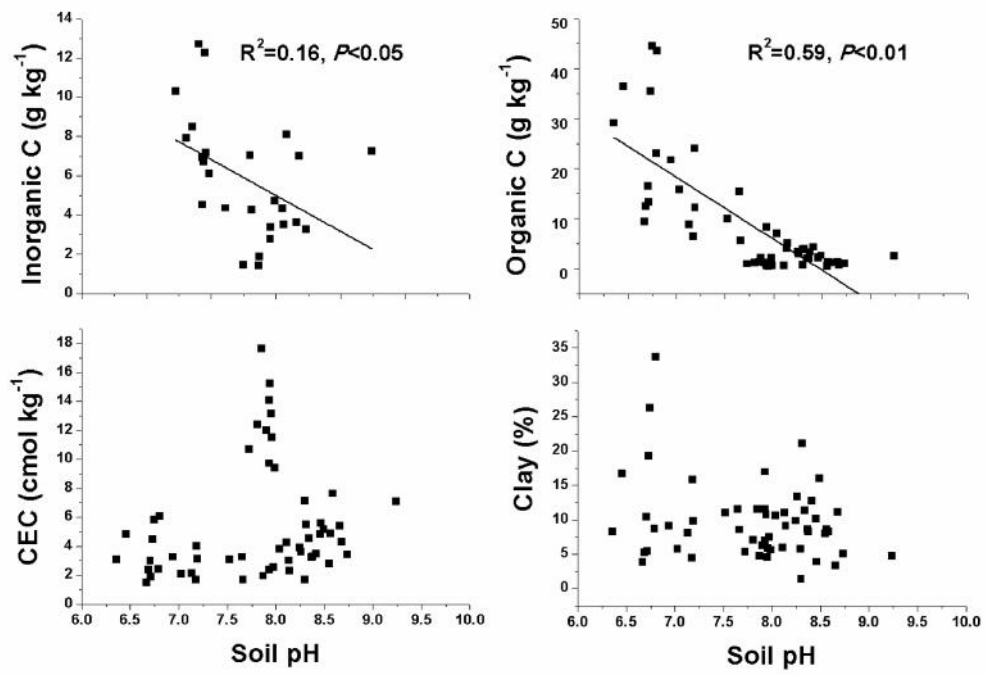


Figure S6

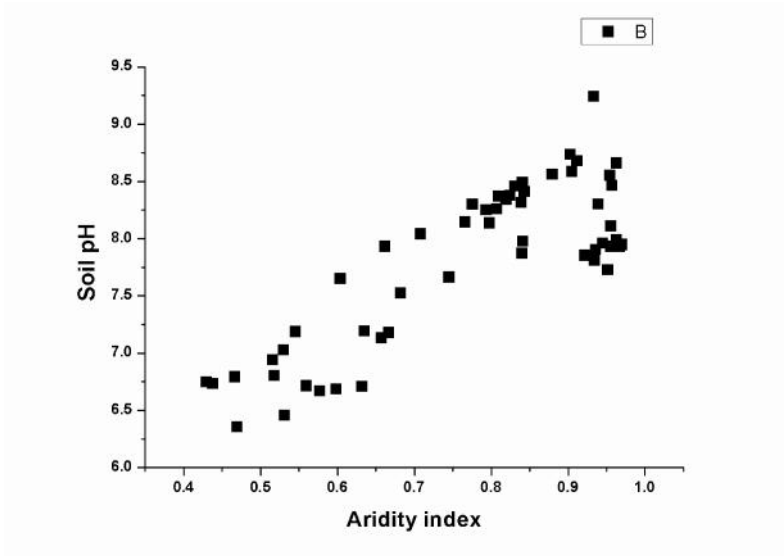


Figure S7