



Supplement of

Biochar alters hydraulic conductivity and impacts nutrient leaching in two agricultural soils

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Table S1: Functional group assignments corresponding to organic biomass

Wavenumber (cm ⁻¹)	Assignment*
1695-1720	$\nu(\text{C}=\text{O})$ vibration aromatic carbonyl/ carboxyl C=O stretching
1640-1660	$\nu(\text{C}=\text{C})$ vibration, C=C aromatic ring
1540-1650	$\nu_{\text{as}}(\text{COO}^-)$
1580-1590	Skeletal C=C vibration
1459	$\delta(\text{C-H})$ vibrations in CH ₃ and CH ₂
1400-1380	$\nu_{\text{s}}(\text{COO}^-)$
1377	$\nu(\text{C-O})$ vibration aromatic and $\delta(\text{C-H})$ vibrations in CH ₃ and CH ₂
1154	Aromatic C-O stretching
1080-1040	$\nu(\text{C-O})$ stretch of polysaccharides
1000-1010	$\nu(\text{Si-O})$
870-881	1 adjacent H deformation
833	$\nu(\text{metal-O})$
819	2 adjacent H deformation
703	$\nu(\text{metal-O})$
760-765	4 adjacent H deformation
654-664	$\gamma(\text{OH})$ bend

* FTIR band assignments from Parikh et al. (2014)

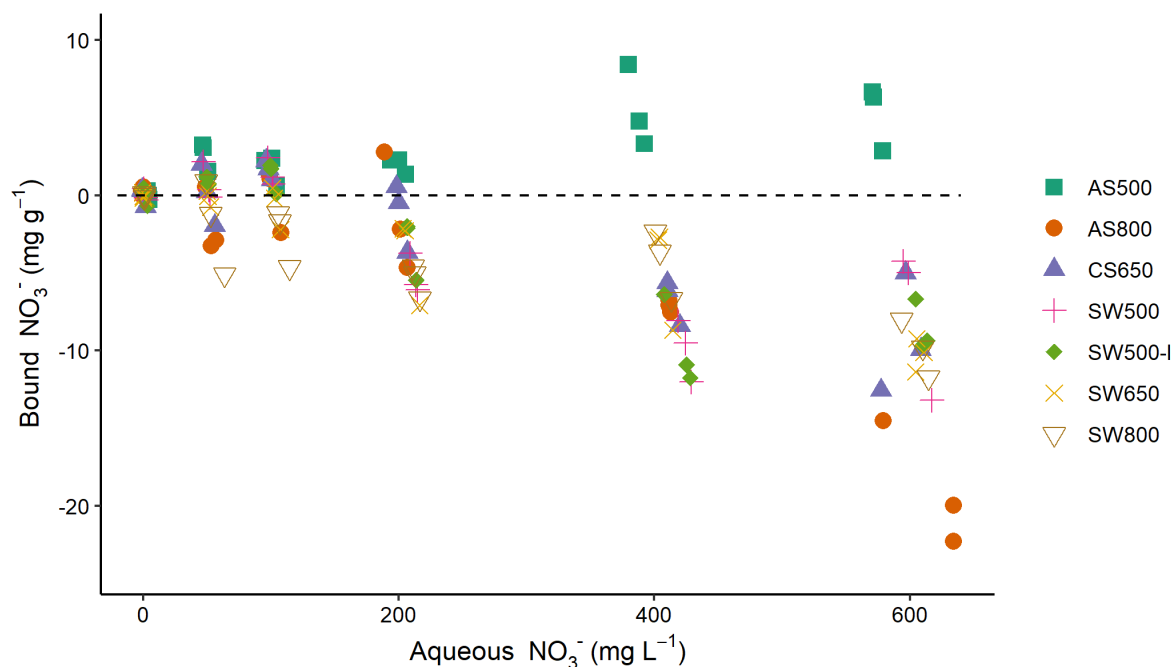


Figure S1. Sorption isotherms for nitrate and biochars, performed in at 22 ± 1 °C. All solutions were prepared in 0.1 mM NaCl and spiked at 1% volume with a stock solution of 20 g L⁻¹ sodium azide to inhibit microbial growth. Negative values (all those below the dotted line) reflect nitrate release rather than removal.