

Figure S1. Daily mean temperature and precipitation during the four buckwheat growing seasons in 2020–2023.

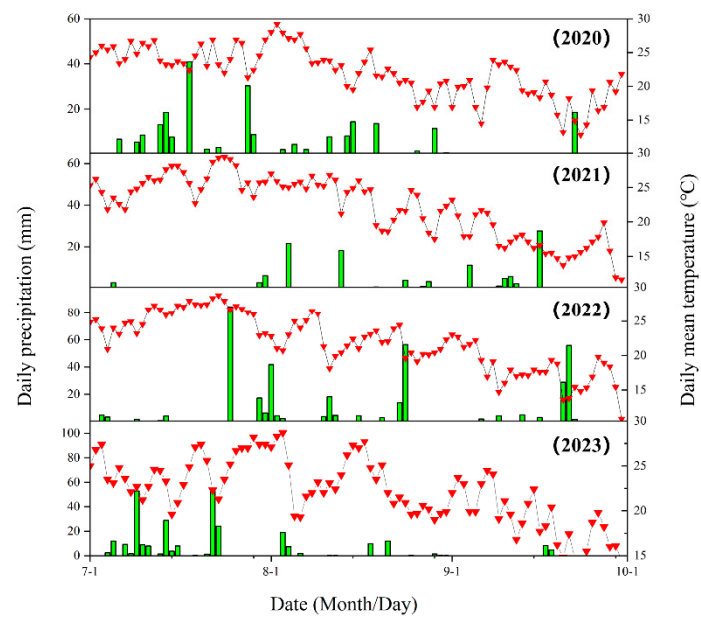


Figure S2 Relative abundance of the 10 most abundant phyla (a) and genera (b) of bacteria (> 1%) across all treatments. Vertical bars are standard errors of the mean (n = 4). Pairs of bars with the same letter between treatments within the same phylum and genus are not significantly different at $p \leq 0.05$. L-HA0, L-HA1, L-HA2, and L-HA3 represent L-HA application rates at 0, 2, 4, and 6 $\text{ton} \cdot \text{ha}^{-1}$, respectively.

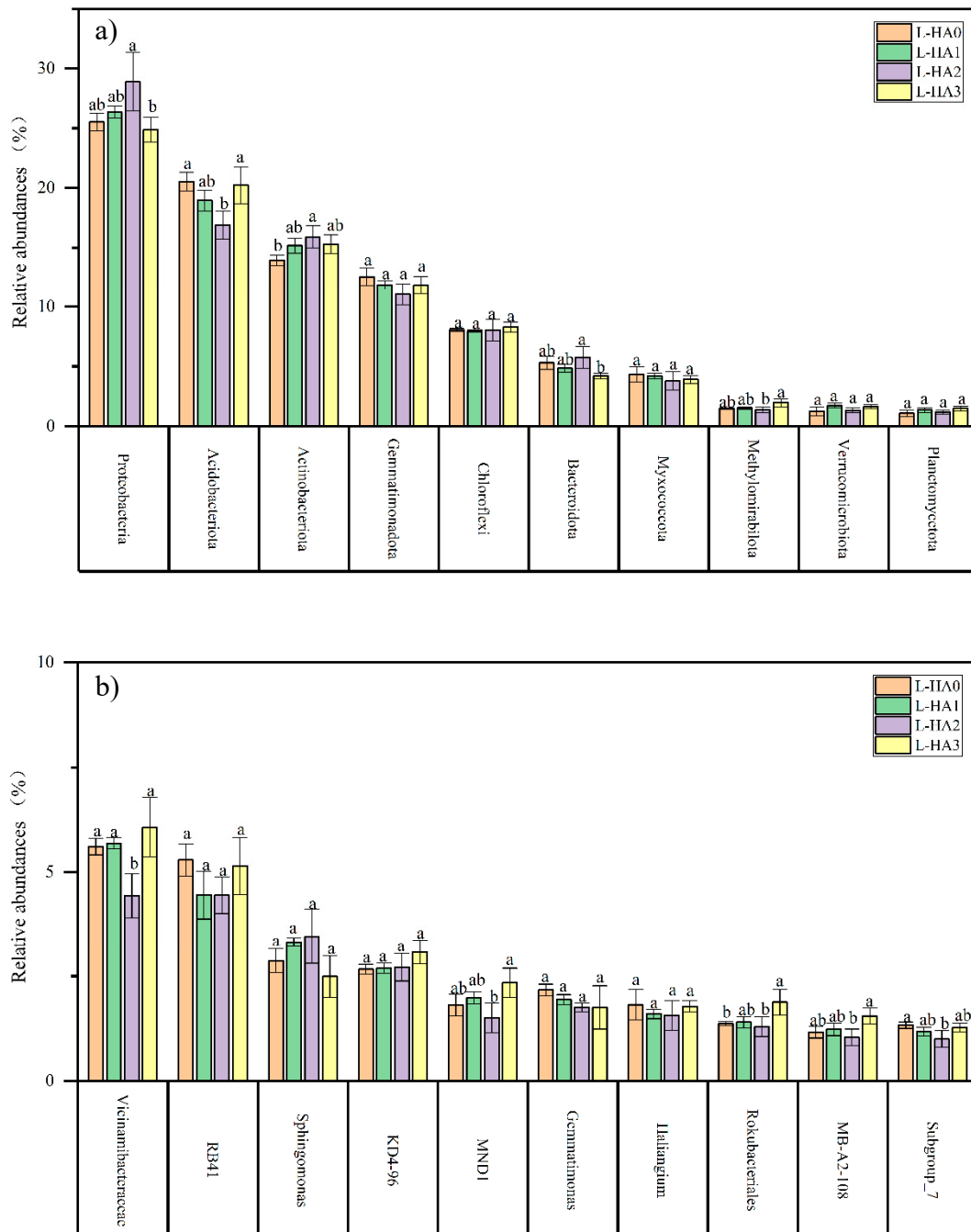


Figure S3 Relative abundance of the 4 most abundant phyla (a) and the 10 most abundant genera (b) of fungi (> 1%) across all treatments. Vertical bars are standard errors of the mean (n = 4). Pairs of bars with the same letter between treatments within the same phylum and genus are not significantly different at $p \leq 0.05$. L-HA0, L-HA1, L-HA2, and L-HA3 represent L-HA application rates at 0, 2, 4, and 6 ton·ha⁻¹, respectively.

