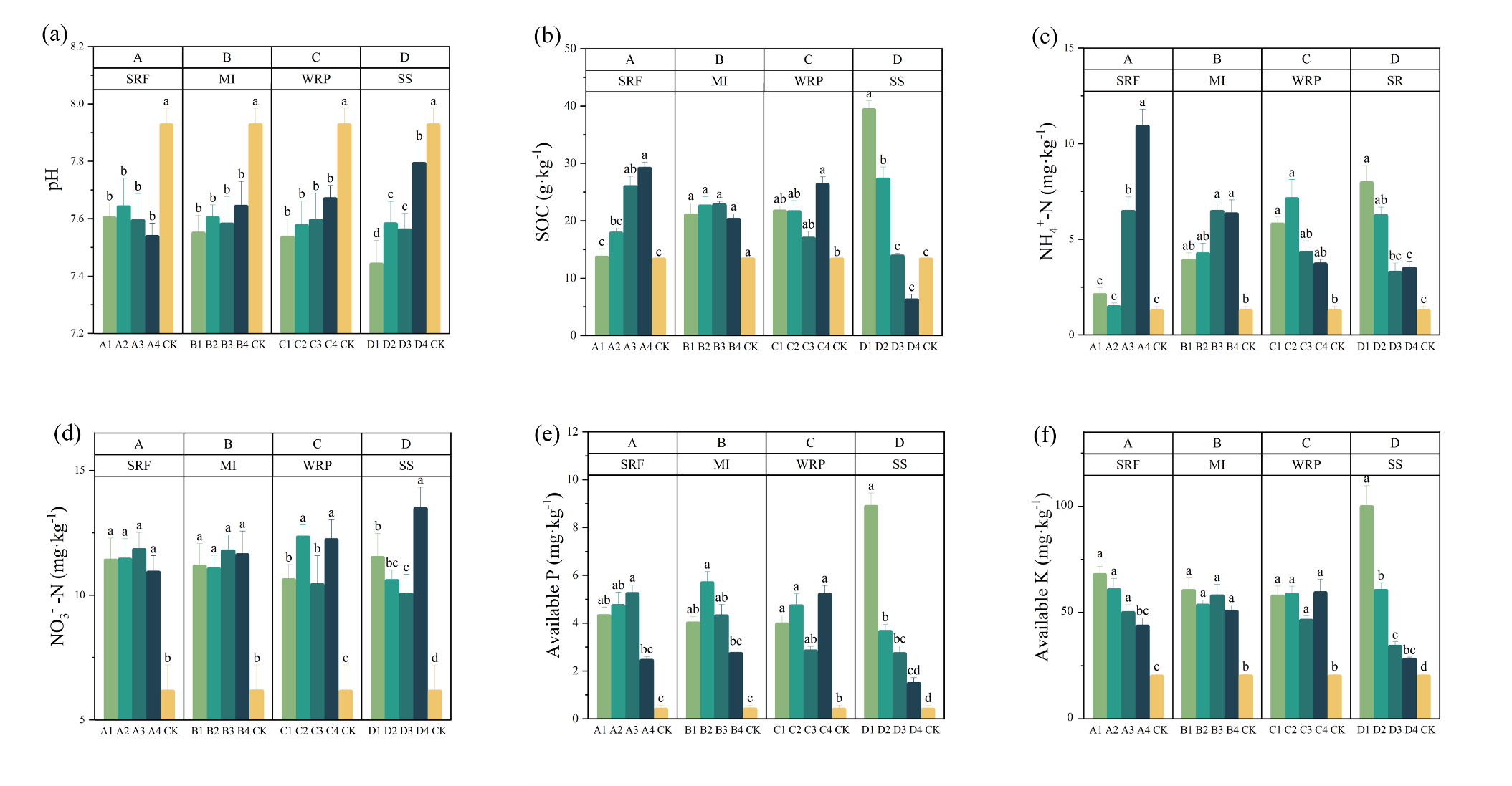
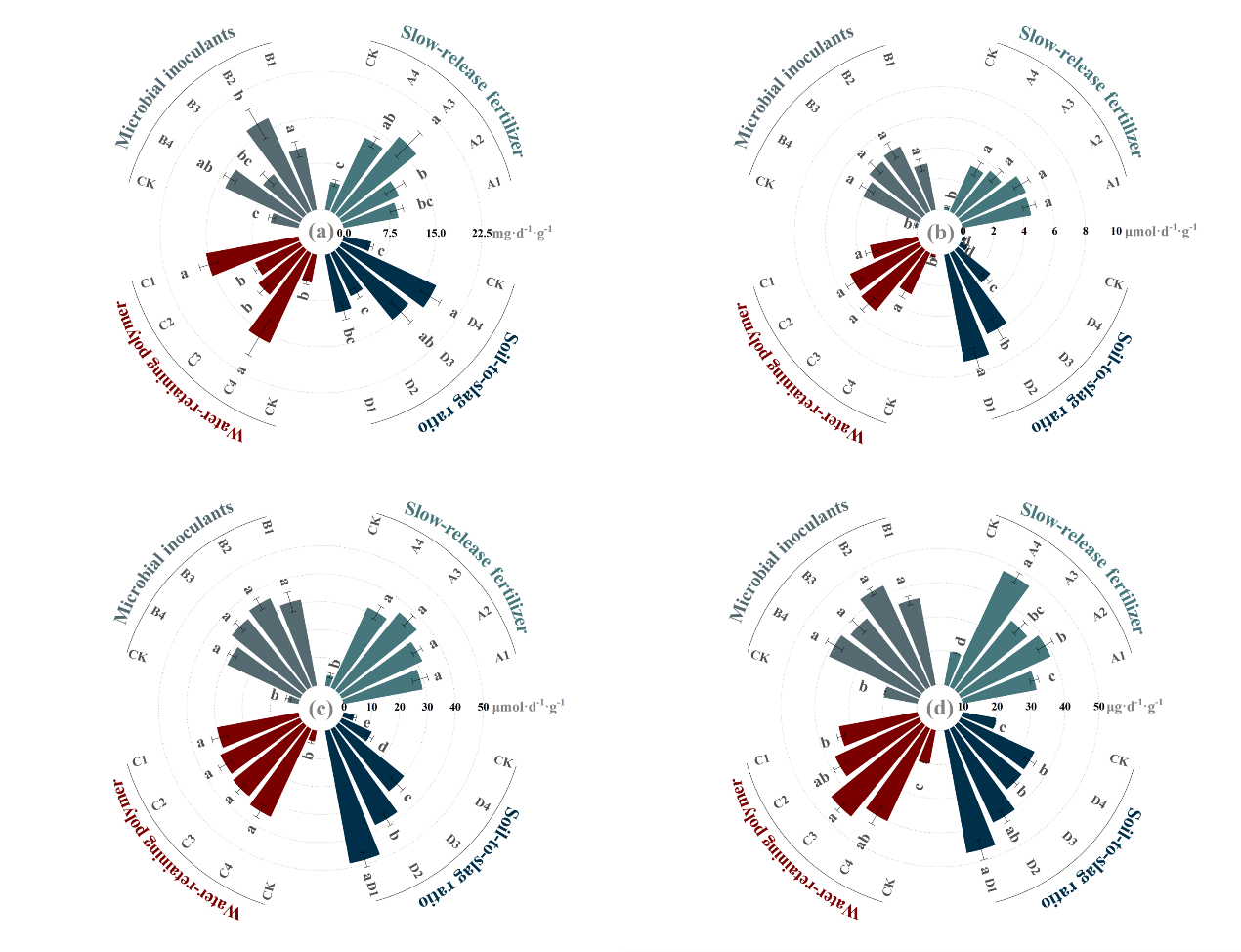


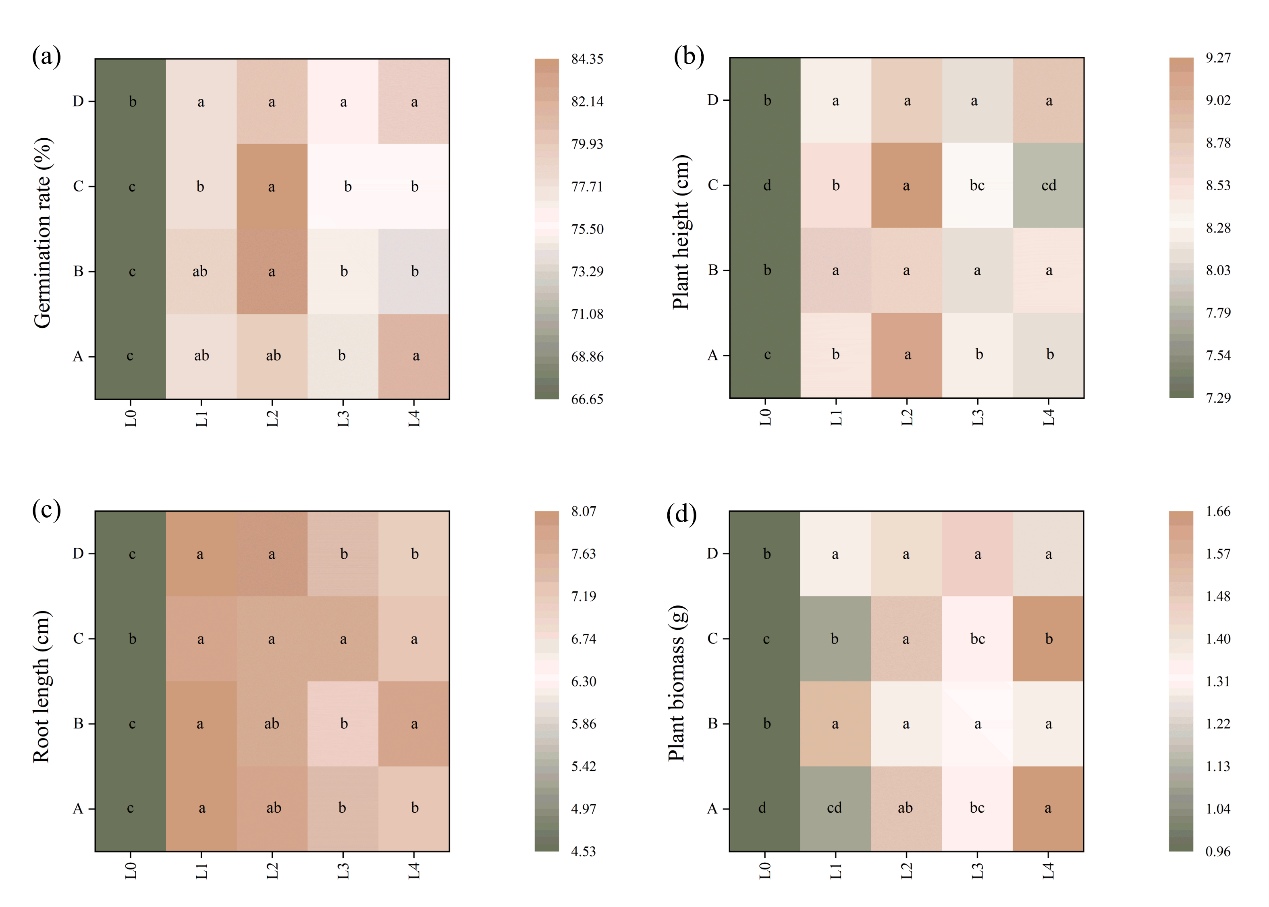
Fig. 1. Effects of Slow-release fertilizer(A), Microbial inoculants(B), Water-retaining polymer(C) and Soil-to-slag ratio(D) on soil physicochemical properties. (a) Bulk density; (b) EC; (c) Natural moisture content;(d) Saturated water content; (e) Capillary porosity;(f) Total porosity. Data are expressed as the mean ± standard deviation of three replicates. Different lowercase letters indicate significant differences (p < 0.05).



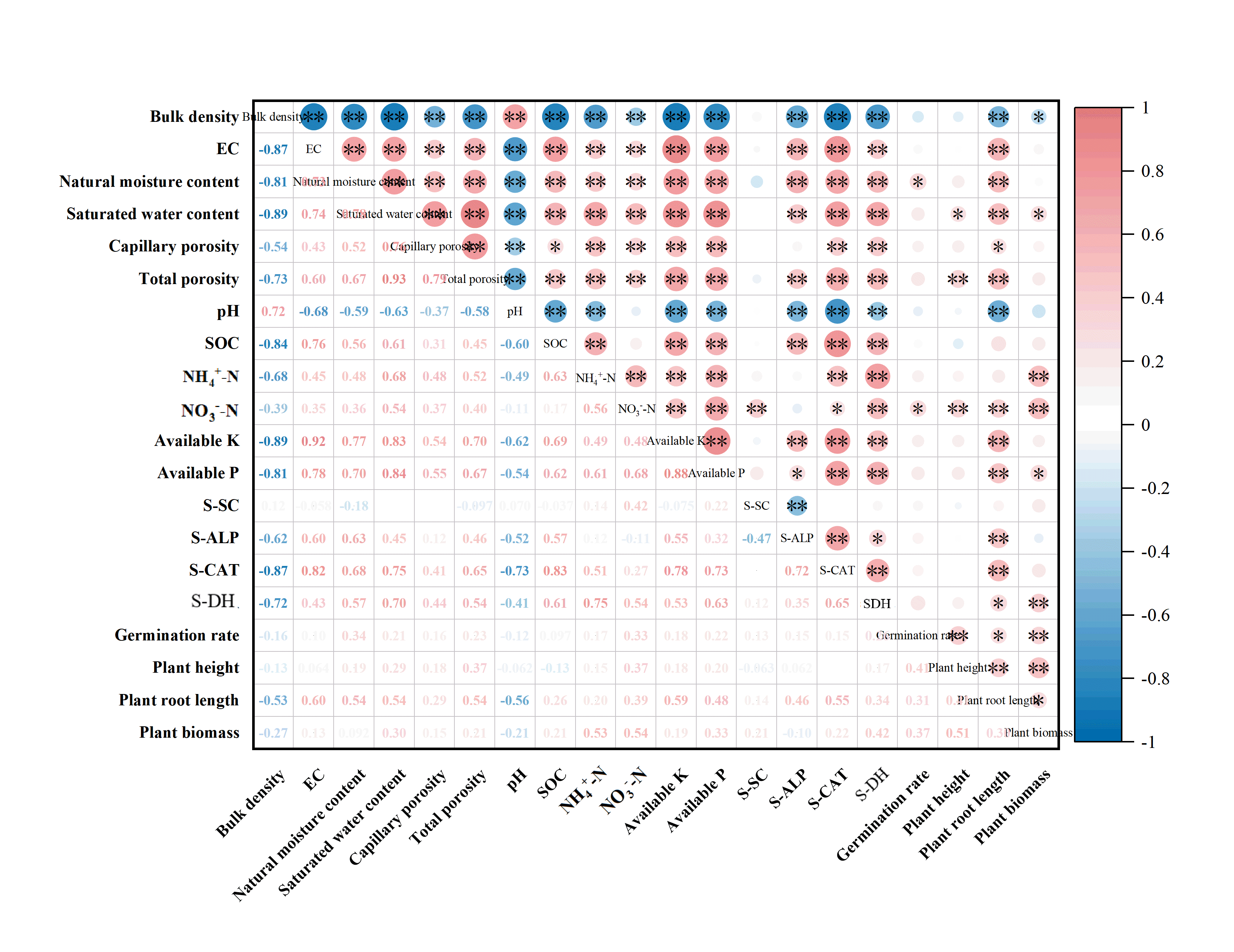
**Fig. 2.** Effects of Slow-release fertilize/SRF(A), Microbial inoculants/MI(B), Water-retaining polymer/WRP(C) and Soil-to-slag ratio/SS(D) on soil physicochemical properties. (a) pH; (b) SOC; (c) NH4+-N; (d) NO3--N; (e) Available P; (f) Available K. Data are presented as the mean ± standard deviation of three replicates. Different lowercase letters indicate significant differences (p < 0.05).



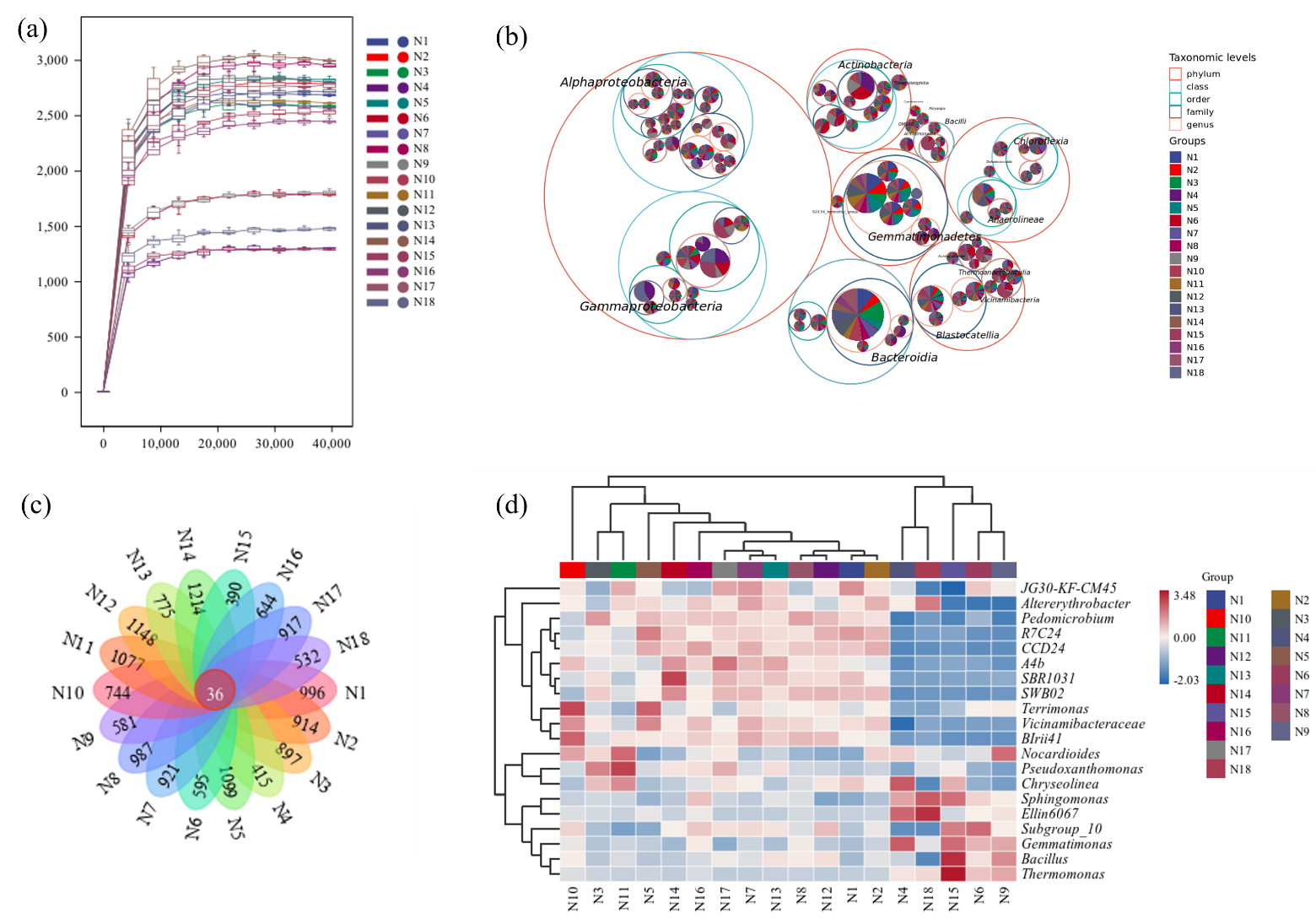
**Fig. 3.** Effects of Slow-release fertilizer(A), Microbial inoculants(B), Water-retaining polymer(C) and Soil-to-slag ratio(D) on soil enzyme activity. (a) S-SC; (b) S-ALP; (c) S-CAT; (d) S-DH. Data are presented as the mean ± standard deviation of three replicates. Different lowercase letters indicate significant differences (p < 0.05).



**Fig. 4.** Effects of Slow-release fertilizer(A), Microbial inoculants(B), Water-retaining polymer(C) and Soil-to-slag ratio(D) on growth (a-d) of *Lolium perenne* L.. (a) Germination rate; (b) Plant height; (c) Root length; (d) Plant biomass. Different lowercase letters indicate significant differences (p < 0.05).



**Fig. 5.** Correlations between soil properties and growth indicators of *Lolium perenne* L.. The color of the circle represents the strength of the positive and negative correlation, and the size of the circle represents the size of the Spearman correlation coefficient. (\* *P* ≤ 0.05, \*\* *P* ≤ 0.01)



**Fig. 6.** Microbial community analysis.(a) Rarefaction curve (b) Taxonomic tree; (c) Flower diagram of distribution of OUTs (d) Heatmap of different samples at genus level. (N17 is 100% soil and N18 is 100% slag)