Descriptive statistics

Table S1, a, b, c.

a. Descriptive statistics on soil chemical and biological properties

Soil	Mean	Standard deviation	Skewness	Kurtosis	K-S (p value)
pH	7.515	0.034322	0.525623	0.690241	***0.1916 (0.02102)***
EC	0.33257	0.036311	0.272524	-0.8731	0.09361 (0.63507)
TOC	18.04433	1.51254	0.367517	0.427885	0.06847 (0.92266)
Total N	1.5455	0.165922	1.722513	5.642806	0.14752 (0.13264)
WEOC	63.88105	17.00094	0.722833	0.650943	0.09902 (0.90234)
Soil respiration during the incubation period					
1 day	5.99148	2.609705	0.214076	-0.82927	0.13113 (0.63347)
3 days	3.92342	1.121952	0.01364	-1.11835	0.10193 (0.88327)
7 days	4.01891	1.359112	-0.0419	-0.78379	0.09733 (0.91258)
10 days	2.87704	1.084338	0.028722	-0.2135	0.12428 (0.69703)
14 days	2.29957	0.806543	0.736607	0.551908	0.11249 (0.80203)
21 days	1.64649	0.496593	0.274553	-0.927848	0.09819 (0.90743)
28 days	1.42337	0.472046	0.052348	-0.227664	0.07166 (0.99488)

b. Descriptive statistics on soil physical properties. The pressure head values are reported in absolute value.

	Mean	Standard deviation	Skewness	Kurtosis	K-S (p value)
Bulk density	1.06222	0.040629	-0.05383	-0.10632	0.09825 (0.90705)
Pressure head					
2.5	0.60721	0.01817	0.70037	-0.00111	0.13808 (0.56945)
5	0.59160	0.01790	0.62169	-0.24163	0.12918 (0.65165)
10	0.58561	0.01614	0.33744	-1.001758	0.1167 (0.76574)
20	0.54829	0.01949	0.97110	1.12105	0.17594 (0.27707)
40	0.43242	0.03427	1.05214	1.61555	0.10405 (0.8684)
70	0.36206	0.02061	0.95598	0.27333	0.16771 (0.32993)

c. Descriptive statistics on grain yield and quality

	Mean	Standard deviation	Skewness	Kurtosis	K-S (p value)
Grain yield	2.66933	0.620098	1.020081	1.453551	0.13297 (0.92195)
Protein content	11.03333	0.309023	-0.40788	-0.795824	0.1219 (0.95912)
Gluten content	6.64133	0.374983	-0.79847	-0.205361	0.15528 (0.81023)
Yellow Index	13.002	0.24066	-0.68893	0.816467	0.13612 (0.90904)
Test weight	82.06867	0.600117	0.589663	0.62405	0.11577 (0.97388)

Table S2. Encoding of dummy code for categorical variables. Each fertilizer treatment corresponds to a string of 1-0 code combination.

Fertilizer	Dummy code				
CHAR10	1	0	0	0	0
CHAR30	0	1	0	0	0
COMP	0	0	1	0	0
MIN	0	0	0	1	0
TEST	0	0	0	0	1