

Supplementary Information

Effects of Straw Return and Moisture Condition on Temporal Changes of DOM Composition and Cd Speciation in Polluted Farmland Soil

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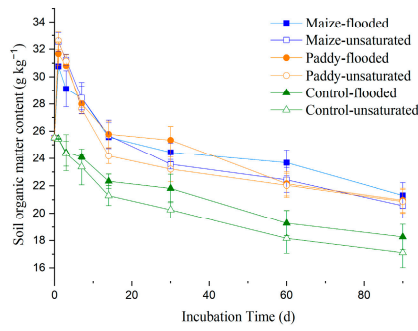
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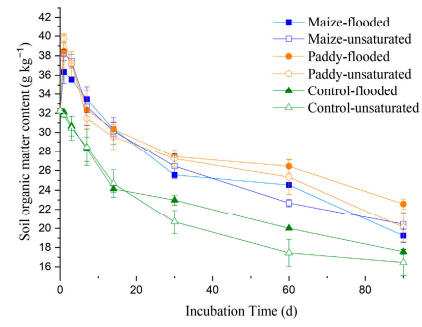
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Number of figures: 3

Number of tables: 2

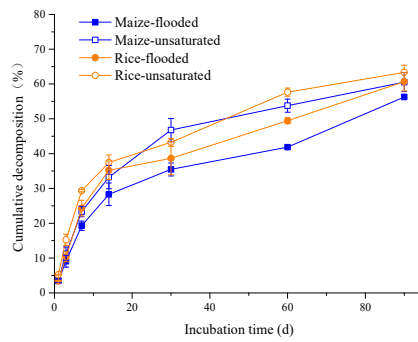


(a)

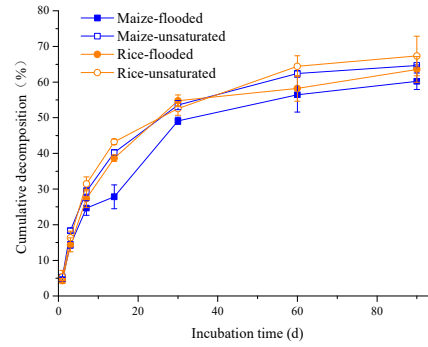


(b)

Figure S1. Temporal changes of organic matter content in the soils (collected from sites A (a) and B (b)) with or without thorough mixing with straw during laboratory incubation under different moisture conditions.

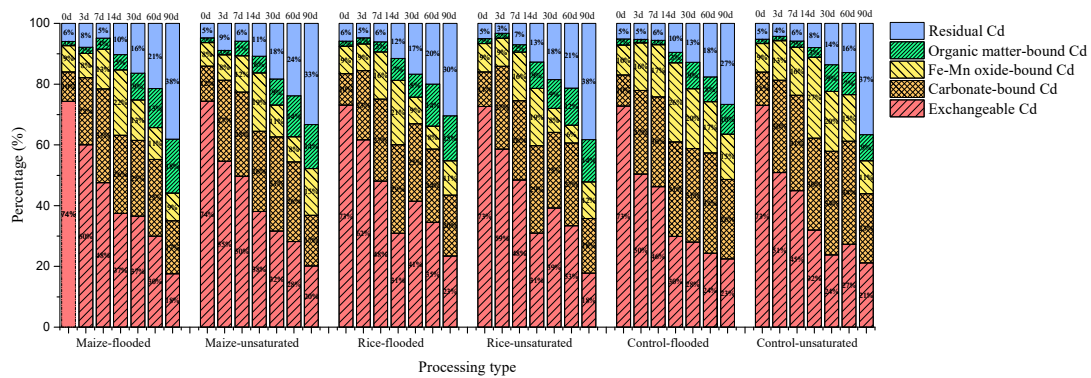


(a)

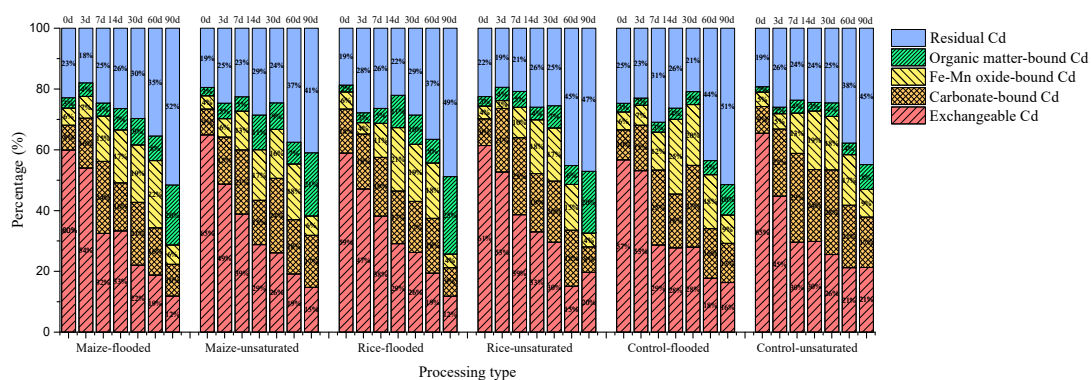


(b)

Figure S2. Temporal changes of cumulative decomposition of straws in mesh bags buried in the soils collected from sites A (a) and B (b) during laboratory incubation under different treatments.



(a)



(b)

Figure S3. Temporal changes of Cd fraction distribution in the soils collected from sites A (a) and B (b) during laboratory incubation under different treatments.

Table S1. Fluorescence indices of dissolved organic matter in the soils collected from site A at different times during laboratory incubation under different treatments (mean±standard deviation).

Incubation time (d)	Treatments	HIX	FI	BIX
0	Maize-flooded	0.81±0.03	1.19±0.16	0.62±0.04
	Maize-unsaturated	0.81±0.10	1.34±0.11	0.68±0.00
	Paddy-flooded	0.87±0.09	1.18±0.09	0.57±0.01
	Paddy-unsaturated	0.89±0.09	1.21±0.15	0.57±0.06
	Control-flooded	0.92±0.07	1.16±0.11	0.54±0.07
	Control-unsaturated	0.89±0.04	1.18±0.12	0.65±0.10
3	Maize-flooded	0.81±0.06	1.33±0.02	0.75±0.10
	Maize-unsaturated	0.86±0.03	1.32±0.20	0.69±0.09
	Paddy-flooded	0.87±0.07	1.21±0.17	0.63±0.06
	Paddy-unsaturated	0.85±0.07	1.23±0.08	0.65±0.08
	Control-flooded	0.93±0.07	1.16±0.03	0.57±0.08
	Control-unsaturated	0.91±0.06	1.19±0.17	0.58±0.04
7	Maize-flooded	0.70±0.01	1.31±0.15	0.86±0.01
	Maize-unsaturated	0.89±0.02	1.34±0.08	0.70±0.10
	Paddy-flooded	0.83±0.08	1.29±0.10	0.68±0.07
	Paddy-unsaturated	0.90±0.04	1.24±0.15	0.63±0.06
	Control-flooded	0.95±0.10	1.15±0.13	0.55±0.01
	Control-unsaturated	0.94±0.02	1.17±0.12	0.58±0.02
14	Maize-flooded	0.75±0.02	1.28±0.20	0.72±0.07
	Maize-unsaturated	0.90±0.02	1.24±0.07	0.63±0.01
	Paddy-flooded	0.80±0.07	1.26±0.16	0.65±0.09
	Paddy-unsaturated	0.90±0.10	1.23±0.13	0.62±0.08
	Control-flooded	0.92±0.07	1.13±0.10	0.52±0.06
	Control-unsaturated	0.94±0.06	1.18±0.05	0.54±0.10
30	Maize-flooded	0.84±0.10	1.33±0.18	0.68±0.05
	Maize-unsaturated	0.93±0.04	1.29±0.11	0.69±0.08
	Paddy-flooded	0.84±0.07	2.04±0.13	0.65±0.06
	Paddy-unsaturated	0.91±0.07	1.33±0.17	0.67±0.05
	Control-flooded	0.90±0.07	1.18±0.00	0.57±0.04
	Control-unsaturated	0.95±0.09	1.17±0.16	0.57±0.04
60	Maize-flooded	0.82±0.10	1.18±0.08	0.64±0.06
	Maize-unsaturated	0.88±0.08	1.22±0.02	0.66±0.09
	Paddy-flooded	0.84±0.02	1.18±0.01	0.59±0.05
	Paddy-unsaturated	0.88±0.02	1.15±0.02	0.53±0.07
	Control-flooded	0.83±0.07	1.16±0.10	0.63±0.09
	Control-unsaturated	0.83±0.06	1.15±0.17	0.55±0.00
90	Maize-flooded	0.91±0.08	1.21±0.02	0.61±0.01
	Maize-unsaturated	0.91±0.05	1.19±0.10	0.55±0.02

Paddy-flooded	0.91±0.06	1.19±0.13	0.59±0.01
Paddy-unsaturated	0.95±0.08	1.15±0.01	0.52±0.01
Control-flooded	0.93±0.03	1.18±0.19	0.58±0.01
Control-unsaturated	0.95±0.04	1.16±0.06	0.54±0.02

Table S2. Fluorescence indexes of dissolved organic matter in the soils collected from site B at different times during laboratory incubation under different treatments (mean±standard deviation).

Incubation Time (d)	Treatments	HIX	FI	BIX
0	Maize-flooded	0.86±0.07	1.17±0.03	0.61±0.04
	Maize-unsaturated	0.81±0.05	1.26±0.03	0.65±0.04
	Paddy-flooded	0.90±0.03	1.15±0.15	0.57±0.10
	Paddy-unsaturated	0.89±0.02	1.19±0.16	0.61±0.05
	Control-flooded	0.93±0.02	1.13±0.19	0.55±0.02
	Control-unsaturated	0.92±0.04	1.14±0.10	0.58±0.00
3	Maize-flooded	0.75±0.06	1.28±0.14	0.74±0.02
	Maize-unsaturated	0.87± 0.06	1.30±0.03	0.71±0.05
	Paddy-flooded	0.87±0.08	1.19±0.09	0.62±0.01
	Paddy-unsaturated	0.90±0.04	1.21±0.11	0.62±0.08
	Control-flooded	0.93±0.10	1.15±0.08	0.59±0.05
	Control-unsaturated	0.94±0.06	1.19±0.16	0.60±0.06
7	Maize-flooded	0.66±0.02	1.30±0.06	0.82±0.08
	Maize-unsaturated	0.89±0.04	1.27±0.18	0.68±0.02
	Paddy-flooded	0.81±0.08	1.25±0.14	0.73±0.04
	Paddy-unsaturated	0.89±0.07	1.19±0.01	0.61±0.09
	Control-flooded	0.94±0.05	1.15±0.00	0.58±0.04
	Control-unsaturated	0.94±0.04	1.17±0.02	0.60±0.06
14	Maize-flooded	0.83±0.03	1.17±0.12	0.60±0.06
	Maize-unsaturated	0.88±0.03	1.22±0.13	0.65±0.03
	Paddy-flooded	0.86±0.02	1.34±0.19	0.73±0.09
	Paddy-unsaturated	0.90± 0.01	1.15±0.02	0.61±0.08
	Control-flooded	0.92±0.09	1.16±0.19	0.58±0.03
	Control-unsaturated	0.94±0.10	1.17±0.17	0.59±0.04
30	Maize-flooded	0.85±0.03	1.20±0.02	0.64±0.04
	Maize-unsaturated	0.91±0.07	1.27±0.20	0.72±0.08
	Paddy-flooded	0.89±0.09	1.19±0.11	0.64±0.07
	Paddy-unsaturated	0.93±0.06	1.18±0.14	0.61±0.01
	Control-flooded	0.91±0.08	1.16±0.16	0.58±0.04
	Control-unsaturated	0.94±0.07	1.19±0.06	0.89±0.05
60	Maize-flooded	0.86±0.10	1.19±0.08	0.66±0.08
	Maize-unsaturated	0.92±0.06	1.23±0.11	0.69±0.08
	Paddy-flooded	0.87±0.04	1.12±0.15	0.58±0.09
	Paddy-unsaturated	0.93±0.05	1.20±0.07	0.60±0.09
	Control-flooded	0.93±0.06	1.10±0.13	0.59±0.03
	Control-unsaturated	0.86±0.02	1.14±0.13	0.56±0.08
90	Maize-flooded	0.91±0.10	1.18±0.04	0.62±0.07
	Maize-unsaturated	0.94±0.05	1.15±0.10	0.54±0.03
	Paddy-flooded	0.92±0.05	1.18±0.15	0.57±0.04

Paddy-unsaturated	0.94±0.07	1.15±0.13	0.55±0.06
Control-flooded	0.94±0.08	1.19±0.12	0.58±0.01
Control-unsaturated	0.94±0.05	1.16±0.10	0.55±0.04
