

**Table S5.** The physical and chemical properties of topsoil (0-20 cm) under different fertilization measures before and after crop harvest.

	Treatments	pH value	Bulk density (g cm <sup>-1</sup> )	SOC (g kg <sup>-1</sup> )	Total N (g kg <sup>-1</sup> )	NH <sub>4</sub> <sup>+</sup> -N (mg kg <sup>-1</sup> )	NO <sub>3</sub> <sup>-</sup> -N (mg kg <sup>-1</sup> )	Olsen-P (mg kg <sup>-1</sup> )	Available K (mg kg <sup>-1</sup> )	MBC (mg kg <sup>-1</sup> )	MBN (mg kg <sup>-1</sup> )
Before crop harvest	NoF	6.08±0.012 c	1.41±0.006 a	24.5±0.289 c	2.15±0.0116 d	63.3±1.15 a	16.4±0.269 d	62.4±0.58 d	275±10.8 c	283±5.8 b	15.2±0.53 d
	CF	5.68±0.014 d	1.40±0.007 a	27.2±0.297 b	2.25±0.0157 c	66.4±1.23 a	20.9±0.231 c	98.5±1.05 c	258±12.3 c	295±7.6 b	21.3±0.58 c
	CF+DM	6.74±0.015 b	1.27±0.006 b	31.2±0.314 a	2.85±0.0142 b	63.6±1.19 a	30.1±0.217 b	131.3±1.42 b	409±11.5 b	335±10.7 a	30.6±1.09 b
	CF+2DM	7.05±0.011 a	1.28±0.005 b	32.4±0.326 a	3.50±0.0134 a	62.9±1.26 a	36.3±0.199 a	196.5±1.97 a	575±13.4 a	323±11.3 a	37.9±1.17 a
After crop harvest	NoF	6.11±0.010 c	1.39±0.008 a	25.0±0.318 c	2.17±0.0175 d	65.2±1.31 a	16.7±0.277 d	67.8±1.15 d	287±10.5 c	308±9.2 b	15.9±0.64 d
	CF	5.75±0.009 d	1.37±0.006 a	27.8±0.376 b	2.28±0.0183 c	67.9±1.18 a	21.2±0.312 c	103.4±1.73 c	269±14.2 c	310±10.1 b	21.8±0.71 c
	CF+DM	6.92±0.012 b	1.21±0.007 b	32.7±0.260 a	3.02±0.0206 b	65.8±1.22 a	32.4±0.305 b	159.6±2.89 b	441±13.1 b	370±11.8 a	36.7±1.04 b
	CF+2DM	7.16±0.016 a	1.22±0.004 b	33.9±0.321 a	3.68±0.0289 a	65.1±1.13 a	38.9±0.346 a	228.7±4.62 a	605±15.5 a	353±14.2 a	44.5±1.22 a
<i>P</i> value (Significant difference)	NoF	0.503 ns	0.288 ns	0.276 ns	0.293 ns	0.309 ns	0.503 ns	0.256 ns	0.122 ns	0.086 ns	0.162 ns
	CF	0.162 ns	0.140 ns	0.216 ns	0.143 ns	0.410 ns	0.518 ns	0.296 ns	0.131 ns	0.276 ns	0.284 ns
	CF+DM	<0.001 **	0.002 **	0.017 *	<0.001 **	0.249 ns	0.003 **	0.001 **	0.122 ns	0.013 *	0.020 *
	CF+2DM	0.003 **	0.002 **	0.026 *	0.012 *	0.249 ns	0.004 **	0.004 **	0.140 ns	0.021*	0.016 *

Note: Different lowercase letters exhibit significant differences among the different treatment for each crop growth stage at the  $P < 0.05$  level via Tukey's HSD test. \* and \*\* indicate significant differences between before and after crop harvest with the same treatment at  $P < 0.05$  and  $P < 0.01$  levels by independent-samples T test, respectively. ns represents no significant difference between before and after crop harvest with the same treatment ( $P > 0.05$ ). MBC and MBN indicate microbial biomass carbon and nitrogen, respectively.