

Supplementary Information

Impact of carbon inputs on soil carbon fractionation, sequestration and biological responses under major nutrient management practices for rice-wheat cropping systems

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22 Table S1. Fertilizer nutrients and organic inputs under different nutrient management systems.

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Nutrient management	Crop cycle			Fertilizer/ organic inputs			
				Rice (at transplanting)		Wheat (at sowing)	
	May to June	July to Oct	Nov to Apr	Inorganic Fertilizer (N: P: K) kg ha ⁻¹	Organic	Inorganic Fertilizer (N: P: K: Zn) kg ha ⁻¹	Organic
O	Fallow	Rice	Wheat	-	-	-	-
F	Fallow	Rice	Wheat	180: 26: 42	-	180: 26: 42: 7	-
LE	Opportunity legume crop (<i>Vigna radiata</i>)	Rice	Wheat	100: 16: 28	Legume crop biomass	100: 16: 28: 0	-
GM	Green manure crop (<i>Sesbania aculeata</i>)	Rice	Wheat	100: 16: 28	Green manure biomass	100: 16: 28: 0	-
FYM	Fallow	Rice	Wheat	100: 16: 28	Farmyard manure (FYM)	100: 16: 28: 0	-
WS	Fallow	Rice	Wheat	100: 16: 28	Wheat stubble	100: 16: 28: 0	-
RS	Fallow	Rice	Wheat	100: 16: 28	-	100: 16: 28: 0	Rice stubble

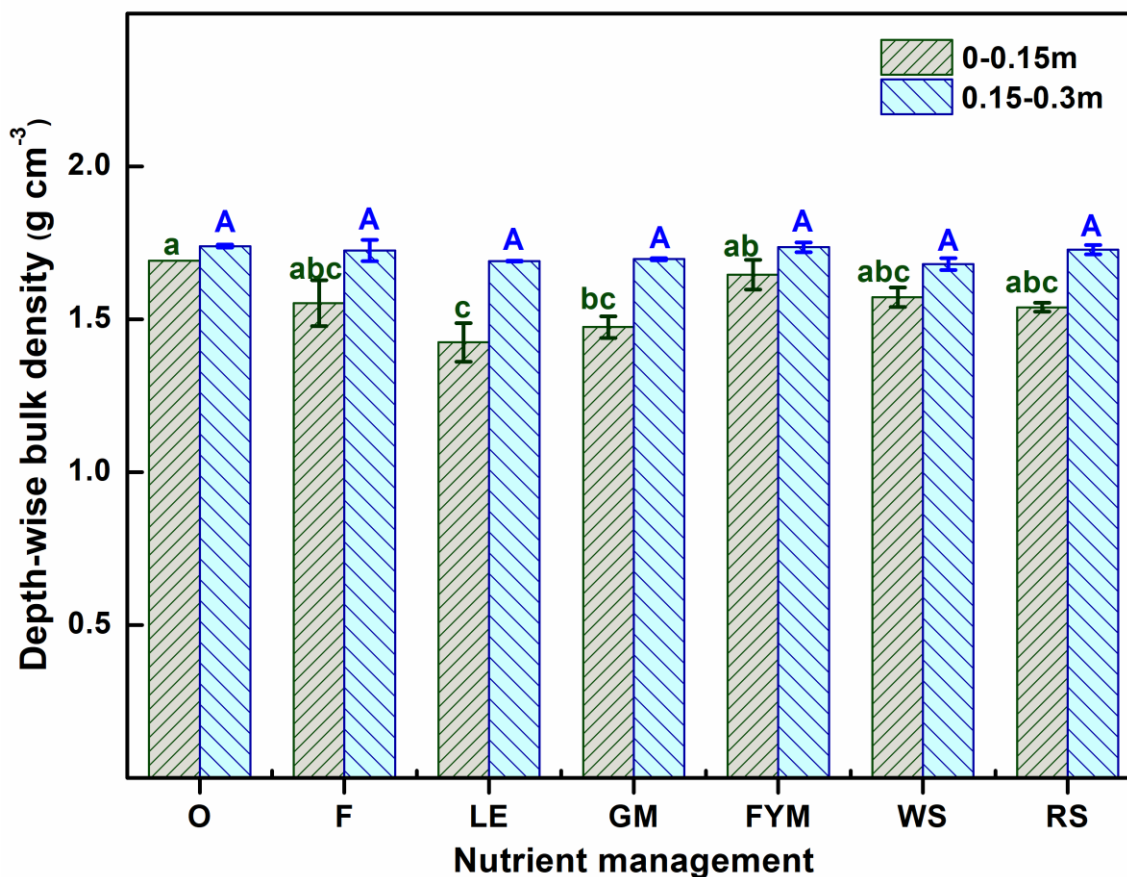
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26 Table S2. Carbon and nitrogen concentrations of different materials used as organic amendments
 27 under different nutrient management.

Management	Organic amendment	Nitrogen concentration (%)	Carbon Concentration (%)	C:N
LE	Green gram (<i>Vigna radiata</i>) biomass	1.71±0.02	47.78±1.07	27.95±0.77
GM	Green manure (<i>Sesbania esculenta</i>) biomass	2.65±0.02	42.32±1.13	15.99±0.32
FYM	Farmyard manure	0.56±0.04	31.36±0.92	56.53±4.36
WS	Wheat straw	0.27±0.01	41.90±0.55	157.78±7.77
RS	Rice straw	0.46±0.01	42.42±0.33	93.10±3.48

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 32 Fig. S1: Soil bulk density at different depths under different nutrient management after 10 years
 33 of initiation. O= no fertilizer, F=100% inorganic fertilizers, LE= opportunity legume crop (*Vigna*
 34 *radiata*) biomass incorporation, GM=green manuring, FYM=farmyard manure, WS= 30 cm
 35 wheat stubble retention and soil incorporation, RS= rice stubble retention and soil incorporation.
 36 Error bars denote ± 1 SE. Treatments with same letters are not significantly different at $p < 0.05$.