

Contributions of wheat and maize residues to soil organic carbon under long-term rotation in north China

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Supplementary Table and Figure

Table S1 Analysis of variance for $\delta^{13}\text{C}$ value of SOC

| Source of variation | Degree of freedom | Sum of squares | Mean of squares | F value | P value |
|---------------------|-------------------|----------------|-----------------|---------|---------|
| Site | 2 | 5.35 | 2.68 | 13.64 | <0.001 |
| Year | 1 | 1.63 | 1.63 | 8.29 | 0.005 |
| Treatment | 2 | 1.07 | 0.53 | 2.73 | 0.072 |
| Depth | 4 | 4.36 | 1.09 | 5.55 | < 0.001 |
| Site*treatment | 4 | 6.10 | 1.53 | 7.78 | < 0.001 |
| Site*depth | 8 | 3.20 | 0.40 | 2.04 | 0.055 |
| Residual | 68 | 13.34 | 0.20 | | |
| Total | 89 | 35.05 | | | |

Table S2 Amounts of nitrogen, phosphorus, and potassium applied for each crop
(after Zhao *et al.* ⁴⁰)

| Treatments | Urumqi | | Yangling | | Zhengzhou | |
|--|---------------------|-------|---------------------|-------|---------------------|---------------------|
| | Wheat/maize | Maize | Wheat | Maize | Wheat | |
| <u>Nitrogen</u> / kg N ha ⁻¹ yr ⁻¹ | | | | | | |
| CK | 0 | 0 | 0 | 0 | 0 | 0 |
| NPK | 242 | 188 | 165 | 188 | 165 | 165 |
| NPKS | 217+29 ^a | 188 | 165+43 ^a | 188 | 123+42 ^a | 123+42 ^a |
| <u>Phosphorus</u> / kg P ha ⁻¹ yr ⁻¹ | | | | | | |
| CK | 0 | 0 | 0 | 0 | 0 | 0 |
| NPK | 60 | 25 | 58 | 41 | 36 | 36 |
| NPKS | 51+5 ^a | 25 | 58+4 ^a | 41 | 36+8 ^a | 36+8 ^a |
| <u>Potassium</u> / kg K ha ⁻¹ yr ⁻¹ | | | | | | |
| CK | 0 | 0 | 0 | 0 | 0 | 0 |
| NPK | 47 | 78 | 69 | 78 | 68 | 68 |
| NPKS | 39+54 ^a | 78 | 69+57 ^a | 78 | 68+86 ^a | 68+86 ^a |

^a The amount was from crop straw.

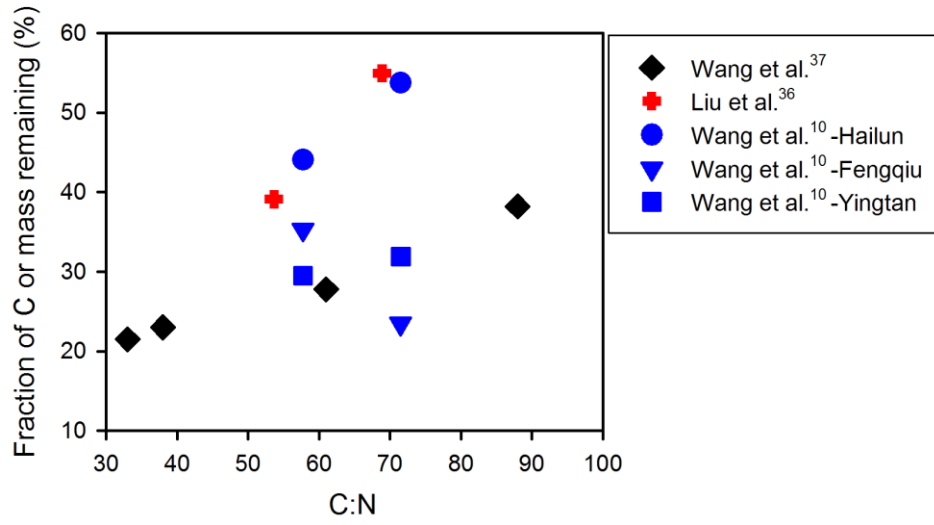


Figure S1 Relationships between the initial C:N for wheat and maize residues and the fraction of carbon or dry mass remaining after one year of field incubation