

Table S1. Fertilization effects on relative peak area (%) of characteristic peaks observed in the FTIR analysis of bulk Mollisols.

| Soil depths | Treatments | Alcohol and phenol -OH 3623 cm ⁻¹ | Aliphatic -CH- 2920 cm ⁻¹ | Aromatic C=C 1620 cm ⁻¹ | Carbohydrate C-O 1030 cm ⁻¹ | 1620/2920 |
|-------------|------------|--|--|--|--|-------------|
| 0-10 cm | NoF | 11.24±0.29 a | 2.07±0.06 b | 4.19±0.05 c | 82.50±0.58 a | 2.02±0.03 b |
| | CF | 10.98±0.27 a | 2.14±0.07 ab | 4.39±0.06 c | 82.49±0.56 a | 2.05±0.03 b |
| | CF+DM | 10.18±0.31 a | 2.25±0.07 ab | 4.84±0.09 b | 82.73±0.51 a | 2.15±0.04 a |
| | CF+2DM | 10.05±0.30 a | 2.38±0.08 a | 5.14±0.11 a | 82.43±0.52 a | 2.16±0.04 a |
| 10-20 cm | NoF | 11.15±0.34 a | 2.15±0.07 a | 4.25±0.07 b | 82.45±0.55 a | 1.98±0.02 b |
| | CF | 10.78±0.28 a | 2.23±0.08 a | 4.42±0.07 b | 82.57±0.54 a | 1.98±0.03 b |
| | CF+DM | 10.04±0.22 a | 2.31±0.08 a | 5.07±0.08 a | 82.58±0.57 a | 2.19±0.03 a |
| | CF+2DM | 9.96±0.21 a | 2.37±0.07 a | 5.26±0.09 a | 82.41±0.52 a | 2.22±0.04 a |
| 20-30 cm | NoF | 11.09±0.26 a | 2.29±0.07 a | 4.29±0.06 b | 82.33±0.53 a | 1.87±0.02 b |
| | CF | 10.52±0.25 a | 2.36±0.06 a | 4.48±0.06 b | 82.64±0.59 a | 1.90±0.02 b |
| | CF+DM | 9.98±0.04 a | 2.42±0.08 a | 5.19±0.08 a | 82.41±0.61 a | 2.14±0.03 a |
| | CF+2DM | 9.85±0.23 a | 2.49±0.09 a | 5.37±0.09 a | 82.29±0.62a | 2.16±0.03 a |

Note: Different lowercase letters within the same column represent significant differences for each soil layer ($P < 0.05$, Tukey's HSD test).