Supplementary material for

**Combined effects of straw-derived biochar** **and bio-based polymer-coated urea on nitrogen use efficiency and cotton yield**

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**Supplementary** Table 1 Source of variance of soil NO3--N and NH4+-N contents

**Supplementary** Figure 1 Temperature and precipitation during the incubation and cotton growth period

**Supplementary** Figure 2 Structural characterizations of BPCU (A) and biochar (B) by FTIR

**Supplementary** Figure 3 Biochar N2 adsorption/ desorption isotherms and pore size distribution

**Supplementary** Table 1 Source of variance of soil NO3--N and NH4+-N contents

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Stage | Seeding stage | First bloom stage | Full bolling stage | Initial boll opening stage | Maturity stage |
| NO3--N contents |
| C | <0.0001 | 0.0052 | 0.0005 | 0.0014 | 0.0121 |
| N | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Interaction | 0.0414 | 0.8536 | 0.3184 | 0.2049 | 0.0184 |
| NH4+-N contents |
| C | 0.0031 | <0.0001 | 0.4901 | 0.3110 | 0.0515 |
| N | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0008 |
| Interaction | 0.4972 | 0.1636 | 0.5058 | 0.9745 | 0.7555 |

Supplementary Figure 1 Temperature during the incubation and cotton growth period.

Supplementary Figure 2 Structural characterizations of BPCU (A) and biochar (B) by FTIR.

  

Supplementary Figure 3 Biochar N2 adsorption/ desorption isotherms and pore size distribution

 