Supplementary Materials

A Closed-Loop Strategy for Composting: Using Biochar and Fulvic Acid Derived to Mitigate Ammonia Emission and Enhance Humification

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Text S1 Extraction process of HSs, fulvic acid and humic acid

To extract HSs, 2.50 g of air-dried compost was mixed with 50 mL of an alkaline extractant (0.1M NaOH and 0.1M $Na_4P_2O_7 \cdot 10H_2O$ in a 1:1 volume ratio). The mixture was shaken at 25°C and 180 rpm for 16 hours. After shaking, the suspension was transferred to a centrifuge tube and centrifuged at 6,000 rpm for 10 minutes to separate the supernatant. This extraction process was repeated three times, with all supernatants combined and filtered to obtain the HSs extract. The pH of the extract was then adjusted to 1.0 by slowly adding 6M HCl solution, and the mixture was left undisturbed overnight. The following day, after centrifugation, the supernatant contained fulvic acid, while the precipitate contained humic acid. The precipitate was then washed with 0.01M HCl until the filtrate became colorless.

Fig.S1 Principal components analysis results for dissolved fraction parameters of compost with the NH_3 volatilization, GI and compost quality.