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Abstract

In this article, the changes in carbon, nitrogen components, and humic substances during organic-inorganic aerobic co-composting, with adding biochar as an additive or not, were studied. Results showed that adding a certain amount of inorganic fertilizers had no adverse effects on the compost fermentation process. Biochar enhanced the temperature, pH, oxygen content in the compost piles and ultimately hastened the fermentation process. Biochar contributed to the decomposition of hemicellulose, cellulose, lignin and promoted compost humification. Adding biochar increased the contents of acid hydrolysis nitrogen, amino acid nitrogen, amino sugar nitrogen, unidentified organic nitrogen and decreased the content of ammonia organic nitrogen thus improved nitrogen transformation and reduced nitrogen loss. The