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**Effects of C/N ratio and earthworms on greenhouse gas emissions during
vermicomposting of sewage sludge**

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Abstract

The emissions of greenhouse gases (CO₂, CH₄, and N₂O) during bio-stabilization of sewage sludge under different C/N ratios with/without *Eisenia fetida* were evaluated in this study. Vermicomposting led to the more significant reductions of pH, TOC and C/N ratio compared to the control treatment without earthworms. C/N ratio had a significant effect on the emission of N₂O, whereas its influences on CO₂ or CH₄ emission were not obvious. Earthworms reduced the CH₄ emission greatly, although the CO₂ emission was not affected by earthworms. Furthermore, a higher emission of N₂O was observed in vermicomposting compared to the control. Both the C/N ratios and earthworms exerted statistically significant effects on the total GHG emission.

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