

Accepted Manuscript

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PII: S0960-8524(18)31275-6
DOI: <https://doi.org/10.1016/j.biortech.2018.09.023>
Reference: BITE 20439

To appear in: *Bioresource Technology*

Received Date: 16 July 2018
Revised Date: 3 September 2018
Accepted Date: 4 September 2018

Please cite this article as: Yuan, J., Li, Y., Chen, S., Li, D., Tang, H., Chadwick, D., Li, S., Li, W., Li, G., Effects of phosphogypsum, superphosphate, and dicyandiamide on gaseous emission and compost quality during sewage sludge composting, *Bioresource Technology* (2018), doi: <https://doi.org/10.1016/j.biortech.2018.09.023>

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Effects of phosphogypsum, superphosphate, and dicyandiamide on gaseous emission and compost quality during sewage sludge composting

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Abstract: This study investigated the effects of phosphogypsum, superphosphate, and dicyandiamide on gaseous emission and compost quality during sewage sludge composting. Results showed that phosphogypsum reduced ammonia (NH₃) and methane (CH₄) emissions but increased nitrous oxide (N₂O) emission. Superphosphate simultaneously reduced NH₃, N₂O and CH₄ emissions. Dicyandiamide markedly reduced N₂O emission during composting. Combination of phosphogypsum and dicyandiamide reduced CH₄ and N₂O emissions by 75.6% and 86.4%, while NH₃ emission was increased by 22.0%. Combination of superphosphate and dicyandiamide reduced NH₃, CH₄ and N₂O emissions by 12.3%, 81.0% and 88.2%, respectively. More

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