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**Impact of vermiculite on ammonia emissions and organic matter decomposition of
food waste during composting**

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Abstract

This study investigated the effects of adding vermiculite to the food waste composting process. Four treatments with varying vermiculite percent compositions, 0%, 5%, 10% and 15% (w/w, wet weight of food waste basis) mixed with initial food waste were designed and then composted for 42 days. Results show that adding vermiculite prolongs the thermophilic phase, speeds up the organic matter loss, reduces the NH₃ emissions and electrical conductivity values. Compared to the control, the amount of nitrogen loss through NH₃ emissions in the treatments of 5%, 10% and 15% vermiculite decreased by 9.89%, 26.39% and 18.65%, respectively. Finally this work suggests that vermiculite is a suitable additive for food waste composting, especially when the makeup of the compost is 10% vermiculite.

Keywords: Compost; Vermiculite; Food waste; Ammonia emissions; Decomposition

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