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Effect of tricarboxylic acid cycle regulator on carbon retention and organic component transformation during food waste composting

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Abstract: Composting is an environment friendly method to recycling organic waste. However, with the increasing concern about greenhouse gases generated in global atmosphere, it is significant to reduce the emission of carbon dioxide (CO_2). This study analyzes tricarboxylic acid (TCA) cycle regulators on the effect of reducing CO_2 emission, and the relationship among organic component (OC) degradation and transformation and microorganism during composting. The results showed that adding adenosine tri-phosphate (ATP) and nicotinamide adenine dinucleotide (NADH) could enhance the transformation of OC and increase the diversity of microorganism community. Malonic acid (MA) as a competitive inhibitor could decrease the emission of CO_2 by inhibiting the TCA cycle. A structural equation model was established to