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

Qian Lu^a, Yue Zhao^a, Xintong Gao^a, Junqiu Wu^a, Haixuan Zhou^a, Pengfei Tang^b,
Qingbin Wei^b, Zimin Wei^{a*}

a. College of Life Science, Northeast Agricultural University, Harbin 150030, China

b. Environmental Monitoring Center of Heilongjiang Province, Harbin 150056, China

*Corresponding author Address: College of Life Science, Northeast Agricultural University, Harbin 150030, China.

Tel/Fax: +86 451 55190413

E-mail address: weizimin@neau.edu.cn

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 (CO₂). This study analyzes tricarboxylic acid (TCA) cycle regulators on the effect of reducing CO₂ 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 CO₂ by inhibiting the TCA cycle. A structural equation model was established to

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