

## ABSTRACT

**RESEARCH PAPER:** Vermicomposting effects on food waste and soil quality

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Vermicomposting uses earthworms to facilitate food waste decomposition to yield organic fertilizer. Vermicomposting yields high quality fertilizer with water-soluble nutrients that can reduce the need for synthetic fertilizers and pesticides which have adverse environmental effects. To better quantify vermicomposting benefits, more research is needed on the effect of vermicomposting on common food waste scraps. Our objective was to quantify changes in food waste and soil quality with vermicomposting using locally relevant earthworm species. To meet this objective, a mesocosm experiment measured the effect of earthworms on decomposition of apple peels in soil. We hypothesized that earthworms would increase the decomposition rate due to earthworm burrowing activity which aerates and redistributes soil nutrients and microbes. Our research suggests *Lumbricus terrestris* increased decomposition rates of apple peels between weeks two and three during a four-week incubation period. Data also suggest *Lumbricus terrestris* increases moisture content of surface organic wastes.