

Microbial Content of Actively Aerated Compost Tea after Variations of Ingredients or Procedures

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Abstract

Compost tea describes a procedure where compost is mixed with water. The mixture may be left to stand with minimal disturbance (also called “compost extract” or “steepage”) or actively supplied with oxygen by an aquarium pump to stimulate population growth of aerobic microbes. This project examined actively aerated compost tea. Over a three-year period, 25 experiments were conducted where a standard recipe was compared to variations of ingredients or procedures. Identification and count of microbial content was done by direct microscopy. The “standard recipe” was 15 L of tap water (pH 7.0), 485 g of composted yard waste, 285 g of commercial worm castings, 30 ml of humic extract, 30 ml of commercial kelp *Ascophyllum nodosum* and 30 ml of fish fertilizer. The procedure was to aerate water for 60 min in a commercial brewer, add ingredients which are removed after five hours, then maintain brewing for another 17 hours at room temperature of 20°C. Results indicate that longer brewing time increased protozoa activity; addition of humic acid stimulated fungi activity; addition of kelp stimulated protozoa activity; addition of fish fertilizer stimulated fungi activity and increased nutrient content; use of worm castings resulted in increased fungi content; and mixing protein food with compost ahead of brewing resulted in higher protozoa activity. However, replicated experiments were difficult as the microbial content changes continuously over time and it was not possible to accurately measure a large number of samples in a short period.