

Commercial Vermicomposting

Vermicomposting is increasingly being adopted by businesses, institutions, farms, and municipalities for managing organic waste. Organic materials can be vermicomposted on-site or transported to a centralized facility.

Businesses that generate food waste include restaurants, grocery stores, hotels, food processors, nursing homes, wholesale food outlets and farmers markets, shopping malls, resorts, and offices with dining facilities. U.S. businesses generate 25 million tons food scraps, unrecyclable paper, and cardboard annually (EPA 1999). At least 74% of restaurant waste is food and paper (EPA 1999).

Institutions generating food waste include hospitals, schools, universities, prisons, military bases, long-term care facilities, and government centers. The U.S. EPA estimated in 2006 that 35-45% of the waste generated in the United States was by schools, businesses and institutions.

Farms are vermicomposting manure and crop residuals. Farmers are choosing to vermicompost for several reasons. Some need an environmentally-beneficial alternative for manure management. Others want to produce vermicompost to increase their crop yields and reduce their use of fertilizers, herbicides and pesticides. And some farmers choose vermicomposting to increase their income from sales of worms or vermicompost.

Municipalities can vermicompost food residuals, yard debris, or sewage sludge. They can operate vermicompost facilities on their own or contract with a private entity. For example, a private business currently has contracts with two municipalities in Pennsylvania to vermicompost their sewage sludge.

Organic waste causes global warming. Landfills are the largest human-related source of methane in the U.S. (34% of all methane emissions). Food residuals are the second biggest source of methane in landfills.

Feedstock throughput in vermiculture is based roughly on how many worms you have. *Eisenia fetida* will consume 50% to 100% of their body weight per day. For planning purposes, assume the worms will eat half of their body weight daily. The number of worms is measured in pounds. Approximately 1,000 *Eisenia fetida* are in one pound. If they are all adults, there may be 500 worms; if they are all juveniles there could be 2,000 worms). Thus, 50 pounds of worms will possibly consume 25 pounds of food daily.

Worms should be fed according to their needs. After feeding worms, you should not feed them again until almost all of their food is gone. Then apply food in a thin layer about an inch thick. In large-scale operations, worms are often fed every other day if feedstock remains the day after they've been fed. Check on the worms daily because sometimes they will eat all of their food in one day, and other times it will take them two days or more to consume the feedstock.

For more information about commercial vermicomposting, see Raising Earthworms Successfully at <http://www.bae.ncsu.edu/topic/vermicomposting/pubs/earthworms.pdf> and others on my website.