

# Community Composting Best Management Practices

Words in **bold and italics** are defined in the glossary in Appendix A.

## BEFORE YOU BEGIN

- Do your homework
  - Get trained in the art and science of **composting**.
  - Map out a realistic plan: what will you **compost**, who's on your team, what's your end goal?
  - Be aware of existing composting rules and regulations.
- Choose your location and develop a site plan
  - Get to know your potential neighbors.
  - Observe the site. Avoid standing water on the site, even after a rain event.
  - Map out the entire composting process and where everything will be stored.
  - Secure a water source for adding to composting piles (as needed) and cleaning up.
- Choose an animal-resistant composting system:
  - Cover your active composting piles, particularly open windrows, with a **biocover** or other **semipermeable cover**.
  - Use concrete pads or fully enclosed systems for active composting piles.
- Identify site operators and managers that are trained in BMPs.
  - What will be your management plan and schedule?

## GETTING STARTED

- Create your recipe: two to three parts **browns** to one part **greens**.
- Avoid problem materials: dairy, meat, oils, fats, grease, diseased plants, aggressive grasses, and weeds.
- Secure **feedstocks**, tools, and composting process at all stages from weather, **pests**, and people.

- Secure a reliable source of browns, especially if processing food scraps, animal manures, and other highly putrescible materials.
- Focus on the flow of your site, avoid bottlenecks and clutter. People "smell with their eyes." Rats like places to hide.
- Proactively engage your neighbors! Put up informational signage.
- Start small and simple! Don't bite off more than you and your team can manage. Get a handle on your process, then slowly expand.



▲ Informational signage guides participants on washing buckets used to store food scraps at the NYC Compost Project hosted by Earth Matter NY. Source: Institute for Local Self-Reliance.

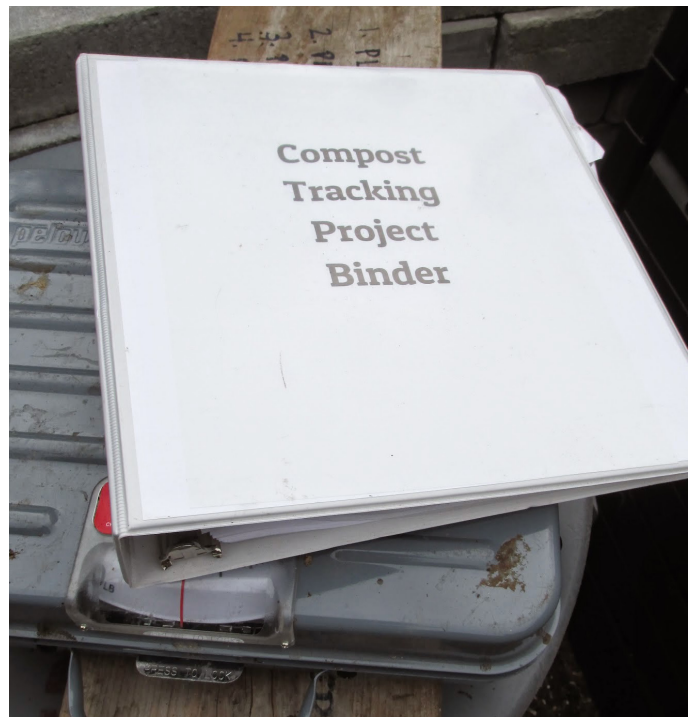
## AVOIDING RODENTS

- Place your composting system as far away from any dumpsters or trash cans as possible, or at least make sure that trash cans are well sealed.
- Maintain a buffer of at least 2 feet between your composting system and exterior walls, fences, shrubs, or any other potential hiding spaces for rodents and other animals. A minimum 3-foot buffer is needed around sidewalks, building foundations, concrete slabs, and footings to prevent burrowing. Keep this buffer area clear at all times.
- Set up your system, including the clutter-free buffer zone, on a paved pad. If using an enclosed system, a gravel pad can also be used. A gravel pad should be at least 6 inches deep and use 1-inch diameter or larger stones. If on a paved surface, add an additional strip of gravel 2 feet wide around its edge.

- Rats do not like to feel exposed, so don't give them places to hide! Avoid clutter, piles of materials, tall grasses, and low shrubs around your composting system. If piles of materials are unavoidable, make sure to move them around periodically to prevent housing any unwanted residents.

### CONSIDERATIONS FOR SITES COMPOSTING ANIMAL MANURES AND FOOD SCRAPS FROM MORE THAN ONE HOUSEHOLD

- For sites that are composting animal manures and food scraps from more than one household – particularly those creating compost for use in food production – active management, **thermophilic** “hot” conditions, and meeting **Process to Further Reduce Pathogens (PFRP)** guidelines are recommended.
- Achieve thermophilic conditions by:
  - using an appropriate recipe with sufficient porosity,
  - providing piles with sufficient moisture (but not too much),
  - mixing ingredients thoroughly,
  - building a pile of sufficient size,
  - monitoring temperatures,
  - turning compost piles as temperatures indicate.
- Meet PFRP guidelines:
  - For aerated open piles, bin and in-vessel systems with good insulation (in a vessel or covered with a finished or clean material): active piles should reach 55°C (131°F) or higher for 3 consecutive days.
  - For passively aerated or turned open piles: active piles should reach 55°C (131°F) or higher for at least 15 days (can be nonconsecutive), and receive a minimum of five turnings with at least 3 days between turnings.
- Do not store food scraps, which are highly **putrescible**, onsite unless they have been **bokashi**-fermented. The fresher the food scraps, the better. If food scraps cannot be processed into the compost pile immediately, at minimum, add brown material to soak up liquids and prevent **anaerobic** conditions.
- Always have enough browns on site.



▲ The Prospect Heights Community Farm tracks management of the composting system and the pounds of food scraps being added. Source: Institute for Local Self-Reliance.

- Prevent water that comes in contact with animal manures, raw food scraps, or actively composting piles from entering streams or other bodies of water, or touching edible plants. Minimize **contact water** and filter through a meadow, berm, or filtration rain garden. Local rules may determine how this liquid needs to be managed.
- Use layers of material at the base of piles and to cap piles to maintain **aerobic** conditions, help manage odors, keep flies away, and contain fungal spores.
  - 6 inches of course browns, such as wood chips, make a good base.
  - Cap your pile with a semipermeable cover, or a biocover: at least 2 inches of finished (screened) compost, 6 inches of unscreened compost, or 12 inches of **overs** to prevent pest problems and avoid any nuisance smells.
- Be sure to build composting piles that are of sufficient size (at least 27 cubic feet) and stop adding material as you begin the PFRP process.
- If temperatures don't rise to a thermophilic range within a couple of days of building a pile of sufficient size, or if nuisance odors arise, troubleshoot immediately.

- During the active or thermophilic phase, observe your piles and turn regularly, driven by your observations. At a minimum, turn piles when the temperature peaks and starts to fall, or when temperatures surpass 160°F.
- If problems arise, be ready to cut off food scrap deliveries. These may include complaints from neighbors or regulators, rodent infestations, shortage of browns, or other unmanageable issues.

TABLE 4. IDEAL INITIAL PARAMETERS FOR THERMOPHILIC COMPOSTING

Characteristic	Ideal Range
Moisture (%)	50 - 60
C:N	25:1 - 40:1
Oxygen (%)	> 10
Temperature (°F)	120 - 155
Particle Size (inches)	1/8 - 2
Bulk Density (pounds/cubic yard)	800 - 1000
Pile Size (cubic yard)	> 1

Source: Adapted from the USCC Compost Operations Training Program (2015).

## MONITORING AND RECORDKEEPING

- Monitor for animal activity and take immediate action to make and keep your site inhospitable to pests.
- For sites composting animal manures and food scraps from more than one household – particularly those creating compost for use in food production – track temperatures, odors, and moisture levels.
- Use compost thermometers, the hand-squeeze test, and your nose to gauge and record temperatures, moisture content, and odor levels throughout the composting process. Allow these measurements to guide your management. This will help assure thermophilic composting conditions are achieved, and nuisance issues and unwanted attention are avoided.
- Record these measurements so you can re-create successful compost mixes, avoid problematic ones, and back up your project in case curious regulators or members of the public inquire.

## FINISHING AND TESTING

- **Cure** your compost, or allow the composting process to gradually come to a complete finish, in order

to produce a chemically stable finished product. Unfinished compost can damage plants.

- Allow a minimum of 4 weeks for curing; 2 to 4 months are preferable.
- Protect or monitor curing and finished compost piles from weather and pests. If employing an open pile system on a sloped site, make sure curing and finished compost piles are uphill of any active piles or raw feedstocks.
- Make sure there are no recognizable original feedstocks in the curing and finished compost. Overs such as tough woody materials and contaminants, like plastic and metal, can be screened out.
- Regularly test your compost quality, especially if you are producing compost for sale, creating compost for food production, or accepting materials that have the potential for pathogens (such as manures, meat, and large amounts of food scraps from off-site).

## MANAGING YOUR TEAM

- Avoid burnout! Make sure you have enough managers to allow people time off, particularly in volunteer-managed projects.
- Be realistic. Think about what your dependable labor force can handle. Your ability to enact BMPs should determine what and how much your site is composting.
- Set regular and consistent work days if engaging the community. Have someone responsible for this outreach.

## HEALTH AND SAFETY

- Identify all potential hazards present on your site and create basic operating procedures to manage them.
- Be prepared to act on participant safety concerns in a meaningful way as soon as possible.
- Inform participants about ***Aspergillus fumigatus***, a common fungal species found in soil, decomposing leaves, and compost that some people will be sensitive to.
- Wear gloves and wash your hands after removing gloves.
- Rinse composting tools after use and do not use for gardening.

- Protect those likely to be most sensitive. Involve participants and guardians where appropriate to discover anyone potentially susceptible: those with allergies, asthma, weakened immune systems, or who are infection prone.
- Have respirator masks (N95 mask recommended) available for use in dry, dusty conditions and to protect from bioaerosols, particularly for those who have asthma, other respiratory issues, or cystic fibrosis.
- Dispose of all exposed composting materials on site if active rodent burrowing or fresh urine or droppings are present as they may be infected with **Leptospirosis**, a bacterial disease. Take immediate action to make your site inhospitable to rodents. Contact pest management professionals if the problem cannot be remedied quickly.