

**PUTNAM VALLEY
CENTRAL SCHOOL DISTRICT
146 PEEKSKILL HOLLOW ROAD
PUTNAM VALLEY, NY 10579**

MS4PY9 STORMWATER PROGRAM

**FACT SHEET #4
NOVEMBER 2018**

**COMPOSTING FOR STORMWATER
MANAGEMENT**

**FOR MORE INFORMATION, CONTACT
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1. BACKYARD COMPOSTING

Composting is nature's way of recycling organic materials into the soil to promote plant growth. The billions of living organisms in healthy soil transform dead plants into vital nutrients for new plant growth. The basic needs of backyard composting consist of:

- **Space:** Select a dry, shady or partially shady spot, at least 3 feet wide by three feet deep by three feet high, where you can construct your compost pile
- **Pile:** You can start off with a pile constructed of chicken wire or snow fencing, or by nailing scrap wood together to make a four-sided box. A pile works great for leaves and grass clippings
- **Bin:** A bin is more suitable for food wastes. Closed-top bins include turning units, and bins with flip tops. Many communities will provide their residents free or discounted bins to encourage backyard composting
- **Brown Material:** Provides carbon and includes shredded paper, cardboard and dry yard waste, like dry leaves, small branches, twigs, straw, saw dust and used potting soil
- **Green Material:** Provides nitrogen and includes wet yard waste like fresh grass clippings, green leaves, and food scraps like vegetable and fruit peels, coffee grounds and tea bags
- **Mixing:** Add brown and green materials (30:1 ratio), making sure larger pieces are chopped or shredded and turn over

with a pitch fork to provide aeration, unless your bin has a turner

- **Ready for Use:** When the material at the bottom is dark and fluffy, your compost is ready

2. WHY BACKYARD COMPOSTING?

With a small investment in time, you can improve the health and appearance of your yard:

- **It's Earth Friendly:** Food scraps and yard waste make up 20-30% of the waste stream. Making compost keeps these materials out of the landfills, where they take up precious space and release runoff pollutants into our streams, as well as methane gas into the atmosphere
- **It Benefits Your Yard:** Compost improves soil structure and texture, increases the soil's ability to hold water and promotes healthy root development in plants
- **It Saves Money:** Adding compost to your yard eliminates the need to buy chemical fertilizers. Composting also cuts down on trash hauling costs
- **It is Easy:** You can start with just leaves and grass, and then work your way to towards composting food scraps

3. THE COMPOST BLANKET FOR CONSTRUCTION SITES

A compost blanket is a layer of loosely applied composted material placed on the soil in disturbed construction sites to reduce stormwater runoff and erosion. The material fills in small rills and voids to limit channelized flow, provides a more permeable surface to facilitate stormwater infiltration, and promotes revegetation at the construction site. Compost

blankets can be placed on any soil surface: flat, steep, rock or frozen. The blankets are most effective when placed on road embankments, and stream banks, where stormwater runoff can occur as sheet flow. Compost blankets should not be used in locations that receive concentrated flow or channelized flows as runoff or a point of source discharge.

4. THE COMPOST FILTER BERM FOR CONSTRUCTION SITES

The compost filter berm is a dyke of compost that is placed perpendicular to sheet flow runoff to control erosion in disturbed areas and retain sediment. Compost filter berm is trapezoidal in cross section and provides a three-dimensional filter that retains sediment and other pollutants such as metals, oils and grease, while allowing the cleaned water to flow through the berm. Compost filter berms are generally placed along the perimeter of a site, or at intervals along a slope, to capture and treat stormwater that runs off as sheet flow. A filter berm can also be used as a check dam in small drainage ditches. Filter berms can be vegetated or unvegetated. Vegetated filter berms are normally left in place and provide long-term filtration of stormwater as a post-construction BMP. Unvegetated berms are normally broken down once the construction is complete and the compost is spread around the site, as a soil amendment. A compost filter berm can be used in place of traditional sediment erosion control tools such a silt fence.

5. THE BENEFICIAL ASPECTS OF COMPOSTING

According to the EPA, the composting is a Best Management Practice, because:

- **Supports Vegetation Growth:** The compost blanket retains a large volume of water, which aids in vegetation and plant growth within the blanket
- **Suppresses Plant Diseases:** The incidence of plant diseases may be influenced by the level and type of organic matter and microorganisms present in the soil. Research has shown that increased population of certain microorganisms may suppress plant diseases such as blight and wilt
- **Reduces Erosion:** Acts as a cushion to absorb the impact of rainfall, which reduces erosion
- **Stimulates Soil Microbial Activity:** Soil microorganisms include bacteria, protozoa and fungi. They are not only found within the compost, but will also proliferate within the soil under a compost blanket. These microorganisms play an important role in organic matter decomposition, which leads to humus formation and nutrient availability. Some microorganisms also promote root activity, assisting plant roots in extracting nutrients from the soil
- **Removes Pollutants:** The compost blanket removes pollutants such as heavy metals, nitrogen, phosphorus, fuels, grease and oil from the stormwater runoff, hence improving downstream water quality
- **Improves Soil Structure:** In finely textured soils such as clay or clay loam,

the addition of compost will increase permeability, and reduce stormwater runoff and erosion. The humus in compost holds soil particles together, making them more resistant to erosion and improving the soil's ability to hold moisture

6. COMPOSTING PROBLEMS

Tips on composting problems include but are not limited to the following:

- **Stinky Monster:** If your compost pile is smelly, chances are your compost has an overabundance of anaerobic microbes. Stirring and turning your compost pile or bin to add oxygen for the aerobic microbes will usually put a stop to your problem
- **Center of Pile Dry:** Add water the next time you are aerating the pile
- **Keeping Your Compost Active in Winter:** Bacteria do not work well in freezing temperatures. Hence, insulate the pile with hay bales or move your bin into an area that receives direct sunlight
- **Pile Is Not Heating Up:** To keep your pile cooking you need to maintain a C:N ratio of 30 parts of carbon to 1 part of nitrogen. If you are running low on nitrogen, try adding fresh grass clippings, manure or blood meal
- **Ammonia Smell:** Too much nitrogen, add straw, saw dust or peanut shells to the pile and mix them in well

SOURCES: The information in this fact sheet was extracted from various EPA publications.