

How to Start and Improve Home Compost Systems in Massachusetts

International Compost Awareness Week

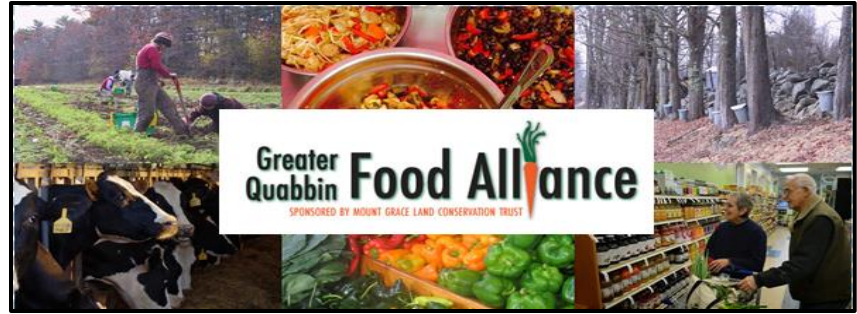
May 2-8, 2021



Food Waste Reduction & Composting Working Group

*Pictured:
Earth Machine Compost bin, left; New Age Composter, right
Both are sold in many MA municipalities.*

Welcome!



- Meeting guidelines:
 - We have everyone's audio muted automatically – please keep yours muted and your video off during the presentation. Thank you!
 - Q and A will be at the end, please put questions in the chat.
 - This meeting is being recorded and will be available to attendees after the event.
 - We will email links to the presentation slides and recording to attendees.

GQFA's Food Waste Reduction & Composting Working Group



Why compost?

Reduce *Trash* → landfills and incinerators.



Northampton Landfill, now closed.

- Does NOT become soil.
- <6 years capacity in MA landfills
- Expensive! \$\$\$\$\$\$\$\$

Community Eco Power >>

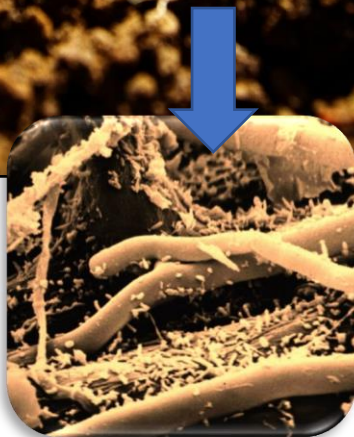
- Trash combustor in Spfld. MA
- At capacity at 400 tons/day
- Waste-to-Energy Facility



Why compost?

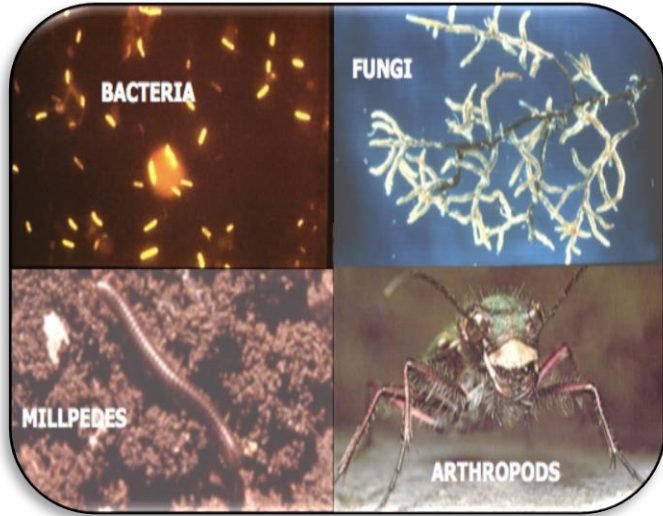
Adding compost to gardens BUILDS soil health.

- Inoculates soil with organic matter, and healthy doses of beneficial bacteria, fungi, nematodes, and micro-arthropods



Why compost?

Healthy soil GROWS healthy plants.



- Higher biological activity *improves soil structure*, helping root penetration
- Organic matter improves *water and nutrient retention* (lowers effort and cost)
- Compost *adds nutrients, minerals*

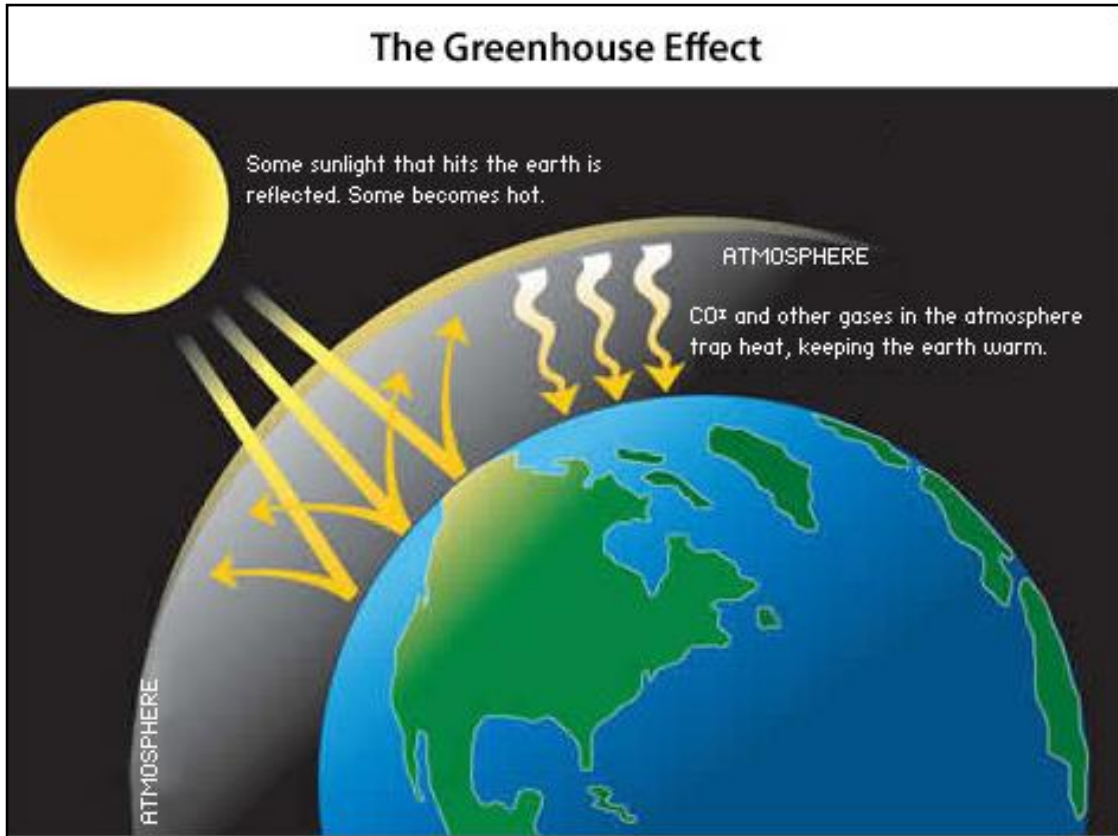
Compost = “Garden Gold”



Why compost?

Composting reduces greenhouse gas emissions

Climate Change is caused by greenhouse gases in earth's atmosphere.



Greenhouse Gases:

- CFCs
- Nitrous Oxide (NO₂)
- Methane (CH₄)
- Carbon Dioxide (CO₂)

↑
Increasing Global Warming Potential

Why compost?

*Composting helps slow **Climate Change***

Composting captures carbon from food and organic waste and fixes it in the soil



Why compost?

*Composting helps slow **Climate Change***

- Composting reduces inputs of organic matter to landfills, which reduces methane emissions
- When organically based materials (“organics”) such as food waste (and paper) decay in a landfill, **methane** is released.
- **Methane** is a greenhouse gas **23 times** more powerful than carbon dioxide.



Why doesn't *composting* release methane? Because mixing/aeration keeps oxygen part of the decomposition process.


There is minimal oxygen in a landfill.

Windrow turner at Martin's Farm "turns" (stirs) compost piles (windrows).



**Martin's Farm
accepts from 26
FC schools**

Plus, Markets,
Restaurants,
8 Municipal
Compost Programs



Compost thermometer
in windrow shows 140°

Composting Saves Money

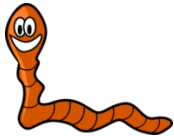
- Save your money by reducing household trash: use fewer “Pay As You Throw” town trash bags or stickers.
- Save money for your town: trash disposal is expensive and measured by weight. Food waste is heavy.



- Save your money for your garden and yard: reduce purchases of bagged topsoil, fertilizers, garden soil

Compost Basics: 3 “sizes” of composting

- **Small: Worm bin**
Red wiggler worms



- Yes: raw vegs, fruits
- No: meat, cheese, oil, peanut butter



- **Medium: Backyard / on-site composting**

- Yes: vegs, fruit, bread
- Yes: leaves, garden
- No: meat, cheese, oils, peanut butter



Large: Commercial Composting accepts:

Food: All types, including meat, bones, cheese

Paper: napkins, paper towels, paper take-out containers, egg cartons, waxed cardboard

Other: BPI-certified compostable “plastics”, wooden utensils, etc.
Up to 89% of a school lunch is compostable!



**Windrows at
Bear Path Farm,
Whately, MA**

YOU can participate in this type of
composting in your school or business:
www.recyclingworksma.org



Compost Containers at 11 Transfer Stations in Franklin County

- Accepts ALL food (no liquids)
- Paper towels, paper napkins, soiled pizza boxes
- Compostable Plastics (BPI)
- Wooden utensils, chopsticks, etc.
- Goes to a local compost farm or facility:
 - Martin's Farm (8)
 - Clear View Composting (3)



Home Composting: *How does it work?*

Any scale compost system needs:

- **Water:** material in bin should be as damp as a wrung out sponge. Add water if not, and when building pile. Add sparingly in winter.



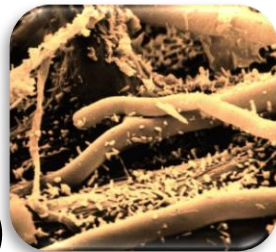
- **Air/ Oxygen:** mix/stir occasionally—more often means faster finished product



- **“Brown” materials:** Carbon Rich (3 parts)
- **“Green” materials:** Nitrogen rich (1 part)

TO

- **Microorganisms:** to consume material in bin
 - Come from soil or compost added to new pile(also come from the earth, the materials added, the environment...)



What to compost at home:



YES- Green / Nitrogen-rich:

- Veggies, fruit, & peels
- Bread, rice, pasta, grains
- Coffee grounds, paper coffee filters, tea bags
- Eggshells
- Grass clippings, yard waste

YES- Brown / Carbon-rich:

- Fall leaves
- Straw (avoid hay - seeds)
- Shredded newspaper or paper
- Paper egg cartons (rip up)
- Paper towels, napkins
- Wood chips – not too many!
- Old potting soil, dead plants (not diseased)
- Animal bedding (herbivores)*

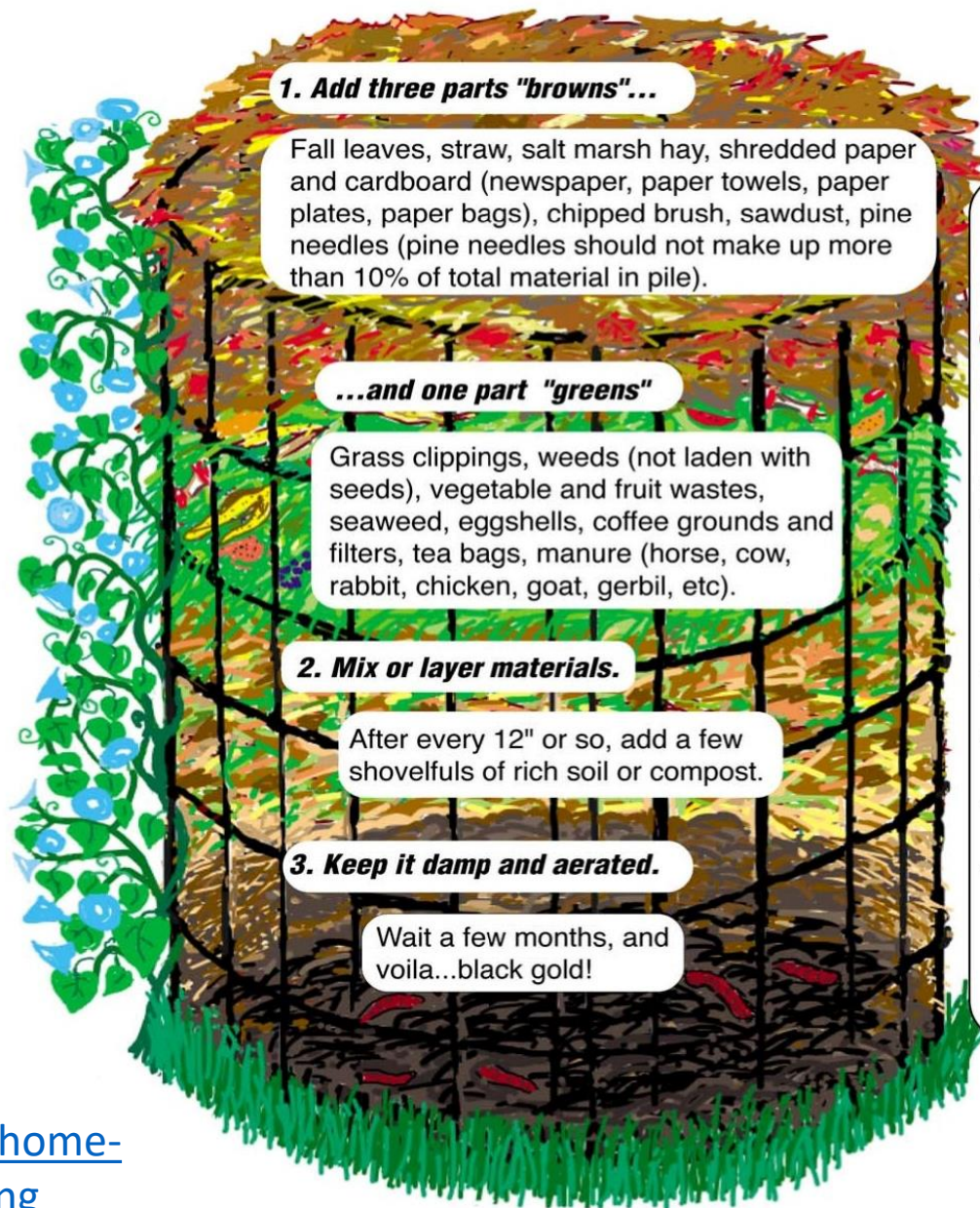
NO- will smell and attract animals:

- **Meat, fish, bones**
- **Cheese, dairy**
- **Fat, grease, oils, peanut butter**
- **Cooked foods with lots of sauces/ butter**
- Diseased or insect-ridden plants
- Weeds which spread by roots and runners
- Weeds with seeds

To make compost, just follow these simple steps:

**Small to
Medium
scale →**

**Home
composting
is easy!**



For best results, and to keep out odors and pests,

DO NOT ADD:

- ◆ Meat, bones, fat, grease, oils
- ◆ Peanut butter
- ◆ Dairy products
- ◆ Cooked foods with sauces or butter
- ◆ Dog and cat manure
- ◆ Diseased plants
- ◆ Weeds gone to seed
- ◆ Weeds that spread by roots and runners (vines)

<https://www.mass.gov/lists/home-composting-green-landscaping>



Home Composting: *How does it work?* Setting up your bin

Build Pile:

- Add leaves / brown materials to 1/3 full
- Add some finished compost / soil
- Add brown / green materials in alternating layers (3 to 1 brown to green ratio)
- Top with leaves or brown material
- Slowly add water to wet pile, or wet each layer

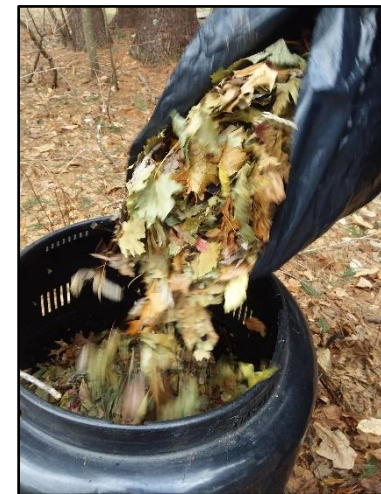


Home Composting: *How does it work?* Setting up your bin

- Place bin in an easily accessible place (winter)
- Place bin in sunny spot
- Keep enough water on it during hot weather

Assemble materials you will use to start:

- Food waste
- Lots of fall leaves/ brown materials
- Shovel & pitchfork
- 1-4 shovelfuls of finished compost or garden soil
- Hose or bucket(s) of water



Home Composting: *How does it work?* Keep it Cookin' (Does it smell?)

- 1) Each time you add food waste, bury/cover with leaves/brown materials.
- 2) Stir pile 1-3 times a month in warmer months.
 - If it smells BAD, repeat 1 and 2
- 3) When the compost is finished it will look and smell like clean, fresh, crumbly soil.



Keep it Cookin': Actually cooking?

Cold Composting

Pros:

- Easier to maintain
- Less time intensive
- Any scale works (hot needs $>3\text{ft}^3$)
- Less chance of overheating, which leads to nutrient loss

VS.

Hot Composting

Pros:

- Kills weed seeds
- Disinfects manure
- More quickly produces usable product
- Degrades toxins (residual pesticides)



Kitchen compost collection pails make composting even easier!

- Franklin County Solid Waste District: \$5
- Worcester County Conservation District: Connect you for \$5-\$10 through your town
 - Shrewsbury, Milford, Wachusett Earth Day
- YOUR town? – may be free with MassDEP grants, ask!
- Sure-Close Pail: 35% recycled content
 - Filter in lid, but lid closes tight



Bin Types and Resources

Earth Machine

- Franklin County Residents; buy bins "at cost"
- \$25 - \$50
- www.franklincountywaste-district.org/composting.html

Also available discounted in many towns.



33 inches tall

32 inches wide

Open air WCCD "lobster trap" bin

- \$16 per panel, 5-6 panels
- Worcester County Residents
- <https://worcesterconservation.org/shop/compost-bin/>
- Order online: worcesterconservation.org

1 meter wide



1 meter tall

Make your own bin from pallets



- Free or low cost (hardware)
- Check your pallets; avoid those treated with chemicals:

www.1001pallets.com/pallet-safety

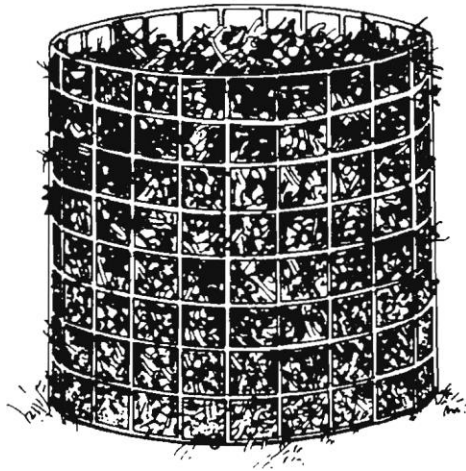
- Lonestar Worms, Austin TX teaches how to make this 2-bay compost bin from reused pallets:

<https://tinyurl.com/reusepallets>

“Cold composting” for leaves only

Leaves are banned from trash disposal.

Chicken wire circle



At right: Pat Leuchtman's photo from her "Between the Rows" Column, Greenfield Recorder



Next Steps: Scale up or scale down

Upcoming webinars:

• **Vermicomposting (worm composting)**

- Amy Donovan
- Monday, May 10, 2021 @ 7PM

• **Restaurant and Business Composting**

- Khrysti Smyth Barry, Amy Donovan, and Rick Innes
- Tuesday, May 18th, 2021 @ 2:30PM



Next Steps: Start or improve your composting operations!

- **Buy a home compost bin, and/or kitchen pail**
- Contact WCCCD, FCSWD, or your city or town administrator office
- Make a note on your calendar to save leaves in fall



Want in-person help with setting up or revamping your compost pile, or assistance with soil testing or garden planning?

Our staff can assist your efforts to understand & improve your soil, start composting, implement conservation practices on your farm, control invasive species, start a vegetable garden, create a wildflower or rain garden, and improve or create wildlife habitat on your land. Just contact us (see below) to schedule an outdoor, socially distanced site visit!



Soil samples are collected according to the UMaine Soil Testing Lab protocols. We handle the sampling and shipping. We'll get you the results and help with interpretation for your land.

\$50 for first site visit (includes first soil sample)

\$35 per sample thereafter

◦ Contact our office: (508) 829-4477 (Ext. 5) OR

Email WCCD's Conservation Planner: joel.betts@usda.gov

Resources:



- In Franklin County: Amy Donovan
 - amy@franklincountywastedistrict.org
 - www.franklincountywastedistrict.org (click on "Composting")
 - Franklin County Solid Waste on Facebook

- Clear View Composting in Orange: Rick Innes
 - Clear View Composting on Facebook
 - (978) 544-5872



- For businesses and institutions, or commercial compost site assistance: Khrysti Smyth Barry
 - Khrysti.Barry@CETOnline.org
 - RecyclingWorks in MA www.recyclingworksma.com



- Can also go to www.mass.gov and type "home composting" into the search bar

A BIG thank you to...



For more info on Greater Quabbin Food Alliance events and to join the listserve go to: <https://quabbinfoodalliance.wordpress.com/>



Q & A: Expert Panel

- **Rick Innes**
Clear View Composting
- **Amy Donovan**
Franklin County Solid Waste
Management District
- **Joel Betts**
Worcester County Conservation District



With support from Khrysti Smyth Barry at the Center for EcoTechnology/RecyclingWorks in MA, Susan Campbell at Drawdown Montague, Deb Habib at Seeds of Solidarity, and Rocio Lalanda at Mount Grace Land Conservation Trust