

Out in the Garden

Rockport Garden Club, June 2021



The Garden Diary: Getting to the Bottom of the Transfer Station Compost Pile

When the Environmental Impact Committee met for the first time at the end of last September, we formed a Transfer Station Compost Team to find out more about a valuable resource offered by our town. The team, Lois, Jill, Karen, Shubhra and Lisa realized that we knew almost nothing about it. It was a topic filled with myth and mystery. We dug in and decided to look at a few areas of note:

- What are the Town rules about the pile?
 - ◆ What goes into the pile?
 - ◆ How is the compost pile maintained?
 - ◆ What does a healthy municipal compost pile look like?
- How does the Garden Club feel about the pile?
 - ◆ Who uses it...or not? And why?
 - ◆ What are the concerns about the pile?
 - ◆ How do we find out if the pile is safe and clean?
- Are there resources we can consult to get the straight poop?
- Is this an area where a little education might go a long way?

* The Transfer Station *

Municipal composting provides communities with many environmental benefits- reducing the volume of waste to be landfilled and encouraging the production of beneficial bacteria that produce nutrient-filled material to enrich the soil and help retain moisture.

The key factors in successful municipal composting are ensuring that the proper materials are deposited in the pile, turning the pile regularly to support aeration and aerobic decomposition, and allowing the pile to cure.

Yard waste at the Transfer Station lives in 3 piles, the Brush pile, the Active pile and the Mature pile. The

active pile in the middle of the lot is where new green and brown materials are placed and where the bulk of the composting process takes place. This pile is turned at least once a week and twice on a good week. This is the pile where microbes break down organic matter and create the heat which denatures pesticides, herbicides and weed seeds. After measuring this pile's temperature for a month, we determined that the breakdown is assured by sufficient heat (135°-165°.) That heat is an indication of a pile that's alive and healthy.

Only leaves and yard waste should be deposited into the active pile - leaves, grass clippings, garden waste, weeds and hedge



The Active Pile, April 19, 2021

clippings. Yard waste should be laid loosely and not contained in biodegradable paper bags or other types of containers. Horse manure is accepted at the Transfer Station and is a safe additive to a hot pile like ours.

In the past, the DPW was depositing road waste in the pile. That no longer is the case and only yard waste is used. Here are the [Transfer Station Rules](#).

The pile on the far left of the lot is the Mature pile. Despite having little green material, temperatures are high (as evidenced by gulls warming themselves in cool weather.) While curing, it continues to be turned regularly. The full process takes over a year, and the finished pile is sifted to remove materials that don't belong. The sifting takes place in the spring once it is not too wet.

Brian Moore, Manager of the Transfer Station, said that the pile contains material that's at least 1 1/2 years old by the time it's sifted.

Despite space limitations, the Transfer Station follows the methods recommended by the D.E.P. for processing of the compost pile and while it doesn't get top marks, it is fully compliant. If there were more space to create windrows (long short piles,) the facility would get an A+ rating. The Transfer Station compost managers are extremely proud of the resulting compost and are delighted to share this "black gold" with the Rockport community.

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* Transfer Station Survey *

The Environmental Impact Committee has prioritized composting garden waste for use in our gardens as an important way to minimize the garbage that ends up in our landfills while reducing garden maintenance costs incurred when we buy compost. For those of us without a backyard compost pile the Rockport Transfer Station is an option for ready to use compost. However, we have no idea regarding how many Rockporters actually use the Transfer Station compost or how they use it, or what might be reasons for not using this compost. We decided to use a short email survey to help us better understand how our club members feel about Transfer Station compost. 70 members responded to our survey.

The [survey results](#) show that only 23% or about 1 out of 4 garden club members responding to our survey are currently using the Transfer Station compost. While 17% said that they had not used it lately, 46% or almost half our membership does not use this compost. The primary reason for not using the compost is the belief that it contains herbicides and pesticides – little over half (52%) of our survey respondents indicated this as the reason for not using the compost for their gardens. About a third (31%) of our survey respondents don't use the compost due to concern that it contains weeds.

Perceptions of the compost vary greatly as can be seen from comments collected by our survey:

“In a nutshell, it's wonderful, with a great staff that efficiently oversees the process. It's available most of the year and even sifted. It makes the soil in my flower beds easy to work. However, I don't use it in my vegetable garden because of possible chemicals in the compost.”

“It's been years since I used TS compost but it smelled like oil and had an inconsistent texture.”

“I worry about spreading invasives.”

“It is a wonderful resource but it should be tested occasionally and the results posted.”

Overall, there is interest in using our Transfer Station compost for flower gardens (38%), container gardens (26%), vegetable gardens (17%) as well as lawns (12%). Almost everyone (93%) would like to use the compost in some way.

Our members need to feel confident that the compost is free of chemicals and weeds.

* The Soil Tests for Chemicals *

Based on persistent comments by the public and statements derived from our survey, we decided to investigate if there were pesticide and/or herbicide contaminants in the pile. We sent samples to a qualified testing laboratory which tested for 21 pesticides and 11 herbicides. [The results showed no detectable contamination of either the pesticides or herbicides.](#) Meaning, the processing at the transfer station is effective and the widespread concerns about such contamination are unfounded.

* Seeds and Weeds *

In an ideal situation the weed seeds that are already in your garden, blown on the wind, dropped by birds and other animals, and left over from last year's garden would be covered by compost deep enough to inhibit their germination. And, the compost, having had weeks of slow baking at temperatures that kill most seeds, would not add significantly to the weed population. We decided to see just how close to, or far from, this ideal our current compost pile is. We devised the following experiment: Five containers of approximately 1 square foot were filled 3 inches deep with compost from 5 different locations on the compost pile. These 5 containers were placed on a plant stand under artificial gro-lights for 6 weeks and watered twice a week. [Each week the total number of germinating seeds were counted.](#) In the end, we identified the seedlings as goosefoot (easy to pull.)

Based on our observations, the following conclusions have been made:

- Not all germinating seeds survived on the pure compost. Nevertheless there was a net increase over 6 weeks to a total of 24 per 5 sqft or --- approximately 5 per sqft
- With respect to seeds. the compost pile is not homogenous. The sample with the most germinations had more than five times more germinations than the sample with the least.
- We do not know if these germination rates are higher or lower than those that would occur in ordinary soil. An additional comparative study could provide this useful information.
- It should be expected that these rates will continue to diminish over time as the compost continues to mature.

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* Expert Advice *

We consulted the Massachusetts Department of Environmental Protection for some help. Ann McGovern, the Consumer Waste Reduction Coordinator of the MADEP has been an invaluable resource and we have a continuing dialog with her.

When asked about the safety of municipal compost piles, she answered:

“There is often a common belief/misconception that municipal compost isn't good or safe to use because of weed seeds or toxics. Generally speaking, municipal compost heats up sufficiently to deactivate most weed seeds, and the yard waste compost is generally a good soil amendment and improves nutrient and water-holding capacity of soil.

Most (legal) pesticides and herbicides are designed to degrade within a year, so older compost is typically free of those. Towns or users can test for the presence of herbicides by planting some legume seeds such as beans in the compost. Legumes are very sensitive to herbicide residues and if present, will exhibit leaf curl. If they grow normally, the compost is free of herbicide residues.

Compost can be tested for nutrients, heavy metals, organic matter and other characteristics, but the proof is actually in the pudding, or in this case, in the garden. If you have had good results using the town's compost, then you have a very good basis for recommending that others can use it and expect good results, too.

A lot can be assessed about compost simply by using your senses: looking at it (it should be brown, not grey or black), smelling it (it should smell pleasant, not acrid or sulphuric), feeling it with your fingers (it should be crumbly, not sticky or sandy), and then the ultimate test, using it for plants. If plants thrive in it, and weeds don't appear in great amounts where it was used, then you can be confident that it is good quality.

Compost provides organic matter to your soil, which helps it to hold moisture and nutrients, improves structure, provides good habitat for soil organisms and supplies nutrients in a time-release fashion. One application of compost will typically release nutrients slowly during the growing season.”

We researched pesticides, herbicides and weed seeds in compost on the Web and confirmed Ann's assertion that there's general agreement out there that most chemicals and seeds are denatured in compost after a year. In fact, composting is sometimes used to degrade pesticide residues commercially.

Ann's letter made us feel much more confident about the safety of the Transfer Station Compost Pile.

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* Education *

When we realized what a “pile of worry” the compost pile was, we asked the Transfer Station guys if they would consider placing a sign near the pile. They readily agreed and we enlisted the help of Seacoast Graphics to help. We came up with the wording and Samantha Pyles at Seacoast designed a nice sign. When we delivered it to the Transfer Station, the reaction was, “That is freakin' gorgeous!” We hope you agree.



Also, please avoid adding any invasive plants that have gone to seed to the pile. The pile is hot enough to kill almost all seeds, but it's best not to tempt fate. Put those in the dumpsters.

* The Green Team *

On another educational note, when we envisioned this project we hoped that we could involve students in some way. Unfortunately, student participation was put on the back burner.

Here's what we propose for student projects:

Create Bioassay Projects-- There are a few bellwether plants that are sensitive to chemicals...peas, beans, lettuce and radishes. Planting these (Bioassay) is an economical way to test for the health of a pile.

Assess the Physical Properties of the Piles-- The physical properties that can be analyzed are Pile Temp, Moisture Content, Odor and Visual Cues.

Look for Microbes-- The key to great compost is that it's a living thing filled with microbial life. The microbes can be viewed with a microscope.

* Conclusion *

Now that we know what's in the pile, how it's maintained and that it's free of bad stuff, we're all sold on its benefits for our gardens. We feel comfortable about recommending that everyone should use this valuable organic resource. We're using it this year, how about you?