Chat questions and answers
August 9, 2022
A Doo-able System for Multiple Dogs
Speaker: Kathy Doesken, Rocky Mountain Soil Stewardship
Fort Collins, Colorado USA
All responses from Kathy

Q: So the phase one compost heats up naturally?

A: Yes. The natural composting process starts up the material If you put in the right combination of carbon and nitrogen, if a porous mixture of organics and water is present, microorganisms start to break things down. There's a common microorganism called "thermophilic" and they're the ones who eat first at the banquet table. They give off heat as part of their metabolic process and this sets off a positive feedback loop causing them to grow in number. You also need volume for it to work.

Q: Where can we get the worms?

A: There are finder services that provide them. Rhonda Sherman's website at North Carolina State University has state-by-state sources, or you can Google composting worms. You can also purchase them from big providers in California. But at certain times of the year, when it's really hot or cold, they don't always arrive alive. I would encourage you to start with a small quantity of worms and build up your own population. RMSS only sells them locally.

Q: In the batch preparation, how do you get the slurry from the mixing trough to the windrow or bin?

A: On the scale I'm dealing with right now, I dip it in five-gallon buckets. The distance is short. I've thought of sump pumps and a gravity-feed system with tubes/funnels/troughs to get a more refined slurry application. But at this scale the buckets are working.

Q: In the first bin do you stir the feedstock ever so often to make sure that all the feedstock is evenly decomposing?

A: No. I'm just very careful that the material is very fluffy. When add new layers, I mix it with the layer below as I go along so that all types of materials are in contact with each other. For the process to happen rapidly, you need to get all of the surfaces in contact with each other so that the bacteria get to work. But I do turn it when I put it into the next bin and the worms work their way through it. Make sure not to put the mixture on top of the worms. Put the composting worms on top and let them work in. Otherwise you'll crush and suffocate them.

Comment: Meme's worms is a reliable vendor online

Comment: Armstrong pump as I call it ☺

Comment: This is great, Kathy! Thanks for sharing. I would love to try to set up a similar system at an off-leash dog park that has an adjoining garden run by the Master Recycler Composters (they even have worm bins there). Sounds like the perfect partnership. Nice to hear about your promising pilot. Thank you.

Q: This goes along with the last comment. What if you want to try this system at an off-leash dog park, but don't have a garden nearby. Do you really need other waste and leaves? Could you just use 99% dog waste?

A: No. You need to make the feedstock optimal for microorganisms if you're vermicomposting. Carbon, nitrogen, air, moisture – the more managed the process the better. I 'm not sure most dog parks would want to take on a two-phase system.

Q: Thank you so much for this presentation - very informative! How would using compostable pet waste bags impact this process? My company (Doggy Do Good) makes certified compostable pet waste bags and would love to send you some to test if you are open to it.😀

A: I have no direct experience, but might try to put in a few in the slurry where it would become like tissue paper and get broken up when stirred. I doubt if it would be a problem at all. I would love to try out your bags. Send them to Rocky Mountain Soil Stewardship – mailing address at the website.

Comment: (in response to Kathy's advice for screw-on lids for plastic feedstock containers) Gamma lids is the trade name

Q: You mentioned that you have a slick way to separate the worms from the final product. Can you share how you do this?

A: (shows photo of four-bin set-up) The slats come out (one-by-one) in the front of the bin. When it's time to harvest the vermicompost, remove the carpet cover from the top and the worms move down as the top dries out. Rake off the compost from the top. When the top dries again, the worms move down. Repeat the process until the vermicompost is a shallow layer. When I see their tails, I take pity on the worms and use a spading form to remove the wet bottom material with the composting worms. I put them aside to work in a new pile; I can pretty much preserve the worms. You need to be patient. In Colorado, the tops dry pretty quickly. If it's rainy, I put off harvesting until it's dry and sunny.

Q: Have you encountered any issues with city, county or state regulations when creating the compost?

A: In terms of my horse manure composting, the Colorado Department of Public Health & Environment says that farms can compost agricultural materials on the farm and bring in feedstocks needed for that to happen. We don't take manure from other people, but they do bring us leaves. The pet waste is something that is generated on our own property and we don't take it off the property. I suspect that this would come under the auspices of backyard composting at the level we're doing it. But we need to let regulators know that we exist; that way if complaints are made, the agency can look it up and say that we're operating under this rule.

Q: How long does it take the worms to break everything down?

A lot depends on where you are and the season. Cold stops activity. I try to get the vermicomposting process started before the ground freezes, before early October. I'd say that here it's a one-year process, maybe less if you hit the right season.

Q: Once you've put the cooled compost in the second bin, do you continue to add new material from the feedstock bins, or do you wait until the compost is completely done before starting the process over again?

You complete composting the whole bin and then introduce the worms as phase 2. Once you start the vermicomposting process, you don't add more material. The worms take as long as they want. They need 50% moisture and need to be covered. You can stuff the sides of the pallets with leaves to insulate the worms and keep moisture in. Worms go downward when it's cold and don't do much, but they will live.

Q: Can I use my home composter that was purchased through my city?

A: The black plastic compost bins work fine. I use them only for food. I add material in thin layers so the worms don't suffocate and they come up for the food, so I've had good success. But in the winter, there's not enough material for them to stay warm and they eventually die. I use two of them (so that worms can work on one bin as the other fills before worms are introduced).

Q: Could you scale up your process to where you would take on additional pet manure?

A: Going back to CDPH&E – that would be operating outside regulations for home composting. I might do it as a business if a city wanted to contract with me. We would have to go through the permitting process and I would do it at a location outside my property.