Frequently Asked Questions

What are the differences between your testing packages? (Soil, Compost, Liquid)

We recommend you choose your testing options based on your material type. The major differences between these options are how the samples are treated, how the data is displayed, and the 'ideal ranges' that are shown on your report. For example, it is likely (and we prefer it!) if your composts have a higher moisture percentage than a soil sample would.

How much sample material do you need per sample?

- **20g for soil/compost samples,** or about 1/4 cup per sample.
- **1.5 cups, if your sample includes <u>all</u> of the add-ons,** per sample.
- **20ml for liquid samples,** fill up a water bottle half way, leaving the other half of air, and seal the closed lid with tape before shipping to prevent leakage. The air allows the biology to breathe, ensuring a more accurate reading for your aerated tea sample.

How fast should I send in my samples after I take them?

<u>For soil/compost samples, 5-7 days</u> is a great time guideline to aim for. We typically do not see a difference in the activity readings until after that 7 day mark. (If we're experiencing extreme heat, it is good practice to include a cold pack in the shipment along with your sample.

<u>For liquid samples, we request that they are sent overnight</u> with a cold pack or two in the sample shipment. Please see the liquid instructions page in the Testing Information Packet for full sampling/mailing instructions for liquid samples.

What is the difference between Aerobic Fungi/Bacteria and Total?

The Aerobic Fungi/Bacteria reading is the portion of your fungal and bacterial biomass that is actively metabolizing oxygen. Total Fungi/Bacteria is the measurement of all biomass that we were able to enumerate within your sample: dead, dormant, alive, active, anything!

The example that we frequently like to use is a gym: there are a few people actively working out, lifting weights, running, etc. but there are some folks that are waiting to use the equipment, buying a smoothie, or spotting for their friends lifting weights. This is the exact same thing! The people that are working out are the “Aerobic” numbers on your report.

What is the difference between Active and Aerobic Fungi/Bacteria? (Your old reports used to list ‘active’)

This is the exact same measurement, measured the exact same way – direct microscopy through an epifluorescence microscope, utilizing a special stain that allows us to view and count the active biology in your sample. We simply changed the wording on the report because we find it to be a better term to describe what we are measuring.

How is protozoa measured?

Measuring Protozoa is a bit different from measuring Bacteria and Fungi. Our method involves creating several dilutions of the sample and then correlating presence and absence of each group to create a Most Probable Number #/g or #/ml.

Unlike bacteria and fungi, it can take up to 5 days to complete this test. Protozoa are typically single cell organisms that feed upon bacteria. Flagellates and Amoebae are true aerobes, meaning they must have adequate oxygen to survive, while Ciliates are Facultative Anaerobes, meaning they can survive in low oxygen conditions. Numbers of protozoa are very important as an indicator of potential nutrient cycling, if there are sufficient levels of Flagellates and Amoebae then aerobic nutrient cycling can occur. However, high levels of Ciliates can be an indicator that anaerobic nutrient cycling is occurring. We use Ciliates to help identify potential anaerobic conditions in the sample.

Do you have a compost tea/ReVive (and/or 5 gal brewer) recipe you can share?

Yes! (This is posted along with the products for brewing on the website as well:)
Quick Brewing Recipe using ReVive
Mix 1/2 lb. of compost with 2 Tablespoons of Soil ReVive and let it sit and "pre-treat" for a few days before brewing. You'll likely see the fungi growing on top -- this is a great sign! After a few days, move the mixture into the 5 gal Brewer, and fill with however much water is necessary to fill the bucket to brew. Bubble for at least 12 hours before applying. As long as the bubbler keeps going you can use this material within 1-2 days. (After removing it from the bucket, you'll have 4-8 hours to apply, depending on the temperature outside.)

What is your recommended Protozoa Infusion Recipe?

In a 5 gallon basket put a 3-4 inch layer of fresh cut hay
then fill with water
add 1 tablespoon of fish
bubble for 3 days
Apply at the rate of about 1 gallon per acre, 1 cup per 1000 square feet

What does 'Nitrogen Cycling Potential' mean?/Do you still do this reading? Is the Nitrogen CP/Estimated Nitrogen Release a reading that you offer?

We used to offer a 'Nitrogen Cycling Potential' number on these reports, so this may be what was noted on the report. This calculation is derived from the protozoa populations and their determinant consumption rates. (You may find more details on the nitrogen cycling potential method in the text "Methods of Soil Analysis Part 2" edited by Peter Bottemley.)

Our lab has since discontinued the use of this measurement due to the amount of assumptions being made, and instead determines the biomass measurement for living, biological Nitrogen. We should be able to ballpark this new nitrogen reading from the report, even if it is an outdated report format.

Do you still test for Mycorrhizal Fungi?

Not in-house, but we can work with Dr. Efren Cazares of MycoRoots who is here in town – if someone is already testing samples with us, then we can facilitate the

sample to Efren. Otherwise, we recommend they reach out to Efren directly at mycoroots@comcast.net.

Do you still offer the comprehensive package?

No, we no longer offer the bioavailable nutrients/comprehensive package, and instead recommend clients to their local analytical labs for chemistry testing. Generally we recommend them to Western Labs for **compost** samples, and Prescription Soil Analysis for **soil** samples. It is much cheaper and faster in the long run for our clients to go directly to them for this type of testing.

How is ___ measured? (Which Units of Measurement?)

Protozoa is measured using MPN per gram, or the Most Probable Number method.
Total Bacteria and Fungi are measured using micrograms per gram.
Nematodes are measured in # per gram or total counted per gram of soil.