



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 all 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?

For soil/compost samples, 5-7 days 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.)

For liquid samples, we request that they are sent overnight with a cold pack or two in the sample shipment. Please see the liquid instructions page in the Testing Information Packet for full sampling/mailling 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 gallon brewer, and fill with however much water is necessary to fill the bucket to brew, along with another 2 tablespoons of Soil ReVive. 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.)

How do I increase Protozoa in my Tea or Brew/What is your recommended Protozoa Infusion Recipe?

In a 5 gallon bucket put a 3-4 inch layer of fresh cut hay, then fill it with water, add 1 tablespoon of fish, bubble for 3 days, then apply at the rate of about 1 gallon/acre OR 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 folks 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.

How long will my samples take to process?

- **The Soil Life Test** on its own takes 3 business days to complete.
 - *If Aerobic Fungi/Bacteria and/or Protozoa is added*, that adds up to 1 week.
 - *If Nematodes are added*, that adds up to 2 weeks of processing time.
- **The Compost Basic** takes roughly 1 week to process after sample arrival.
- **The Liquid Basic** takes roughly 1 week to process after sample arrival.

How long will it take to repair my soil?

It varies a lot depending on the conditions that you start with, which amendments/processes you incorporate, and how intensively you manage your land. Using our products, we see benefits 2-3 weeks after the first application, but we usually see “full transition” to a healthy, sustainable, ‘repaired’ soil in 2-3 years.

That is where things really start turning around. Of course, you’ll get big results in the first year of making changes, but to get it to a point where you’ve implemented all of the strategies and everything is pointed in the right direction-- That usually takes 2-3 years.

Do your ProVide & ReVive products both have Humic Acid?

Only Soil ReVive. Soil ProVide is strictly biology: bacteria and fungi for the win!

What is the significance of Hyphal Diameter?

Generally, the thicker the fungi, the healthier it is, and the thinner the fungi, the more likely it is to be unhealthy, diseased, or challenged by adverse environmental circumstances. After years of analysis, if the fungal biomass is above the threshold the average diameter is most often in good to excellent range, if the level is below the threshold there is likely to be smaller diameter hyphae, which can indicate disease pressure in the soil.

What is meant by the term "biomass"?

The weight of the organisms in the soil. The measurement of micrograms/gram of soil. Fungal biomass is calculated from the length and width of hyphae and the number of bacteria is converted to volume. The unit of measurement in micrograms (one millionth of a gram), reported as μg .

Are there visual indicators that your soil structure is off?

Yes! There are some things that you can look for. The best thing is to just get a penetrometer. You can watch for puddling, (if it rains and the water just sits there on the surface), that is a compaction/water filtration problem, which is considered a soil structure issue. You can also dig it up and look at the aggregation.

Do I mix/till compost into the soil, or leave on top of the soil?

It depends on your project and your practices, as well as the timing of the application. There is really no simple answer here – it's really case sensitive. We recommend setting up a consultation call to review your project's specific needs and timeline.

How long does it take for compost to mature?

Anywhere from 6 weeks to 1-2 years. It depends on the kind of compost, materials used, the C:N ratio, and the process you use (thermal, static, etc.). Learn more about composting in our Online Education Course.

If my compost goes dry, will life return with water?

Yes... *Usually*, it does. If it was well-made to begin with, and then dries out... water will likely bring the microbes 'back to life' so to speak. A lot of people dry out their compost, or even pelletize it, and are able to achieve these results. Once you've introduced water and a habitat where the organisms can wake up and grow, they usually come back to life.

How can you tell if a commercial compost is any good before you purchase it?

Other than requesting a compost report of the material, we recommend going by smell, sight, and feel to determine if it is good. Use the squeeze test: implement field testing! Obviously, you can't tell if it has E. coli from those methods, but if it fails most of those field tests, chances are much greater that it'll have a disease. Be sure to use your nose, foul odors are a potential warning sign of anaerobic conditions in the compost.

Without testing, is there a way to tell if my tea is bad?

It will smell bad! Smell is probably the best way. There's no other real way to tell. You can't touch it, you can't look at it. If you have your own microscope, look for ciliates. If you see a lot of the ciliates, it's probably not a very good tea, and it is likely that it has gone anaerobic. Ciliates are usually there in anaerobic conditions, or to help clean up biological waste - which in a tea, would indicate potential issues in the biology.

What is the shelf life of ProVide?

Our label states 2 years, but we've seen it last longer. We have tested some products that were a few years old and were still of great quality. Storage conditions are most important and whether or not it has been sitting open. When it comes to liquid biology, we recommend if it smells bad, throw it out.

Is CEC the same as EC?

CEC is Cation Exchange Capacity. EC is Electrical Conductivity. CEC is the measure of extractable nutrients from the surfaces of the sand, silt and clay in the soil. EC is the measure of free ions in the soil solution. While they are slightly related, they are two

very different measures that show different soil characteristics. Earthfort tests EC specifically because of how it may impact soil microbiology based on the salinity potential and availability of water soluble nutrients.

Which E.coli does your E.coli Assay test for?

Our E.coli method utilizes the R-Card method as developed by Dr. Jonathan Roth of [Roth Bio Sciences](#), which tests for all strains in general.

→ *If you need to determine specific strains of E. coli*, we recommend reaching out to [Western Labs](#) as they are able to validate with the presence of multiple bacterias i.e. "normal" E. coli strains, the e. coli 0157:H7 strain, salmonella, listeria, etc. through PCR validation, which is highly accurate. They currently target 3 genes of E. coli with this method, and are expanding in this area of research.

My chemistry report shows a different pH reading. Why is this?

It is likely that due to different testing methods, along with sample material and sample state, that this number is slightly different from lab to lab. Some methods require different treatments of the sample before they conduct the final measurement, and also, it is important to keep in mind that different sample material may have been sent to different labs, or it arrived later on in a different state biologically. There are so many factors to consider when we discuss lab to lab comparisons, that it is important to keep many things in mind.