



Sampling for Soil Microbial Profiling

Some basic rules:

- Do not put any lubricant on the soil probe- wash the probe first
- Clean off the soil probe between treatments- for example if you are sampling an alfalfa field clean off the probe before you sample the wheat field.
- Take the soil temperature and record it on the bag at each sampling location, soil temperature helps me to understand the conditions better, but it is not necessary- please give me an idea of the conditions when sampling took place.
- Always sample in the crop row- to one side of the plant.
 - Move the duff or residue layer to the side.
 - If it is the east side of the plant for example then sample on the east side of all the plants to be consistent.
 - Slide a washed soil sampling probe, trowel or spade very near the stem of the plant (1-2 inches away in corn so you don't cut the prop roots is ok) so you are sampling the roots too.
- Soil samples should be collected to a depth of 6-8 inches or 15-20 cm, because the majority of plant roots are in the top 20 cm of the soil.
- Put the soil and any root fragments in a labeled plastic zip-lock like bag.
- Put the bag in an insulated container.
- The insulated container is used to keep the soil at soil temperature. Pack all the extra space with newspaper before you send the samples.

How many samples do I take?

- There is no base-line for microbial community analysis. So you need to sample across treatments to compare the microbial communities. You want to be sampling these treatments at the same time and under similar conditions to make a valid comparison. For example: You have 3 pastures that are next to one another, you had a different number of cattle in each pasture, and now you want to know what the affects of the different stocking densities are on the microbial community. You will make at least 1 (and preferably 3) composite samples in each pasture. If you can afford to make 3 different composite samples in each pasture then (in this example) you can more accurately determine if there are real differences in the microbial community subjected to the stocking density treatments.

Another example would be to sample soil that had been fertilized with a product and compare the microbial community of similar soil that had not

been treated and/or had a different treatment. You would do all the sampling the same day under similar conditions.

- If you have a soils map you can sample to soil type, or you can use the yield map and sample the soil in a poor area and one in a good area on the same soil type.

Pastures and mixed species cover crops require some special consideration when sampling. It would be good to have a frame or “Hula Hoop” to define at least a 25cm² or square foot area. This way you have a random representative sample of the plant community.

- You need to randomly place the frame, avoid places with cow dung or obvious patches of different fertility (unless you want to compare the microbial community in a previous urine patch with a community not recently subjected to urine).
- Scrape or remove all the obvious organic matter from the surface of the area you are going to sample. If you don't you will not get an accurate assessment of your soil mineral nutrient content. The organic carbon contained in your soil is really important and is the driver for soil microbial activity- not the litter, duff, thatch, or surface residue layer on your soil.
- Take 3 samples and put them in a large bag. Then pick 2 other random locations and take 3 samples and put them all in the same bag or clean bucket. Mix the composite sample thoroughly and subsample 250 grams or ½ lb of soil, place in a clean, labeled Ziploc bag, freeze the samples for at least 2 days before packaging and shipping.
- Make sure you label the bags with a number or identifier of some kind so the lab can code of your samples after they arrive.
 - Using 1, 2, 3.....etc is fine but you might want to use a separate sheet or a duplicate form to write a description of the sample.

Before you ship your samples to the lab.....

- Please make a copy of the sample descriptions and email or send it to info@rhizoterra.com or avril@rhizoterra.com with a copy of the submittal form. Please state how many samples you sent to the lab, and on what date. We want to track your samples and we will be ready when we get the results. Otherwise we don't know who the samples are for and why the results are getting sent to us.

Shipping the samples to the lab:

- Place the frozen soil samples together and wrap tightly in newspaper, place in an insulated bag or container and ship.
- Include the sample ID form provided by Rhizoterra in the package- make sure you keep a copy of this form for your records.
- **If you are sending samples to the USA from another country please complete the attached APHIS form and attach it to the outside of the shipping container or box. Please check on the website of Laboratory you plan to send the samples to. You will be able to find the forms for submitting a sample and for the APHIS farm-soil form. Without this form your samples will not be granted entry to the USA and your package will be returned.**
- It is best to ship samples on Monday or Tuesday so they arrive before the weekend and can be processed by the lab immediately.

Send the cooler or insulated samples to: One of the labs listed on our website that performs the test you desire.

Need more info? Email: info@rhizoterra.com.



Soil Samples submitted for: _____
Lab name: _____
Lab address: _____

Customer: Rhizoterra Inc., 811 W 21st Ave. Spokane, WA USA
Email: info@rhizoterra.com or avril@rhizoterra.com

Results and invoice from samples submitted to Ward Laboratories for Biotesting that include this form are sent exclusively to Jill Clapperton, Rhizoterra Inc (Jill@Rhizoterra.com), and copied to Avril@rhizoterra.com. Any personal information included with this form by Rhizoterra customers is confidential and/or subject to Rhizoterra-customer privilege. Use of this information other than in direct communications to Rhizoterra Inc. is strictly prohibited.

Sample ID	Date Sampled	Description

