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Sample Collection Protocol

**Important: Do not mail samples without having gone through the online booking process! Scheduling and bookings should please be made through Erdbaum.com.*

General Sampling Guidelines

- Only take samples when it is possible to ship them on the same day.
- Samples should really be shipped with one-day-shipping. Two days may still work, but results will be less accurate as the biology changes over time.
- Before shipping, keep samples cool (but not frozen) and out of the elements.
- All sample containers should be labeled with the Sample ID on the ***outside*** using a permanent marker or an affixed label. Please ***do not*** put any identifying information on a piece of paper and place it inside the container with the sample. The paper will disintegrate, become food for microbes, and potentially change the biology of your sample.
- Samples should be packed snuggly in a sturdy shipping box to avoid spillage and damage along the way.
- Solid samples (compost or soil) should be sampled under naturally moist conditions. This is especially the case with bare ground lacking any mulch or plant cover.
- Sample ID's are ***created by you or your soil consultant*** to keep track of what was sampled, where and why.

Compost Samples

Take 1 tsp (circa 4 grams or 4 ml) from a minimum of 5 different areas from a small compost pile – or 20 different areas from a large windrow – and mix in a bag. Take the teaspoons from various locations and depths within the pile and subsequently combine them into a single labeled plastic bag or similar watertight container. Doing this helps ensure that the sample is representative of the entire pile.

For any single sample, please ensure that you ***do not fill the bag more than half-way with material***. (Note: to reduce the amount of sample material, you may combine and thoroughly mix the sample material separately in a sterile container, and then place a smaller amount of the mixture in the bag).

Seal the bag ***with the air left inside it*** – do not expel the air from the bag, as this will limit the oxygen available to the biology in the sample which may result in anaerobic conditions being formed.

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Liquid Samples (Teas and Extracts)

1. Pour liquid into a clean, non-breakable 100 to 150 ml container with a sealable opening (e.g. plastic water bottle with screw cap). Clean the inside of the container if you are not certain that the bottle previously held only water.
2. Fill the container $^1/_3$ ***full*** with the liquid you want to have assessed. Leave the remainder of the container empty to maximize space for air exchange.
3. Once the screw cap is tightly sealed, wrap it with duct or gaffer tape and place it in a plastic bag.
4. Be sure that the container is clearly labeled with the Sample ID on the ***outside*** using permanent marker or an affixed label.

Soil Samples

Equipment required:

- Coring tool (an apple corer works just fine).
- Clean, sealable container with a volume of around at least 250 ml.
- Permanent marker

Basic core-sample pulling process:

1. Clear off surface organic material from sampling spot (about 3 cm^2) if present.
2. Twist coring tool straight down and pull out material, placing it in your clean container until the core is ***about 7 cm deep***.
3. Typically, ***at least 3 cores*** are required for a representative sample for any given soil condition. So at this point it may be necessary to first mix all soil cores in a larger clean container before putting a smaller amount of that mix (around 100 mL) into your smaller container for shipping.
4. Seal container with ***at least 50% air space***.
5. Label the ***outside*** of the container with your relevant Sample ID.

Around Specific Plants

When taking soil samples around specific plants, best practice is to take your soil-core samples from midway between the trunk/stem of the plant and the dripline (outer most hanging leaves). At least 3 cores should be pulled and mixed together to sample for a single plant or plant grouping (e.g. grasses).

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Broad Areas

If you are assessing the soil biology for more broad land types like fields, pastures, lawns, garden beds, etc., then we can roughly assume two different scenarios.

Scenario A: Various conditions on the same field, requiring you to divide your land into specific areas or zones based on common defining features. For example:

- Healthy crops
- Weedy patches
- Sick plants
- Bare patches
- Ridgelines
- Depressions, etc....

For each zone, take 3 cores and mix them together for a single sample. To truly assess a field, ***at least 40%*** of each zone type should be sampled for a representative data set. ***Each sample must be stored and labeled in its own container!***

It is highly recommended to make an index on a map with Sample ID's corresponding to each sample you take. For example, W1, W2, for two weedy patches, and H1, H2, H3... for healthy patches and so on. ***See below for an example map.***

Scenario B: No plants growing, just bare soil (e.g. a recently tilled field).
For each field:

- Take ***3 to 4 cores from 12 to 15 areas for every 1 hectare*** of land.
    - Scale area numbers accordingly for larger or smaller pieces of land.
- Core sample positions should be random and well distributed over the area.
- Avoid edges, depressions, ridges, or other non-representative land features.
- Mark core sample positions on map for future reference.
- Gently mix all core samples in the same container and transfer a smaller amount to your shipping container.
- Label the outside of the container.

Repeat for each field.

Example map with Sample ID's: