

Proper Collection Protocol for Different Samples

Compost Sample Collection Protocol

Take 1 tsp (approx 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 sandwich-sized plastic bag. 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 sandwich 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.

Label: All sample bags should be labeled **with the name of the sample** on the *outside* using a permanent marker or an affixed label. Please **do not** put any identifying information about your sample on a piece of paper and place it inside the bag. The paper will disintegrate, become food for microbes, and potentially change the biology of your sample.

Soil Sample Collection Protocol

Scenario A: For Healthy Crops, Weedy Patches, Sick Plants, Bare Patches, etc., in the same field.

1. Draw a map of the land you are working on and number each area being sampled on the map. You will need to create an index so you can identify what each numbered area represents – see the example in **Figure 1** at the end of this section.

2. Take at least 3 core-samples from a *single* weedy-patch and place the core samples in a bag. Then label this bag (using a permanent marker) and index it using a clear numbering system (e.g. W1), marking the reference on your map so you know precisely where it came from. Make some notes on any distinguishing features that may be apparent e.g. “This is in a depression” or “This is where the farmer had previously-stored 2 tons of lime last year” etc.

3. Move to another weedy-patch and take a further 3 core-samples, placing these core-samples in a *different bag*. Label and index the bag appropriately (e.g. W2) and mark the reference on the map. Make notes as appropriate.

4. Continue this process until you have collected samples from a representative number of weedy-patches, say 40%, of the total number of weedy patches in the field being assessed.

5. Comparing results should give you a good indication of what is happening across your weedy patches. You may find that in most cases the conditions are similar, but that there are some patches that are very different from the average - in such cases, you may wish to investigate a little further by asking the farmer if he did something different in that area. Or you may later realize that there was a depression in that locality that you’d previously missed.

Repeat steps 1-5 above for Healthy Plants *using a different reference* e.g. H1, H2 ... etc. Then repeat the process for sick plants and so on. Comparing the results from each of these areas will offer you an insight into the overall state of the land you are working on.

Scenario B: No plants growing, just bare soil (e.g. in a field that was recently tilled and not yet planted)

For each field:

1. Take 3-4 samples from each of 5-6 areas per acre (more if the field is larger), selecting these at random, ensuring that they are well distributed over the area of the field you

are working on. Avoid going right to the boundary of the field and to any areas that are not representative of the field e.g. the ridge line or a depression. Make sure to mark the areas you are sampling on the map, as this information may be useful later in your investigation, particularly if you get some unexpected results.

2. Place all of these samples in the *same bag* and mix well before analyzing.

3. Label the bag Bare Soil.

This will give you an insight into the general conditions across the field you are working on. You must repeat steps 1-3 for each individual field or paddock - using different sample bags for each.

Scenario C: Varying conditions & features e.g. Ridges, depressions, etc....

1. Study the landscape carefully and map out the various prominent features.

2. Take 5-6 samples from each of these areas and place them in *separate* bags.

3. Label each bag and use the numbering system you have established so that you can mark these on your map.

These results will inform you of the biological conditions in each of the individual areas being assessed.

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 sandwich 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.

Label: All sample bags should be labeled **with the name of the sample** on the **outside** using a permanent marker or an affixed label. Please **do not** put any identifying information about your sample on a piece of paper and place it inside the bag. The paper will disintegrate, become food for microbes and potentially change the biology of your sample.

Figure 1 - Example of a map & index:



Liquid Sample Collection Protocol

1. Pour liquid into a clean, not-breakable 4 to 8 oz 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 held only water previously.
2. Fill the container $\frac{1}{3}$ full of the liquid you want to have assessed. Leave the remainder of the container empty to maximize headspace for air exchange.
3. Once the screw cap is tightly sealed, cover it with duct tape and place it in a sealed plastic bag.
4. Be sure that the container is clearly labeled **with the name of the sample** on the ***outside*** using a permanent marker or an affixed label.