

GUIDELINES for RECORDING OF COMPOSTABILITY TEST

This Guideline is intended to provide some guidance and recording assistance to facility operators when testing the compostability of products or packaging in their operations. It is not intended to be adopted as a standard by any decision-making body nor is it intended that operators should necessarily require testing of this, or any, kind before accepting products into their input stream.

This Guideline is not intended to imply that the results of any test undertaken according to this Guideline or in any other way should be published or made available for public review. The question of disclosure of test results should be a matter for discussion and agreement between the organics recycling facility owner/operator and the manufacturer or brand owner of the product, package, or material being tested, or as otherwise required by law.

It is important to record the details of the compostability trial throughout the process.

Using the excel sheet, record details each time the tested product is reviewed throughout the process.

From start to finish, documenting process data, observations, and recording progress through photos will be of great help to review the trial's results and success.

The following are details that are recommended for recording, using the excel sheet provided.

1. DESCRIPTION OF PRODUCT BEING TESTED

Name of Product; any additional description relevant to acknowledge product type

2. LOCATION of TRIAL

Record the name of the composting facility and composting technology (open windrow, covered, tunnel, static pile, agitated bed, etc.)

Identify where product has been physically placed (ie. which windrow, which tunnel, which pile, etc.)

3. DATE OF ORIGINAL PLACEMENT AND CONDITIONS

Record date of start of trial (when placed in windrow, tunnel, pile, etc.)

Record the processing conditions of the location where the product was placed at beginning of trial: eg. C/N ratio, Temperature, % Humidity, Oxygen level.

4. TRIAL LOG

The trial log records each time that the product is examined throughout the trial period. For each examination, observation details should be recorded to review status of decomposition and progress towards full compostability.

While some of the observations should be documented quantifiably (ie. temperature; # of days since test has begun), most observations would be qualitative, reflecting what is being seen by the operator. It is recommended that the operator makes note of as many observations as possible, building on the same type of observations from one inspection to the next thereby helping to record changes over time.

Included in each recording are:

- i. Date of Recording
- ii. # of Days since the Test has begun
- iii. Processing conditions: C/N ratio, Temperature, % Humidity, Oxygen level.
- iv. Perceived Degree of Decomposition Change (%)
- v. Written Observations at Time of Recording
- vi. Photos (record photos by Inspection as well as describing what is being done and/or observed)
- vii. Name of Operator doing the Inspection

5. NAME OF TEST PERSON(S)

Identify all those involved in observation process (from placement, to inspections, to final review)

SAMPLE FORM Testing for Compostability @ Compost Facility

PURPOSE

- To test for the physical breakdown of certified compostable product/packaging in real-life large-scale composting conditions

PROCESS

- Process description
- Supplies used in sample preparation
- Feedstock preparation – Ready for Placement in Compost Pile
- Method of monitoring location within Compost Pile
- Trial Duration (at time when compost is finished/ready as determined by compost facility)

EXAMPLE

- **Process**
 - Facility utilized is an in-vessel aerated static pile system
 - Supplies used in sample preparation
 - 10 – 15 units of product/packaging
 - 15 – 20 kgs of feedstock (combination of feedstock @ facility; e.g. food waste, leaf & yard, overs)
 - Mesh bag (e.g. large onion bag)
 - Marker (to help identify whereabouts in compost pile)
 - Camera (to record progress via photos of before/during/after)
 - Thermometer (to record temperature at time of any process change)
 - Calendar (to document time/compost process action)
 - **Feedstock Preparation**
 - Shred product/packaging (as this is usually too small to put in regular shredder, manually cut product/packaging in pieces)
 - Put in mesh bag
 - Mix product/packaging with feedstock
 - Place in composting tunnel/windrow/static pile, digging a hole and placing the bag in the pile to ensure sample is fully covered
 - **Method of monitoring location within Compost Pile**
 - Place an identifiable marker at the test section of the pile to identify whereabouts
 - If pile is moved, remove bag in advance and then place again with marker
 - If water is applied to pile, apply moisture as well to the bag before placing back in pile
 - Trial duration
 - The trial will be completed after **X** days in Active composting phase and **X** days of curing

RECORD

Important Recordings to include on the Composability Trial Log in both photo and written description format are:

- Description of package to be tested
- Description of technology system in which product is being tested in (i.e. windrow/ tunnel etc.)
- Date of original placement
- Trial Log – See attached Composability Trial Log
- Date of recording
- # of DAYS in process
- Measured C/N, O₂, Moisture content and Temperature readings in test location
- Perceived degree of decomposition and change (%)
- Written observation at time of recording
- Photos
- Name of test person(s)

EXAMPLE

- Description of package be tested
 - Compostable materials are mixed with fresh stock from the facility
 - Mixed materials will be placed into the mesh bag
- Description of system product is being tested in (i.e. Which windrow/ tunnel etc.)
 - Product is tested in an in-vessel tunnel system
 - Positive aeration through the material from the tunnel ground
 - Moisture is added from the top sprinkler system
- Date of original placement
 - The placement of material occurred on Feb 1, 2017
- Trial Log – See attached Composability
- Date of recording
 - Information about the trial is recorded on Feb 1, 2017
- # of DAYS in process
 - The testing package is in the process for **X** days of active composting and **X** days of curing
- Estimated Moisture content and Temperature readings in test location
 - Moisture content of the trial package is measured at 35%

- Temperature reading during the trial is recorded in the SCADA system
- Maximum temperature is 65°C and minimum temperature is 45°C.
- Perceived degree of decomposition and change (%)
- Material decomposition is x% after phase 1 process
- Decomposition is x% after phase 2 process
- Decomposition is x% after curing process
- Written observation at time of recording
- Split holes and thinning surface
- Describe change in texture; eg. Plastic layers separated in some areas
- Describe any decomposition on the surface, etc.
- Photos
- See attached photos
- Name of test person(s)
- Compost Operator

Observations

- What are the overall observations e.g. what was the total % breakdown?
- Were there any other limitations or other important notes on the trial?

EXAMPLE

- What are the overall observations? e.g. what was the total % breakdown?
- The total percentage breakdown of compostable material in the trial is about 25%
- The material decomposed at a slow, medium, or fast rate in the in-vessel tunnel composting system
- In-vessel tunnel composting with X days active phase (may or may not) provide enough time for material to decompose
- Were there any other limitations or other important notes on the trial?
- Higher moisture content during composting could result in higher degradation
- Knots or cluster spots may reduce the material's ability to decompose in the process
- pH is also an important factor in the process to promote material decomposition

Conclusion

- How compatible is the product with the facility's operation?
- What are positives and negatives in accepting the product at the facility? e.g. would this product get screened out before completing the compost process?

EXAMPLE

- How compatible is the product with the facility's operation?
- The product (is *or* is not) compatible with current in-vessel tunnel composting operation
- The product (may *or* may not) need longer processing duration (i.e. 3 months) to see significant decomposition (> 90%)
- Current facility design is only for short-term (X days active phase, X days curing) SSO composting
- What are positives and negatives in accepting the product at the facility? e.g. would this product get screened out before completing the compost process?
- **Positives**
 - Accepting compostable product may increase residential participation rate in green bin recycling
 - Accepting this product will increase diversion of material from landfill and will add to the diversion rate of the municipality.
 - Accepting this product will reduce greenhouse gas emissions from waste management activities in the municipality.
 - Accepting this product provides net environmental benefit to the municipality and/or to its residents.
- **Negatives**
 - Accepting the product will contaminate the final compost quality because
 - (i) the product will not decompose during the process;
 - (ii) the product will be screened out at the screening stage and removed as residue;
 - (iii) the product will pass through the screen and present as a plastic contaminant in the finished Compost
 - (iv) Other
 - Product presents in the finished compost will lower the quality of finished compost and have financial impact on sales and market demand.