PART – 1

COMPOST LABELLING STANDARD

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Title: Compost Labelling

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ABOUT US

Compost, animal and vegetable wastes are digested or grinded as black gold or natural fertilizer. Compost is not a substitute for direct breeding. However, gaining the compost's acquired condition and pH in order to benefit from the gain to be obtained in a large gain gives a lot. By making definite additions to the compost, it is possible to obtain a quality cultivation.

Compost manure is a very effective tool for recycling natural waste and re-enriching the soil. Because, thanks to composting, the wastes that go to waste under normal conditions dissolve in the moist and oxygenated environment of the soil and gain the form of organic fertilizer. Thus, even the most unproductive soils can breathe and revive.

PART – 1 INPUT

1. PURPOSE

Composting provides many benefits. Composting is not only complete with containment, it can also be grown and is a valuable material for gardening and landscaping, as an aid to organic farming.

The purpose of this document is environmental standards for the production of compost for the benefit.

The objectives of the standards are:

- Establishing a framework that will increase the removal of waste from disposal by increasing the composting of organic wastes,
- Preventing negative effects on the environment by ensuring that compost produced in Compost meets high quality standards.

The standards apply to composting by non-organic aerobic composting, including food waste, wood, pulp and plant biosolids, sewage biosolids, and unpackaged household waste. Compost can be produced with good judgment and practical practice in the capture, composting process and final marketing of compost usable waste.

The compost to which the standards are valid, is the II of this document. It must meet compost standards in part.

2. STANDARD

The Department of the Environment is responsible for maintaining clean and safe air, air and health for communities of life, ecological and sustainable development for present and future generations of composts. There are many tricky laws and regulations to help the Ministry fulfill this task.

2.1 APPLICATION

Unless otherwise exempted, a compost plant will require one or more resources to operate.The Ministry is adequately equipped to process a relevant application and for a final assessment of a completion. The bidder must provide the Director with all information requested as part of the sale. Conditions included in the purchasing documents and regulatory regulatory arrangements for a cultivation are appropriate for the plant operator.

Part II – COMPOSTING STANDARDS

3.0 INTRODUCTION

- This Section of Standards contains mandatory standards for compost, including:
- metals in compost,
- raw material quality,
- Pathogen
- foreign matter content,
- compost maturity and
- compost labeling.
- The compost quality standards presented here take into account the protection of both the environment and human health for long-term composting application. Therefore, it is important that compost is always used in accordance with the label limits provided for end users. It is not covered by this document to provide any discussion by employees or end users about compost processing and potential adverse human health impacts.

- These compost standards are used to determine whether compost should be categorized as Category AA, A or B compost. Compost that meets the requirements in this Section for Categories AA and A is the EPA's 347th. See Regulation 3 (2) 25 Regulation 347 [1]. Compost that meets category B requirements in this Section is not exemptfrom EPA Regulation 347 and Section V except where it is applied to agricultural land as a nutrient and meets the requirements of the General Regulation O. Reg. 267/03 made under the NMA. See Regulation 5.0.2 of 347.

- Compost standards in this section are based on the need to protect the environment and may not include important quality parameters for certain end compost users. Quality requirements for specific market applications may be stricter than those specified in this document. Therefore, meeting the standards in this document does not ensure that compost meets the needs of certain end users (e.g. nurseries). Chapter III contains more information about compost use, including additional compost quality recommendations (see section 5.0).

- BNQ Industry Standard, CAN/ BNQ 0413-200/2005, Organic Soil Creams - Additional recommended criteria (such as nutrient content, pH and salinity) can be found in Compost.

- Compost Quality Alliance, a voluntary industry program run by the Canadian Composting Council, can also help confirm product quality in relation to certain end uses.

- 3.1 Compost Testing for Compost Categories AA, A and B

- Compost must be tested after the ripening period is completed and before it is released to the market. All analyses for mandatory standards will be carried out by an accredited laboratory using accredited analytical methods (more information about sampling and analysis can be found in Sections IV, sections 6 and 7, and appendix 1 and 2). If compost cannot meet any of the standards specified in Section II of the Standards for a particular category, compost will not comply with this category.

- For information about retesting compost samples that do not meet compost standards, see Appendix 1, A1.1.4, Sample Error Policy (Retesting).

3.2 STANDARDS FOR COMPOST METALS

- Although low concentrations of some metals are useful or even necessary for plant growth and development, maximum metal limits are required to prevent the accumulation of metals on soils. Therefore, this document sets limits on the concentration of metals arranged in compost.

- Compost will be tested for the parameters listed in Table 3.1 and categorized according to the concentrations listed for each metal as calculated on the basis of dry weight:
- Category AA compost must not contain metals arranged in a concentration that exceeds any of the limits specified in Column 2 of Table 3.1;
- Category A compost must not contain metals arranged in a concentration that exceeds any of the limits specified in Column 3 of Table 3.1; and
- Category B compost must not contain metals arranged in a concentration that exceeds any of the limits specified in Column 4s of Table 3.1.
- The sampling and analysis requirements of the compost will be determined in the ECA conditions of the plant. The terms will generally reflect the guidance provided in Sections IV, sections 6 and 7 of this document.

Table 3.1 - Maximum Concentration for Metals in Compost

Item	Column 1: Metal	Column 2: Category AA Compost (mg/kg dry weight)	Column 3: Category A Compost (mg/kg dry weight)	Column 4: Category B Compost (mg/kg dry weight)
1.	Arsenic	13	13	75
2.	Cadmium	3	3	20
3.	Chromium	210	210	1060
4.	Cobalt	34	34	150
5.	Copper	100	400	760
6.	Lead	150	150	500
7.	Mercury	0.8	0.8	5
8.	Molybdenum	5	5	20
9.	Nickel	62	62	180
10.	Selenium	2	2	14
11.	Zinc	500	700	1850

3.3 RAW MATERIAL QUALITY

- Table 3.2 defines the boundaries of eleven regulated metals in compost raw materials. For Category AA compost, the raw material must not contain metals arranged in a concentration that exceeds the limits specified in Column 2 of Table 3.2 as calculated on a dry weight basis.

- In addition, the use of sewage biosolids, pulp and paper biosolids and domestic septage as raw material for Category AA compost production is not allowed.

- For Category A and B compost, the raw material should not contain metals in a concentration exceeding Column 3 as calculated on the basis of dry weight.

- Sewage biosolids, pulp and paper biosolids and domestic septage can be used as raw material for category A and B compost production. In the case of Category A compost

- production, sewage biosolids, pulp and paper biosolids and domestic septage should be limited to a maximum of 25% of the raw material mixture (on a dry weight basis).
- Information on raw material and compost sampling and analysis is given in Chapters IV, sections 6 and 7.

Table 3.2 - Maximum Concentration for Metals in Feedstock

Item	Column 1: Metal	Column 2: Feed for Category AA Compost (mg/kg dry weight)	Column 3: Feed for Categories A & B Compost (mg/kg dry weight)
1.	Arsenic	75	170
2.	Cadmium	20	34
3.	Chromium	1060	2800
4.	Cobalt	150	340
5.	Copper	760	1700
6.	Lead	500	1100
7.	Mercury	5	11
8.	Molybdenum	20	94
9.	Nickel	180	420
10.	Selenium	14	34
11.	Zinc	1850	4200

3.4 PATHOGENS

To reduce the risk of adverse health effects from pathogens, Category AA, A and B compost must meet the following criteria, depending on the source of raw materials:

1. Only for leaf and garden waste:

a. Compost will meet the temperature requirements as mentioned below,

- Using the on-board composting method, the material must be kept at a temperature of at least 55 degrees Celsius for at least 3 (three) days in a row.
- Using windy composting, the material should be kept at a temperature of at least 55 degrees Celsius for at least 15 (fifteen) days. Also, during the period of high temperature, the windshi a windshist will be rotated at least five times.
- Using the ventilated static pile composting method, the material must be kept at a temperature of at least 55 degrees Celsius for at least 3 (three) consecutive days. The pile should be covered with a layer of insulation material, such as cured compost or wood chips, to ensure that all areas of the feed material are kept at the required temperature.

Or

b. Compost will meet the following pathogen reduction requirements:

- 1000 colony forming units (CFU) should not exceed E. coli or the most likely number (MPN)/gram total solids (on a dry weight basis) and

- 3 MPN Salmonella/4 grams should not exceed the total solids (based on dry weight based on the analysis of the entire 4 g sample).
- This requirement applies to each sample tested. If an instance fails, Retest is allowed as described in Appendix 1, chapter A1.1.4. More information about sampling and analysis is provided in Chapters IV, sections 6 and 7.

2. For all other materials:

a. Compost, 1.a. and b. will meet the above-mentioned temperature and pathogen requirements.

- The temperature of each compost mass will be measured daily until the above requirements are met. The days when compost using the Windrow composting method is necessary to meet the prescribed temperature do not need to be consecutive.
- Once these requirements are met, the temperature will be measured at least once a week until compost recovers.
- If temperature monitoring indicates that the specified minimum duration and temperature relationship is not maintained, the material obtained from the composting process will be included back in the composting process during the preprocessing phase or disposed of at a waste disposal site.
- Additional requirements for temperature monitoring of compost can be determined under the ECA conditions of the plant, if any.

3.5 FOREIGN MATTER

Compost should be almost free of foreign substances of the size or shape that can reasonably be expected to cause human or animal injury or damage to equipment. The total foreign matter content and sharp foreign matter content of compost should not exceed the concentrations listed in Table 3.3 as calculated on the basis of dry weight.

Table 3.3 - Maximum Concentration of Foreign Matter in Compost

Parameter	Category AA	Category A	Category B
Foreign matter	Total foreign matter greater than 3 mm shall not exceed 1.0%, calculated on a dry weight basis, and plastic cannot exceed 0.5%; and Compost shall not contain any foreign matter greater than 25 mm per 500 ml.	Total foreign matter greater than 3 mm shall not exceed 1.0%, calculated on a dry weight basis, and plastic cannot exceed 0.5%; and Compost shall not contain any foreign matter greater than 25 mm per 500 ml.	Total foreign matter greater than 3 mm shall not exceed 2.0%, calculated on a dry weight basis, and plastic cannot exceed 0.5%; and Compost shall not contain any foreign matter greater than 25 mm per 500 ml.
Sharp foreign matter	Compost shall contain no material of a size or shape that can reasonably cause human or animal injury.	Compost shall contain no material of a size or shape that can reasonably cause human or animal injury.	Compost shall have a maximum of 3 pieces of sharp foreign matter per 500 ml; and The maximum dimension of any sharp foreign matter shall be 12.5 mm.

More information on sampling and analysis is provided in Part IV, sections 6 and 7.

3.6 MATURITY

- Usually, the term "mature" is used for compost, which exhibits limited biological activity and is now spoiled to the point where it can be stored and used without the risk of odor and negative effects such as risk to plants from phytotoxic compounds. 'Stability' is different from 'maturity'.
- 'Stability' usually refers only to reduced biological activity. Compost becomes more stable when it completes the thermophilic phase of microbial decomposition. However, compost may appear stable as a result of a nutrient imbalance or lack of moisture, and therefore may not show extensive decomposition at the time of testing. If any of the limitation conditions are removed, it may become 'unstable' again. All mature compost is stable, but not all stable compost is mature.
- Compost must be cured in accordance with the maturity criteria described below in order to meet the AA, A and B categories for maturity. The curing process is considered to have started immediately after the last amount of compost was discharged from the process and the compost to be treated was added to a lot.
- 40% humidity should be kept during compost curing ≥.
- Compost is mature:

1.the last part of the material has improved for at least 21 days from the day it enters the batch, and the respiratory rate:

- less than or equal oxygen per kilogram of volatile solids per hour (on the basis of dry weight); or
- less than or equal to 4 milligrams of carbon dioxide per gram of organic matter per day (on a dry weight basis).

Or

2.it is made only from leaf and garden waste and has recovered for at least 6 months.

- This standard is minimal. The director may require a longer curing period, which is determined specific to the occurrent in the ECA. Also, the Manager may require a specific test procedure to measure breathing.
- Section III, section 5.1, provides information about additional indicators of maturity that can be used in the field to inform operational decisions.

3.7 LABELING REQUIREMENTS

- Category A compost, exempt from Section V of EPA and Regulation 347, does not require an ECA for the use or transportation ofthis material. However, the use of Category A compost in order to minimize metal accumulation in the soil should be restricted. All Category A compost sold or distributed will be labeled with the following information:
- A brief statement on the front of the bag or accompanying the shipment in which the compost is sold or distributed in bulk, with great pressure on a shipping invoice or declaration, that the product contains domestic septage and/or pulp and paper biosolids used as raw materials for compost if the municipality contains sewage biosolids and/or any of these materials;
- An expression that determines the following:

The recommended application rate islessthan 8 tons(80 kg/100m 2) per hectare on the basisofdry weight or less than 40 tons of dry weight (400 kg/100 m2)per hectare in any 5-yearperiod.

Or

the recommended application rate is less than the X-ton equivalent per hectare on a dry weight basis, or less than Y-ton per hectare in any 5-year period if the application does not occur annually.

X and Y should be determined by the method described in Appendix 7.

This statement should be expressed clearly using units of measure appropriate to the quantity distributed and calculated on the basis of the dry weight of the final product, as in the following examples:

• General example:

Do not apply more than 1 kg of compost per square meter in one year or more than 5 kg of compost per square meter for every 5-year period

• Examples for a 5 kg bag (30 L) bag:

It is recommended that the contents of this bag be spread overan area not lessthan 3 m2eachyear.

It is recommended that the contents of this bag be spread to a maximum depth of 1 cm each year or a maximum depth of 5 cm for any 5-year period.

• An expression that the user's failure to comply with the above recommendation may, in some cases, cause metals in the receiving soil to accumulate concentrations beyond what is considered acceptable.

• A statement that the product should not be used in soils with high concentrations of copper or zinc.

• In cases where compost is sold or distributed in bags, the necessary information must be clearly written in letters at least 5 mm high in the bag. This size can be reduced to 3 mm in height for bags of 10 L or less.

• The Federal Fertilizers Act and regulations also set labeling and application rate requirements for compost sold.

Part III - USE OF COMPOST

• This section describes, in addition to those described in Section II, the permitted uses for all types of compost and related compost quality factors.

4.0 Determination of Appropriate Use

• Compost has many benefits. He:

• returns nutrients to the soil

• improves soil structure

• helps the soil to maintain moisture

• suppress some plant diseases

• contributes to healthy soil ecosystems

• Using compost can reduce the need for fertilizers and pesticides and helps save water. However, compost users should be aware that compost will be used as a soil reinforcement instead of soil. Frequent and high application rates of compost can, in some cases, lead to the accumulation of metals and other trace pollutants in the soil over time.

• Note: In addition to meeting quality standards and usage restrictions, all compost products sold on the Canadian market must also meet the safety, microbial quality, efficacy and labeling requirements of the federal Fertilizers Act and regulations administered by the Canadian Food Inspection Agency.

4.1 Category AA and Compost

• Although categories AA and A are exempt from compost transport and use approvals, all compost is considered a nutrientunder NMA. When applied as a nutrient to farmland where there should be a Food Management Plan (NMP) and/or NASM Plan, compost must be applied in accordance with NMP or NASM Plan and O. Reg. 267/03.

4.2 Category B and Other Composted Materials

4.2.1 Category B Compost

• Unlike AA and A compost, Category B compost is not an exempt waste and is thereforesubject to Section V of EPA and Regulation 347, including transportation and managementapprovals. However, where Category B compost is applied as a nutrient to farmland and meets O. Reg. 267/03 requirements under the NMA, it is exempt for use from section V of EPA and Regulation 347 (still requires approval for transportation).

• The use of Category B compost is generally not allowed for areas with regular human contact, such as parks or residential areas. However, Category B compost can be usefully made available through the following applications:

• Organic soil conditioning - Category B compost can be used as organic soil cream in various non-agricultural applications (e.g. land reclamation, mining rehabilitation, reforestation, etc.) subject to ECA for an organic soil treatment site that allows the spread or application of Category B compost.

• Use of agricultural land - Category B compost can be usedas a nutrient on agricultural land subject to O. Reg. 267/03requirementsmade under the NMA.

• For more information on the application of Category B compost on farmland, please see:

• NMA,

• Food Management Protocol,

• NASM Fragrance Guide,

• Food Management Tables Document and

• Sampling and Analysis protocol.

• Additional information on the use of nutrients on agricultural land can be found on the Ministry of Agriculture, Food and Rural Affairs non-agricultural source materials page.

• Landfill cover - Category B compost can be used as a daily, intermediate cover at a landfill with an ECA (waste disposal site) that allows category B compost to be used as a lid.

4.2.2 Other Processed Organics

• Processed organic material that does not meet the Category AA, A or B requirements specified in Section 2 of the Standards is subject to all ministry approval requirements for transportation, use and disposal. For more information, contact your local Department of Region or Territory Office.

5.0 Additional Compost Properties

• In addition to the compost standards specified in Section II of the Standards, a number of other features related to the effect of compost on plant growth by compost producers and end users should be taken into account. These considerations are not regulatory standards. These are only available for additional information.

Below are some examples of compost properties with typical desired ranges. Depending on the intended use, some parameters may be accepted or even preferred outside these ranges. Compost manufacturers are encouraged to communicate with end users to ensure that compost is used in the most useful way.

Characteristic	Value
Particle Size:	< 25 mm
Moisture:	40% - 50%
Total Organic Matter:	> 30% on a dry weight basis
C/N Ratio:	< 22
pH:	5.5 - 8.5
Sodium (Na):	< 2% on a dry weight basis
Soluble Salts (of a saturated paste):	<4 mS/cm

• Salts in the form of mineral ions are naturally present in all composts and are normally concentrated a little during composting. Since plants have different sensitivities, salt can create limitations for soil application. End use will determine what limitations, if any, may be related to the salt content of the compost. For example, the material to be used as an environment for germination of seeds should be 2 mS / cm < soluble salt content. Laboratory service providers can assist with salt and/or sodium content analysis.

• Category B compost applied to agricultural land as NASM under the NMA is limited to the maximum annual sodium loading limit to protect soil health. Please see thecurrent version of O. Reg. 267/03.

• The Compost Quality Association (CQA) can be a useful resource for determining the appropriate salt content for various uses. CQA is a voluntary program created by the Canadian Compost Council and compost manufacturers using standardized test methodologies and uniform operating protocols to increase customer confidence in compost selection and use.

• Some raw materials may contain chemical compounds (in addition to the metals listed in Chapter II, Table 3.2) that may have a negative impact on the environment and human health. Organic chemicals such as polycyclic aromatic hydrocarbons can enter the waste stream from a number of industrial and domestic sources.

• In cases of concern that these organic chemicals may be found in raw materials, the Ministry Director may request that feedstock and compost be monitored at the plant for certain chemicals, in addition to those listed in Section II, Table 3.2, through a facility's ECA. The need for additional monitoring of compost can be stopped by the Manager if the

acceptable quality is consistently shown and shown. Monitoring may need to be restarted when organic waste source or handling conditions are changed.

5.1 Additional Maturity Indicators

• In addition to the compost maturity standards described in section II, section 3.6, the following list includes other tests and features that can be used to measure compost maturity. While these tests are unacceptable to demonstrate compliance with regulated maturity standards, they can help with operational decision-making:

1. A significant reduction in odor foul odors is an indicator of incorrect process controls and incomplete decomposition.

2. A reduction in volatile solids (i.e. organic matter) during composting - typically about 60% compared to raw material

3. Carbon-nitrogen ratio less than 22:1

4. Phytotoxicity:

• seed germination germination rates should not be adversely affected, and the harvested weight of plants grown in a compost-modified environment (e.g. sweat) is at least 90% of the harvested weight of the control sample, after 6 days or

• plant growth over a longer period of time compared to growth in a typical greenhouse or nursery growing environment for a particular plant species.

5. Reduced biological activity, as shown by spontaneous heating with an increase in temperature at less than 8 degrees Celsius of ambient temperature:

• measured on site for three days

• Within 0.5 meters of the stack

• under aerobic conditions (on the same day as turning)

• In case of maturity testing using spontaneous temperature increase, the size of the sample should be large enough to provide a reasonable simulation of the conditions in a properly functioning compost stack. The size, at least 2 meters in diameter and 1.5 meters high, is large enough to provide sufficient self-insulation to ensure that the air is emitted at the stake and the heat produced in the pile is retained.

• In addition to these indicators, numerous commercial test kits are available for field testing purposes to measure the maturation of compost over time. These field tests can serve as effective pretests before running the required standardized tests.

• To improve accuracy, compost maturity testing should be carried out under the following conditions:

Compost:

40-55% humidity

pH 5.5-8.5.

• Ambient temperature, Above 8 degrees Celsius

5.2 Odor Management

• In addition to producing high-quality compost, odor reduction is an important purpose of composting plant operation. Compost plant owners/operators are responsible for ensuring that their processes are designed and operated to minimize odor generation at every stage of processing. Demonstrating an effective odor management plan is a critical part of plant approval considerations.

• Effectively processed and ready-to-use compost should not create bad odors. It must have a "earthy" aroma.

Chapter IV Sampling and Analysis

• This Section sets typical requirements for raw material and compost sampling and provides guidance on laboratory analysis.

• All sampling and analysis required in an ECA is the responsibility of the owner/operator.

• Please refer to Appendix 1 for detailed guidance on raw material and compost sampling. Sampling procedures in this document are mandatory for the composting plant if it is included in an ECA by the Director.

6.0 Raw Material and Compost Sampling

• Plant operators should contact laboratory service providers for preferred sample preparation methods, sample containers and other materials that may differ from those described in this document (see detailed instructions in Annex 1).

6.1 General

• Composting plants must sample and analyze the parameters specified in Section II of the Standards tomeet the regulatory exemption criteriadescribed in Regulation 347. However, in some cases (depending on the waste flow, processing method or suspicion of the presence of toxic substances), the ministry may change the frequency of additional parameters measurement or analysis requirements in the ECA of the composting plant.

• Collecting a representative sample is the first step in the process of analyzing the physical and chemical properties of raw material or compost. Poor sampling or handling practices can render the most careful laboratory analysis useless.

• Samples submitted for laboratory analysis are composite samples created by mixing a series of grab samples taken from each compost. The composite sample is then reduced in volume to be sent to the laboratory. Compound sampling Appendix 1 is described in section A1.1.8.

• Recommended procedures for compost sampling are presented in Annex 1, section A1.1, and recommended procedures for sampling raw materials and compost are presented in Annex 1, section A1.2. Sample preparation methodology Annex 1 is presented in chapter A1.4. Compost sampling frequency recommendations are presented in Annex 1, section A1.1.2 and are based on the annual production rate and compost raw materials used.

• All sampling should be carried out according to a space-specific, well-documented sampling plan and Standard operating procedures (SOPs). The sampling plan should clearly specify the procedures for collecting space to use and sending labs. A written sampling plan is required to help ensure:

• field samples are representative of the sampled material,

• the results can be repeated and

• samples are collected, processed, and stored in a way that minimizes possible sources of contamination, bias, or errors.

• In the sampling plan, the procedures to be followed should also be listed in order for the quality of the collected samples to be acceptable. Care should be taken to prevent cross-contamination of samples throughout all sample collection and sample handling procedures. Sampling equipment should be carefully cleaned and clean sample containers should be used.

• The sampling plan must provide specific sampling instructions for each raw material and compost, including the frequency of sampling and the number of required laboratory submission samples. The laboratory that performs the analysis can help develop the sampling plan for the use of quality control samples (such as field replicas).

• The plan should reflect the characteristics of an individual facility. Additional information about sampling can be found in BNQ Industry Standard, CAN /BNQ 0413-200/2005, Organic Soil Air Conditioners - Compost.

7.0 Laboratory Analysis

• If any composting plant is large enough to justify an in-house laboratory with accreditation, it is very small. Appendix 2 of this document aims to assist compost plant operators with the selection of analytical methods and accredited laboratories to perform the necessary analytical tests.

• The methodologies used and the final results obtained for these analyses should be prepared by the ministry and all end users upon request. 267/03 O. Reg. Without these results, NASM cannot be obtained in an agricultural enterprise covered by O. Reg. 267/03.

• See Appendix 2 for guidance on laboratory selection and analytical methods. Laboratory procedures in this document are mandatory for the composting plant if it is included in an ECA by the Director.

Appendix 1: Raw Material and Compost Sampling

A1.0 Sampling Preparation

• The following equipment is recommended for compost and raw material sampling:

• clean hand shovel

• clean plastic bags, buckets or buckets large enough to contain 10 snatch samples of 1-3 liters each

• clean linoleum at least 2m x 3m

• Cleanable and disinfectable application arm between samples to divide the sample on the tarp

• clean sample containers (new plastic bags)

• marker to uniquely identify the instance (e.g. date, location, lot#, etc.)

• shovel to remove rejected materials from tarpaulin

• A clean area where the tarp can be laid so that compost can be mixed and processed is necessary to maintain the quality of the sample. This can be an asphalt area, the area of a building or a sheet of plywood.

A1.1 Sampling Compost for Quality Determination

A1.1.1 General Considerations

• To meet the compost standards in Section II, compost must be analyzed for all mandatory parameters before leaving the compost plant. The results of this analysis should be made available to all end users upon request. For category B compost to be applied as NASM, generators are required by O. Reg. 267/03 to present the results of the analysis to the NASM recipient.

• As required by Section II, accepted compost samples must be taken from compost to meet the maturity requirements offered in section 3.6. Samples submitted for laboratory analysis must represent the form in which the compost will be shipped or sold. For example, if compost is to be scanned before it is shipped or sold, the laboratory sample must also be scanned before analysis. Testing for metals and pathogens should only be completed after passing the maturity test required under material Part II, section 3.6.

• Those who wish to land should apply category B compost as NASM under O. Reg. 267/03 and apply to this regulation:

• NASM Fragrance Guide,

• Food Management Tables Certificate,

• Food Management Protocol and

• Sampling and Analysis Protocol.

A1.1.2 Sample Frequency

• Usually the minimum number of compound samples required is described in Table A1, depending on the annual production of a plant during the production period. Composite samples should be created from independent grab sample sets and all samples should be sent to a laboratory for analysis.

• The sampling frequency can consist of multiple separate batches or multiple compost, provided that the properties of each batch are similar. Composite samples must be formed from compost batches with similar properties. In cases where parties are derived from significantly different raw materials, separate samples need to be collected and analyzed, unless previous analyses indicate that the concentration of mandatory parameters in each of the finished products is similar.

Additional sampling may be required by the Manager for materials using well-characterized raw materials.

Table A1: Baseline Sampling Frequency of Compost (Metals, Pathogens, Maturity and Foreign Matter)

Compost Produced Annually (wet tonnes)	Baseline Number of Samples (per year) [1]	Minimum Additional Samples for Compost Containing Human Body Waste Feedstock [2] (per year)
<5000	4	+2
5000-15000	6	+2
15000-50000	12	+4
>50000	+ 2 more samples for every additional 10,000 tonnes above the 12 Baseline samples.	+ 4 additional samples above the Baseline Number of Samples

A1.1.3 Sampling Frequency Setting

• If the raw material remains consistent and composting properties and analytical results are consistent, the operator may request a reduction in the number of samples required through an application to make changes to the plant's ECA.

• the basic sampling frequency (Table A1) can be reduced when monitoring results (or 12 consecutive samples) over a two-year period show consistent and acceptable compost quality (for example, when the test results for each sample < 80% of the metal standards in Table 3.1). Once acceptable consistency is demonstrated, the sampling frequency can be reduced by 50%. However, if any sample fails to meet any of the quality standards, the basic sampling frequency in Table A1 should be maintained until all results of the six consecutive samples are below 80% of all quality standards in Table 3.1.

• In the case of pathogen standards in Section II, section 3.4, samples are considered consistent, and the basic frequency of sampling can be reduced when the test results are in the same order of magnitude and there are no failures (or 12 consecutive samples) after 2 years of monitoring.

• When there is a change in compost properties, including raw materials, sampling should return to Basic frequencies until consistent and acceptable compost quality is shown again according to the above requirements.

• A facility must certify test results that demonstrate consistent and acceptable compost quality in accordance with mandatory quality standards (Part II). Such documents are usually required to be retained by the property for five years or as otherwise stated in the facility ECA and made available to the ministry upon request.

A1.1.4 Sample Error Policy (Try Again)

• If the result obtained from any compost sample does not meet the composting standards for metals and pathogens specified in Section II, Table 3.1 and section 3.4 in the compost category produced, additional samples must be taken from that batch until at least 4 consecutive samples meet the criteria, and the arithmetic average of all samples meets the standard in Table 3.1. If these conditions are not met within 12 additional instances, the batch job will fail.

• The documentation of the test results should be preserved and made available to the ministry upon request.

A1.1.5 Sample Size

• Each composite sample consists of at least 10 randomly selected grab samples of the same volume, each about 1 to 3 liters. Two composite samples should be created from sets of independent grab samples taken from different places in compost. One of the samples

should be prepared for shipment to the laboratory, while the other should be stored in the field for at least six months for repeated analysis if necessary. The Ministry may require additional testing with this duplicate sample and therefore this sample must be properly handled and stored. It is important that the composite samples are small enough to allow them to be easily mixed.

A1.1.6 Sample Locations

• To ensure that laboratory submission samples are representative of a large number of compost, the grab sample locations must be selected accordingly. Sampling locations that may not be representative of a large number of compost, such as the surface or base of compost stacks, should be avoided.

• Operator bias should be avoided in the selection of sampling locations. Grabbing sample locations must be determined by random selection of subdivision areas from a drawing of the lot to be sampled, or by sampling at regular intervals from a randomly selected starting point. Random selection of sampling locations is not equivalent to a random selection process. A systematic method should be used to select random, neutral places.

A1.1.7 How to Take Random Pick-Up Samples from Multiple Compost

• Grabbing sample locations should be randomly selected from many compost following these steps:

1. Choose a starting point (such as the windshi a windshi a head).

2. Measure the circumferle of a large number of compost (this can be done by pacing).

3. Divide the total circassion into 10 parts, the number of grab samples to be collected to give a distance range length of 1.

4. Create a random two-digit number[2] between 0 and 1 and multiply that number by the distance range by rounding it up or down as needed.

5. Accelerate from this distance from the starting point to find the first sampling location.

6. At the midpoint between the top and bottom of the lot, dig about 1 meter into the compost using a small shovel or similar tool.

7. Collect a 1-3 liter container sample and place the snatching sample in a plastic bucket or bucket.

8. Walk an equal distance to the distance range and collect a second grab sample in equal volume to the first and combine it with the first grab sample in the plastic bucket or bucket.

• Repeat until all 10 snatch samples are collected.

A1.1.8 Compound Instantiation

• Proper mixing of composite samples ensures that all materials collected in the snatch samples are equal to the likelihood that they will be selected for the laboratory submission sample. Various tools and techniques can be used:

• place the composite sample on a small tarpaulin and then "roll" the tarpaulin in different directions

• rolling the composite sample in a plastic barrel or drum with a clogged lid

• place the composite sample on a clean surface and shovel the material repeatedly from the outside into the stack, and then straighten the stack

• coning and quartering (see A1.4)

A1.2 Sampling for Feedstock Characterization

A1.2.1 General Considerations

• The purpose of sampling feedstocks, modifications and compost is to obtain the necessary information to improve or control the composting process or to confirm compliance with legal requirements. The necessary information depends on the types and sources of raw material materials. Sampling plans meet the sampling requirements of each raw material accepted for composting at the plant and include measures to deal with waste that may have high metal levels or other contaminants.

• When accepting raw material materials, operators should take reasonable steps to ensure that the resulting compost meets the requirements of Categories AA, Category A or B compost. This involves accepting only raw materials, for which characteristics are known, especially according to metal concentrations.

• Many raw material materials are heterogeneous mixtures of large particle size and cannot be effectively sampled without prior size reduction and mixing.

A1.2.2 Sample Frequency

• Operators can use the carbon content of raw materials, nutrient content, moisture content, physical structure, metal content, etc. To ensure that the raw material quality standards in Section II are met, characterization must be carried out before the receipt of waste (raw material or fluffing agent) in the compost plant, and repeated when changes in the production, processing or storage of waste affect any of its properties.

• Sampling and analysis can be done by the operator or the generator of the raw material.

• In some cases, operators may choose to rely on published information for well-studied waste (e.g. leaf and garden waste, food waste, wood, etc.).

• The director may require that raw materials, moisture content, bulk density, heavy metals or other contaminants that are not well characterized and vary in C:N ratio are subjected to laboratory testing program. This includes waste such as biosolids (sewage or pulp and paper mill processing), domestic septage and industrial, commercial and corporate (IC&I) sludge. The manager may ask the operator to create a more detailed laboratory testing program for these wastes.

• In general, raw materials that are not well characterized should be analyzed:

• before receipt,

• every 1-2 months of the first year of receipt and

• if the characteristics have changed.

• If waste characterization is relatively consistent, the operator can request a reduction of testing requirements from the ministry.

• If the following does the following, the Administrator may require an increase in sampling frequency:

• the average concentration of any regulated metal is more than 80% of the concentration limit for the raw material of the compost category produced (see Chapter II, chapter 3.3); and

• the amount of a particular raw material is more than 50% according to the weight of all materials accepted for composting; or

• a change in the properties of the raw material is expected due to changes in the collection, processing and storage of the material or in the production facility.

• Where increased sampling frequency is guaranteed, sampling should be frequent enough to demonstrate the operator's diligence in managing composting and ensure that the resulting compost meets the requirements for producing Category AA, A or B compost.

A1.2.3 Sample Size

• Raw material samples should be composite samples consisting of at least 10 cap samples of the same volume, about 1 to 3 liters each, as described in section A1.1.5.

A1.2.4 Sample Locations

• Where possible, raw material materials should be sampled from the output of size reduction or mixing processes instead of piles. Especially heterogeneous, large particle size raw material materials should be reduced and mixed before sampling. Two composite samples should be created from independent sets of grab samples.

• When sampling from the output of processing operations, it is necessary to use a randomization process to avoid bias in the selection of capture sample collection times. Two approaches are available:

• the timing of each pick-up instance selection can be random; or

• the start time can be randomly selected with collections of grab instances tracked at uniform time intervals.

• In some cases, it may not be possible to collect snatch samples from conveyor discharges. For raw material stacks, follow the instructions for selecting the random pick-up instance locations provided in section A1.1.7.

A1.2.5 How to Obtain Snatch Samples from Incoming Raw Materials

• Impartial sampling of raw material materials received throughout the year requires random selection of sampling time. To randomly select sample times from a continuous stream of material , such as the output material from the size reduction or scanning process, follow these steps:

1. Define the time that the laboratory shipping sample is required and express it in the appropriate units, for example, the number of truck loads expected within a certain period of time or the required to deliver a predetermined amount of material.

2. To give the length of a cap sampling interval, divide the period by 10 equal ranges, the number of grab samples to collect.

3. Create a random two-digit number and multiply it by the grab sampling range by rounding up or down as needed to define the starting range.

4. In the starting range, collect a container sample of 1-3 liters and place it in a plastic bucket or bucket.

5. Wait for a sampling interval and collect the second grab sample by combining the second cap sample of equal volume with the first grab sample in the plastic bucket or bucket.

6. Repeat until all 10 snatch samples are collected.

• Creating a composite sample of raw material is the same procedure as creating a composite sample of compost (see section A1.1.8).

A1.3 Records

• Owners or operators will normally need to keep a logbook that records all sampling events. Typically, analysis records must be kept for at least five years after the disposal of compost, or for another period specified in a regulation or an ECA condition. This information must be submitted to the ministry upon request.

• Sampling plans should detail the types of field observations to be performed during sampling. Field personnel should be diligent in taking field notes of sampling locations, sample depths, unusual odors observed, or other observations that could potentially help in interpreting analytical results. These records should also be stored for five years or more after disposal of the compost.

A1.4 Laboratory Submission Sample Preparation

• The preparation of the laboratory submission sample involves methodically reducing the volume of the composite sample (10-30 liters) to only the amount required for the laboratory submission sample (about 1-3 liters). An appropriate size reduction methodology is required to ensure that all material in the composite sample is equal to the probability of being selected for the laboratory submission sample.

• Cone and quartering are one of the easiest methods to reduce the volume of samples. Coning and quartering involve mixing the snatch samples and creating the mixture into a stack or cone. The cone is then flattened and divided into four quarters, quarters are separated and the opposite quarters are combined to form an example of reduced volume.

This condensation and quartering process is repeated until the desired sample volume is obtained.

• Coning and quartering include the following steps:

1. It forms a "cone" in the middle of the tarpaulin and divide the cone into four "quarters", sliding a stick under the tarpaulin (such as a broom or shovel handle) and lifting it to split the cone in half, then divide the cone into quarters on the other side.

2. Flip a coin to decide which two diagonal quarters are accepted and which are rejected.

3. Use a shovel to remove the rejected two quarters from the tarpaulin and combine the remaining two quarters.

4. Repeat the process and cut it in half once again, until it is up to 5 to 10 kg or twice what the laboratory requires.

5. Reject one half (or keep it as a duplicate sample) and place the other half in a clean new plastic bag to send to the lab for analysis.

6. The other half of the composite sample can be stored and used to validate analytical results or sent to a different laboratory for analysis.

• A laboratory submission sample of one to two kilograms should provide enough material to allow for a wide range of physical and chemical analyses, and, if necessary, provide an amount for retesting.

A1.4.1 Sample Containers

• Plastic "zip-lock" bags or other clean plastic or glass containers without metal contact should be sufficient for most compost sampling activities.

• Analysis for some parameters may require containers other than clean plastic bags. For example, for pathogen analysis, glass sample containers with special lining covers may be required for selected chemicals such as pre-sterilized and sealed containers and mercury. Operators must confirm container requirements with the targeted analytical laboratory before collecting samples.

A1.4.2 Sample Processing and Sending

• Proper sample processing requires that a chain of custody form be filled out and presented with a Laboratory Submission sample. This includes, for example, a description and analytical requirements. Chain of custody forms are provided by the laboratory.

• Laboratory submission samples should normally be in the cooler with an ice pack and arrangements should be made for delivery to the same or the next day. Laboratory submission samples should not be kept in place.

• Samples for analysis of volatile components (e.g. mercury or organic chemicals) may require separate use to ensure that the analytical sample represents the source. For special handling procedures, the analysis laboratory should be consulted.

• Samples for E. coli and Salmonella testing should be taken by the laboratory and analysis should be initiated within 30 hours of taking the sample.

Appendix 2: Laboratory Analysis

A2.0 Selection of Laboratories for Compost Analysis

• To meet the mandatory standards for compost in Section II (for metals, pathogens, foreign and sharp foreign matter and compost maturity), owners or operators must select laboratories accredited by an internationally accredited accreditation body that accredited laboratories under the General Requirements for the Adequacy of ISO/IEC 17025:2005 Testing and Calibration Laboratories, which are changed from time to time. Includingthe Canadian Council of Standards or the Canadian Laboratory Accreditation Association. Indexes of accredited laboratories are available on the websites of these organizations. Accreditation does not impede the possibility of auditing laboratory data by the ministry.

• The use of accredited laboratory analytical methods is also normally necessary for the mandatory parameters in Section II, part 3, as mentioned above. Analytical methodologies are recommended in the A2.1 section below.

• Additional information on analytical method performance requirements (for analysis of eleven regulated metals and pathogen testing) is provided by changing the General Food Management Regulation OMAFRA/MOE Sampling and Analysis Protocol, O. Reg. 267/03(see reference in Annex 5).

• For in-house laboratory analyses, compost analysis for routine test parameters such as moisture content, temperature, organic matter and maturity phase (as discussed in Section III, section 5.1), the laboratory may need to have documented standard operating procedures (SOPs) for each measurement or test performed. This ensures that the facility maintains the consistency of the operation.

• All plant laboratories must have an official written method for all analyses of their samples, including internal and accredited laboratories. Consult the laboratory service provider for detailed method information about the contracted analytical tests.

• The results of laboratory analyses are used to determine compliance with the standards. Therefore, it is essential that all analytical methods are well documented, controlled and consistently implemented, and that appropriate quality assurance and quality control procedures are carried out.

A2.1 Analytical Methodologies

• Acceptable analytical methods for eleven regulated metal and pathogen testing are described in O. Reg. 267/03Sampling and Analysis Protocol. Note that E. coli and Salmonella analyses should be initiated within 30 hours of sampling.

• Analysis of mature compost respiratory rate, BNQ Industry Standard, CAN/ BNQ 0413-200/2005 Organic soil creams - Should be carried out in accordance with the procedures specified in compost. The BNQ Standard document also contains acceptable methods for analyzing additional parameters such as moisture content, organic matter, foreign and sharp foreign matter content.

• Those who wish to apply Category B compost to agricultural land as NASM under O. Reg. 267/03 should apply to this regulation and its supporting documentation. Additional parameters, such as nutrients, will need to be tested.

A2.2 Record and Report Results

• The results of all laboratory analyses are used to determine compliance with the Standards. Typically, analysis records must keep the propensity of compost for at least five years, as described in Appendix 1, chapter A1.3. If Appendix 1, as specified in section A1.1.1, is to be applied on agricultural land as a Category B compost nasm, analytical results should be provided to the person receiving the nasm material.

Appendix 3: Dictionary

Negative Impact

EPA section 1 is more than just one of the following statements under "adverse impact": (a) the quality of the natural environment, (b) damage or damage to property or plant or animal life, (c) harm or material inconvenience to any person, (d) adverse impact on the health of any person, (e) deterioration of the safety of any person, (f) making any property or plant or animal life suitable for human use, (g) loss of use of the property normally and (h) interference with the normal execution of the work.

Aerated Static Pile

A composting method in which a static compost stack or windshistines are built on a perforated pipe grille and ebbing agent (such as wood chips) and/or compost layer. Fans are used to force (inject) or pull air into the stack (induction) and support aerobic decomposition. The pile can be covered with a layer of compost and/or wood chips to filter out fragrant compounds and thus maintain a sufficient temperature to destroy pathogens.

Aerobic

Composting conditions characterized by the predominance of micro-organisms that require the presence of oxygen.

Agricultural Waste

In Regulation 347,section 1, under the EPA,"agricultural waste" means waste produced by a farm operating activity, but does not include:

a. human body waste, toilet or other bathroom waste, waste from other showers or bathtubs, kitchen waste from liquid or water,

b. Article 53 of the Water Resources Act.

c. A dead farm animal in the sense of Regulation 106/09 (Disposal of Dead Farm Animals) made under the Food Safety and Quality Act 2001, or a dead animal regulated in the sense of 2001, 2001 regulation 105/09 (Disposal of Deadstock),

d. Inedible materialor inedible materialin the meaning of Regulation 31/05(Meat) made in accordance with the Food Safety and Quality Act, 2001 or 2001

e. Any material condemned or obtained from a carcass in an organization registered under the Meat Control Act (Canada);

The "farm operation" activity means:

1. Breeding, producing or breeding farm animals.

2. Production of agricultural products including greenhouse plants, maple syrup, mushrooms, nursery stock, tobacco, trees and grass lawns.

3. Processing by the operator of the farm enterprise of anything specified in paragraphs 1 and 2, in which the processing is primarily related to products produced from agricultural, aquacultural or horticulture operations.

4. Use by the operator of the farm enterprise to transport everything specified in paragraphs 1 and 2, where the use of means of transport is primarily related to agricultural, aquaculture or products produced from the horticulture enterprise.

Amendment

When referring to compost, the change refers to additional material added during composting or during compost to provide the necessary properties by certain customers, such as product mass, product nutritional value, product pH and mixtures of soil materials. The change also means any material, such as compost, lime, gypsum, sawdust or synthetic conditioners that are worked on the soil to make it more productive.

Anaerobic

Conditions characterized by the predominance of micro-organisms that develop in the absence of oxygen.

Biodegradable Material

Organic materials that can be divided into simple, stable compounds, usually in the presence of moisture and oxygen, by naturally occurring bacteria and other micro-organisms.

Biosolids

Contains:

• Sewage biosolids - solid or semi-solidresidues from the treatment of sewage in a licensed treatment plantunder OWRA.

• Pulp and paper biosolids - solid or semi-solid residues obtained from the treatment of wastewater from products such as pulp and paper, recycled paper or corrugated cardboard.

Bulk Density

A feature of the raw material mixture or compost, which is measured by dividing the mass of the material by the volume of the material.

Fluff Agent

The fluffy substance usually means carbonasous material, such as wood chips or shredded garden decorations, which are added to the compost system to maintain airflow by reducing precipitation and compression.

Compost

Compost is a stabilized hummus, a robust, mature product produced by aerobic composting that meets the composting standards of this document.

In Regulation 347,section 1, under EPA "composting", it means the treatment of waste by aerobic decomposition of organic matter with bacterial effect for the production of stabilized humus.

Pollutants

Under EPA section 1, "pollutant" means solid, liquid, gas, odor, heat, sound, vibration, radiation or a combination of human activities that may directly or indirectly cause a negative impact. "Pollutant" is also used in this document to refer to foreign materials (dirt, heavy metals, plastic residue, etc.) that will make it difficult to compost a raw material or reduce the value of the final compost.

Domestic Septage

Only human body waste, toilet or other bathroom waste, waste from other showers or bathtubs, kitchen or sink waste from liquid or water, or household wastewater from a holding tank or septic tank with laundry waste.

Raw materials

Raw material means waste containing primary biodegradable organic matter used for compost production. Supplements, including additives, changes and fluffy substances, are not raw materials.

Manure

Natural or synthetic material used to add nutrients to the soil. Most chemical fertilizers contain a defined mixture of nitrogen (N), phosphorus (P) and potassium (K).

Foreign Item

Any issue arising from human intervention that consists of organic or inorganic components such as metal, glass or plastic that can be found in compost. The foreign substance does not contain mineral soils, woody material and rocks.

• Sharp Foreign Substance - Any foreign substance that may cause harm or injury to people and animals during or arising from its intended use. Sharp foreign matter may consist of, but is not limited to: metallic objects or pieces of metallic objects, e.g. utensils, fixtures, electrical cables, pins, needles, staples, nails, bottle caps, glass and porcelain or pieces of glass and porcelain, e.g. containers, dishes, glass partitions, electric bulbs and tubes, mirrors.

Human Body Waste Raw Material

Human body waste means raw materials obtained or contained from the human body, including raw materials, sewage biosolids, domestic septage and diapers.

On-board composting

Various groups of composting methods in which composting materials are located in a container. The purpose of the ship is to help maintain optimal conditions for composting. Types of on-board systems include: rotating drum systems; horizontal channels are completely or partially closed; vertical (silo) configurations; or bulk container systems.

Leach

Liquid that passes through (and sometimes comes out) of a compost heap as a result of rain and other water flowing through composting material.

Leaf and Garden Waste

It contains waste consisting of natural Christmas trees and other plant materials but tree limbs or other woody materials that exceed 7 centimeters in diameter.

Maturity

It exhibits a compost state caused by the thorough decomposition of raw material materials, and as a result, very limited biological activity, which allows the storage and processing of compost without adverse effects, including aggressive odors, and now its use without risk to plants from phytotoxic compounds.

Municipal Waste (in Reg. 347,section 1, under the EPA)

tool:

a. whether it is owned, controlled or controlled by a municipality,

i. hazardous waste,

ii. liquid industrial waste or

iii. gas wastes and

b. solid fuel, waste or not, is partially or completely derived from the waste contained in the substance (a).

Organic Soil Treatment Site

A site with an ECA that allows processed organic waste to be incorporated into the soil.

Organic Waste

Waste containing carbon-based compounds. In the context of composting, this term is usually used especially for food residi, lawn clippings, garden waste, etc.

Pathogen

Organisms, including certain bacteria, viruses, fungi and parasites that can produce infection or disease in a sensitive human, animal or plant host.

Quality Assurance (QA)

An operating and procedural system that allows the manufacturer (i.e. data) of a product to consistently show that it produces a product of identifiable quality. QA consists of activities that guarantee that all necessary QC activities are defined and carried out in accordance with the protocol. QA is primarily a controller responsibility.

Quality Control (QC)

Description of specific activities carried out to maintain quality in sample collection, analysis and recording. QC is primarily a scientific or technical function performed by research or technical personnel.

Quality Management (QM)

The process of ensuring the creation of a complete and complete QA and QC program, the correct evaluation of the total program and the appropriate actions when satisfactory quality is not achieved. QM includes specifying what constitutes acceptable quality, detailing the means by which the specified quality is determined to have been achieved, and defining what actions to take when the desired quality is not met. QM is normally the responsibility of project management.

Sewer

Underthe OWRA,"sewage" includes drainage, rainwater, commercial waste and industrial waste, and other substances or substances specified in the regulations.

Sludge

A semi-solid substance consisting of built-in sewage solids, together with various amounts of water and dissolved materials produced from municipal or industrial wastewater treatment plants. Soil Cream - any material added to the soil to usefully improve the physical or chemical properties or biological activity of the soil.

Resource Separation

The use of this term in this document refers to the separation of organic substances used to facilitate composting from municipal waste at the point of production.

Fixity

The term 'stability' is sometimes used interchangeably with 'maturity'. However, as a generally accepted meaning, 'stability' refers only to reduced biological activity. It is a subset of maturity. Compost may appear stable as a result of nutrient imbalance or lack of moisture, and may not have extensive decomposition, and can become 'unstable' if any of the limiting conditions are removed. All mature compost is stable, but not all stable compost is mature.

Thermophilic Phase

A period characterized by the predominance of active micro-organisms developing in the temperature range from 45 °C to 75 °C in the composting process.

Windrow Composting

A composting method in which the material to be composted is stacked on long piles with triangular sections. Both rotated and static wind machine systems are used for composting. In the first, the windshis are periodically demolished and rebuilt or mechanically rotated (the outer layer of the original windshi a windshi adversary becomes the interior of the rebuilt windshished), to ventilate and mix organic waste, speed up the decomposition process and reduce odors.

Wood

Wood suitable for composting usually includes timber, tree trunks, tree branches or other similar woody materials. It does not contain material contaminated with wood, glue, paint, preservatives or other materials or connected to non-wood material (for example, particle board, chipboard, plywood).

Appendix 4: Other Relevant Regulations and Standards

Federal Fertilizers Act

• Fertilizer law is the legal authority of the Canadian Food Inspection Agency to regulate and monitor fertilizers and supplements sold or imported to Canada. This protects farmers and the general public against potential health hazards and marketing fraud and ensures a fair market. It regulates compost as a change in soil or when the plant is sold as a fertilizer with nutritional claims.

• Some fertilizers and supplements are exempt from the Laws and Regulations, such as animal and vegetable fertilizers sold in their natural state, fertilizers and supplements for export and labeled, potted soil (unless they demand nutritional/supplement value) and supplements designed for experimental purposes.

7.4 Biodegradable Particulate Matter

• Compost must not contain material of the size or shape that may cause human or animal injury or damage to equipment.

The biodegradable particle content of compost larger than 8 mesh screen sizes will not exceed the following:

Parameter	Concentration (% dry wt)
Plastic	1.0
Other (total)	2.0

7.5 Stability

• In Annex 3, various tools are recommended to determine stability. Any of the methods can be used alone or together. If stability determination is not carried out, compost should be improved for a period of six months.

• Excerpt from Appendix 3:

Fixity

• There is no definitive definition of biological stability related to composting. Stability is proportional to the retention time under appropriate working conditions and waste characteristics. The required degree of stability may depend on the last use of compost. Full stability cannot be easily achieved and is probably undesirable, as there will be no land change value due to low or non-existent organic content.

• On the other hand, compost, which has a high potential to continue decomposition, can adversely affect crop growth due to toxic effects and nitrogen depletion. Therefore, there is a level of stability that must be met depending on the final use of the product and the fact that the compost can be stored or processed without any distress effects or conditions.

• Relative stability can be determined by using indicators such as volatile solids destruction, spontaneous heating, oxygenation rates, toxin production, carbon-nitrogen ratio, seed germination and growth test and redox potential. These tests are not necessarily conclusive or conclusive, but show the relative stability of compost compared to raw feed.

Appendix 7: Method of Determining The Alternative Application Rate for Category A Compost

• PART II of this document sets the requirements for labeling Category A compost. Labeling should set an application rate of less than 8 tons/ha/year (or equivalent) or less than a rate recommended in accordance with the method specified here.

• The use of this method is recommended for Category A compost, where metal concentrations are significantly lower than the permissible metal concentrations in Column 3 of Table 3.1 in Section II.

• For this method to be used to create an alternative application rate, there must be at least 6 samples for each compost group using the same raw material, raw material mixing ratio and processing method. If the batch exceeds 5,000 tons, at least 2 additional samples should be taken and used in the calculation for each additional 5,000 tons. These are minimum sampling requirements; however, more instances can reduce standard deviation and therefore lead to an increased application rate. However, if more samples are taken, all available metal data should be included in the calculation of the average in order to achieve unbiased results. After three batches of compost, the frequency of sampling can be reduced by 50%, if the calculated application rate has not changed more than 10% between any two batches.

• Method:

1.Set the arithmetic average of sample concentrations for each of the 11 metals listed in Table 3.1 of Table II as follows:

• mean = the sum of concentrations ÷ the number of samples, that is:

• $m = [\Phi(xi)] \div n$

• Where:

• m = average

• n = number of sample results

• xi =i. value of example (metal concentration)

2. The standard deviation of the samples is determined for each of the 11 regulated metals. The standard deviation is the square root of the sum of all differences between the average value and the instance value, and after you pull them, the total number of instances is divided by minus one.

• s = [Φ((xi-m)2)÷(n-1)]1/2

• Where:

• s = standard deviation

3. Add average and two standard deviations to achieve a reasonable estimate of the maximum concentration for each of the 11 regulated metals.

• REM = m + 2s

4. The maximum application rate (MAR) for each metal can then be set to 8 tons/ha/year multiple of the metal concentration allowed in Column 3 of Table 3 in PART II (AMC) and divided into REM:

• that is, MAR = 8 (AMC/REM) tons/ha/year

• For each of the 11 regulated metals, the above method must be followed. The recommended application rate to be determined on the Category A compost label will be less than the lowest of the 11 maximum application rates calculated above or less than 8 tons/ha/year as specified in Section II.