Building the Value of Compost
Original Mandate

Advance Organics Recycling
Feed the Soil

Recycle your organics. Return Life to your soil.

For more information: 1-877-571-4769 • info@compost.org • www.compost.org
Organics are now the #1 material recycled in Canada.
Current Mandate

Advance Compost Quality
Existing Regulations for Compost Quality

- focused on environmental health & safety
- absence of agronomic performance perspective
The Compost Quality Alliance (CQA) is a voluntary program established by the Compost Council of Canada and the compost producers utilizing standardized testing methodologies and uniform operating protocols to improve customer confidence in compost selection and utilization.

**Key Elements of the Program**
- Standardized product sampling
- Uniform laboratory testing
- Appropriate product attributes and usage guidelines

**Benefits of the Program**
**To Consumers**
- Ability to select the right compost for the right use

**To the Compost Industry**
- Supports regulatory compliance
- Enhances compost market development
- Builds industry credibility and reputation

**How the CQA Program Works:**
- Open to all compost producers
- Focused on product versus process
- Participants follow prescribed sampling frequency and reporting methods
- Annual licensing arrangement to use CQA logo on packaging and product promotion
- CQA program managed by the Compost Council of Canada and marketed by both the CCC as well as CQA licensees

**The Specifics:**
- Compost facility signs up to be part of Compost Quality Alliance
- Frequency of product testing based on annual production volume (Table 1)
- Product samples submitted to CQA-accredited laboratory
- Product testing involves regulatory requirements as well as agronomic parameters
- Lab results reported back to compost producer and the Compost Council of Canada
- Product attributes to be communicated on an ongoing basis to product users in a prescribed manner (Table 2)
- If the compost product sample fails to meet analytical requirements, producer has the right to rework and resubmit for further testing. Inability to achieve satisfactory analytical results would lead to non-compliance.
- Annual license timeframe: September 1st - August 31st
- Annual license fee: $700 for CCC members; $1,000 for non-members (each licensee is also responsible for the costs of lab testing)

### Table 1: Composting Frequency

<table>
<thead>
<tr>
<th>Annual Compost Production</th>
<th>Frequency of Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5,000 tonnes</td>
<td>4 samples during production season</td>
</tr>
<tr>
<td>6,000 - 15,000 tonnes</td>
<td>6 samples during production season</td>
</tr>
<tr>
<td>More than 15,000 tonnes</td>
<td>12 samples during production season</td>
</tr>
</tbody>
</table>

### Table 2: Product Attributes Declaration

<table>
<thead>
<tr>
<th>Name of Product: Guaranteed Analysis:</th>
<th>Organic Matter %</th>
<th>Maximum Moisture %</th>
<th>pH</th>
<th>C/N ratio</th>
<th>Particle Size</th>
<th>Soluble Salts Na %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directions for Use:</td>
<td>Weight: kg (plus)</td>
<td>Volume declaration at discretion of producer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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## Compost Quality Parameters for the CQA

<table>
<thead>
<tr>
<th>USE</th>
<th>pH</th>
<th>C/N ratio</th>
<th>Moisture</th>
<th>Particle size</th>
<th>Soluble salts</th>
<th>%Na</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remediation</td>
<td>5.8-8.5</td>
<td>10-40</td>
<td>NA</td>
<td>&lt;2 inch</td>
<td>&lt;20</td>
<td>&lt;3%</td>
</tr>
<tr>
<td>Soil Amendment</td>
<td>5.8-8.5</td>
<td>10-30</td>
<td>NA</td>
<td>&lt;1/2 inch</td>
<td>&lt;6</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Landscaping</td>
<td>5.8-8.5</td>
<td>12-22</td>
<td>&lt;50%</td>
<td>&lt;1/2 inch</td>
<td>&lt;5</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Planting Media</td>
<td>5.5-7.8</td>
<td>12-22</td>
<td>&lt;50%</td>
<td>&lt;1/2 inch</td>
<td>&lt;4</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Turf Topdressing &amp; establishment</td>
<td>5.8-7.8</td>
<td>12-22</td>
<td>&lt;50%</td>
<td>&lt;3/8 inch</td>
<td>&lt;3</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Potting Soil</td>
<td>5.5-7.2</td>
<td>12-22</td>
<td>&lt;50%</td>
<td>&lt;1/4 inch</td>
<td>&lt;2</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

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The Players

- CFIA (Canadian Food Inspection Agency)
- Standards Council of Canada (SCC) → Bureau de normalisation du Québec
- Canadian Council of Ministers of Environment (CCME)
- Provincial Ministry of Environment
+ Compost Quality Alliance (Compost Council of Canada)
Our Task

• Industry Participation
• Stakeholder Outreach
It's your turn...

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CQA Compost Markets Development Pyramid

Compost Council of Canada – Compost Quality Alliance (CQA) Program
CQA Compost Markets Development Pyramid

- **Organic Bio-Fertilizers, Disease Suppressants (Pelletized)**: $100 - $300/T
- **Spreadable Top-Dressing, Golf/Turf Maintenance Products (Formed Particles and Pelletized)**: $50 - $100/T
- **Professional Greenhouse and Nursery Horticulture Growing Medias & Peat Substitutes (Dried or Dehydrated)**: $30 - $50/cu.yd
- **Construction Sediment and Erosion Control (S&EC) Products (examples are Compost Blower Media, Dried Hydro-Mulch Fibre and Filtrexx Medias)**: $10 - $30/cu.yd
- **Landscaping Growing Medias and Mulches (including bulk and bagged compost products) for commercial and residential customers**: $5 - $15/cu.yd
- **Compost Soil Amendments in Bulk to Agriculture, Land Reclamation and other Soil Improvement Applications**: $5-$10/T
- **Compost Supply to Topsoil Blenders for production of various Manufactured Topsoil Bulk Products (examples are Lawn Topsoil, Wetland Soil, Turf and Sports-field Soil, or Garden Soil Mixes)**: $3-$5/cu.yd
Compost Supply to Topsoil Blenders

• General rule-of-thumb for blending compost to manufacture topsoil is to use a 50:50 compost to loamy sand recipe (by volume),
• Compost manufactured topsoil can replace “traditional topsoil sources from floodplain or farmland stripping of native topsoil” as not only the more environment-friendly alternative, but also the better quality choice,
• Producing a screened compost topsoil with 5-10% organic matter and ideal drainage and compaction characteristics will command attention of the consumer markets

“CQA analyses provides additional organic matter content & grain-size distribution results used for developing topsoil blending recipes”
Compost Supply to Topsoil Blenders

Benefits to Municipalities

• Water Conservation (reduced watering required)

• Minimize harmful topsoil mining practices (floodplains and farmland stripping)

• Enhanced Wellfield, Aquifer and Surface Water Protection (erosion protection and pesticide absorption)

• Cost Savings (less costly sports field and parks maintenance)

• General Rule of thumb for estimating total volume of markets for soil products is 1 cu.yd per capita per year!
Compost Soil Amendments in Bulk to Agriculture

• Benefits of Compost to Agriculture, Land Application, Mine Reclamation
  • Nutrient Value of compost;
    • compost applications can supplement chemical fertilizers and provide a safer alternative to traditional manures,
  • Organic Matter of compost;
    • compost applications sustain or enrich soil organic matter levels,
  • Overall Soil Health
    • Compost naturally enhances biological soil parameters to enhance disease resistance

The potential annual volumes of compost required to supply annual 20tonne/hectare applications needed to sustain organic matter fertility of agriculture farmlands are very large!

“CQA analyses provides additional information about a compost’s nutrient contents (total and plant available levels) used in determining crop-specific application rates”
Compost Soil Amendments in Bulk to Agriculture

• Economics of Compost to Agriculture,

• Cost of compost supply, delivery and spreading can be managed below $20/tonne;
  • With crop-yield increases achievable from annual compost application rates of 5 to 10 tonnes/acre, there are direct cost savings in chemical fertilizer replacement

• Farms that utilize compost see gradual increased in overall soil fertility & health benefits over time;
  • Improved soil health could reduce pesticide requirements and improve compaction, erosion or irrigation field maintenance costs,

?? -Potential for future Greenhouse Gas Credits
Compost as Landscape Growing Media and Mulch (Bagged and Bulk)

- Compost-based growing media have replaced traditional peat-based mixes as the choice of outdoors landscapers.
- Access to a wider market for retail consumers of landscape products can be gained through packaged products (via improved shipping & storage logistics),
  - Important to note that price received for compost supply to bagged versus bulk markets is not significant, however sale volumes can be increased,
- Compost-amended “dark bark mulch” is growing in popularity as it breaks down to amend the soil bed,
- Use demonstration projects in partnership with local garden clubs, landscape associations etc. to get the message out.

“CQA analyses provides foreign-matter counts and compost maturity information that is critical information for determining suitability for bagging product”
Compost in Construction Sediment & Erosion Control Projects

- Suppliers of Compost Blower Trucks and Filtrexx Sock materials are the leaders for this compost market sector,
- S&EC best management practices and “equivalent to DOT Specifications” are important driver of these markets,
  - Good examples are in Highway Construction side-slope projects where alternatives to traditional silt-fence is utilized,
  - Also with new compost vegetative covers requirements for Sediment Ponds for Subdivision construction,
  - R&D developments for compost-based hydro-mulch fibre products is ongoing,

“CQA analyses verifies moisture contents, particle-size distribution (for meshing) results used for developing compost and hydro-mulch fibre recipes”
Professional horticulture mixes are heavily reliant on sphagnum peat and aged southern pine barks as the basic components of greenhouse/nursery media,

• R&D has identified compost can be dried to similar densities of peat and utilized at up to 40% content successfully within professional mixes,

• Compost adds to microbial, micronutrients, drainage, and cation exchange capacity,

• Reduced need for methyl-bromide fungicide sprays has been suggested due to improved microbial from compost additions,

“CQA analyses provides additional pH, EC and cation exchange capacity (CEC) results used in developing professional growing mix recipes”
Introduction

Novel Technology (dehydration) to process aged wood bark and compost into Value-Added Peat and Pine Bark Substitutes for nursery, greenhouse and horticulture usage

Objectives

- Quantifying and characterizing the horticultural suitability of dried and screened “aged wood barks” and “compost” feedstocks within professional growing mix blends
- Assess various plant growth performance within growing medias containing 10 to 40% Value-Added Horticulture substitutes

Methodology

1. The physio-chemical properties (pH, EC, nutrient content and release mechanisms) will be tested.
2. A series of greenhouse and field studies at NSAC (each a RCBD with 4 replicates) will be conducted.
Compost use in Spreadable Topdressing and other Golf/Turf Maintenance Products

- Access to this compost market sector would typically require investments in drying and granulating compost products,
- Turf management professionals are purchasing spreadable topdressing as part of improved lawn care standards,
- New national “Healthy Lawn Care Strategies” programs are promoting reduced applications of chemical fertilizers and pesticides,
  - Mow at higher level, less often, and allow cuttings to mulch into grass,
  - Core-aerate regularly followed by compost topdressing,
  - Fertilize with organic-based products,
Production of Novel DEHY-Topdressing and Organic Bio-Fertilizers

Dr. Gordon Price, D.H. Lynch,
Department of Plant and Animal Science (Nova Scotia Agricultural College)

Introduction

Novel Technology (dehydration) to process compost and manure feedstocks into organic Dehy-Topdressing or Bio-Fertilizer for turf, greenhouse and landscape/horticulture usage.

Objectives

- Quantifying and characterizing, the physio-chemical properties and the horticultural suitability of compost, manures or agri-food residues within bio-fertilizer blends
- Assess turf and plant growth performance from Dehy-Topdressing and Bio-Fertilizer amendments added during trials

Methodology

1. The physio-chemical properties (pH, EC, nutrient content and release mechanisms) will be tested.
2. A series of greenhouse and field studies at NSAC (each a RCBD with 4 replicates) will be conducted.
Compost Processed into Organic Bio-Fertilizers

- To access the organic bio-fertilizer markets, significant investments into dehydrating and pelletizing compost-enriched sources of nutrients are required,
- Consumer trends towards organically produced food is rapidly expanding across North America,
  - As a result more demand for “Approved Inputs” for organic crop production are expected,
  - Compost product recipes must be audited by “Organic Certifying Agencies” to ensure compliance with Canadian, USDA-NOP or OMRI Listed standards,
Questions ?????

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