Lesson 9: Compost Quality & Testing

Learning Objectives:

- Be familiar with compost quality parameters needed for regulatory compliance
- Understand compost quality parameters needed for marketing
- Be aware of United States Composting Council (USCC) programs
DEP Regulatory Standards

- Types Y, YM and A Compost for unrestricted distribution & use:

<table>
<thead>
<tr>
<th>Compost Type</th>
<th>Maturity</th>
<th>Foreign Matter</th>
<th>Particle Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Y &amp; YM</td>
<td>Mature or Semi-mature</td>
<td>≤2% (assumed)</td>
<td>Fine, medium or coarse</td>
</tr>
<tr>
<td>Type A</td>
<td>Mature</td>
<td>≤2%</td>
<td>Fine</td>
</tr>
</tbody>
</table>

Heavy Metal Concentrations (mg/kg dry weight) (assumed for Type Y & YM)

<table>
<thead>
<tr>
<th></th>
<th>Cadmium (Cd)</th>
<th>Copper (Cu)</th>
<th>Lead (Pb)</th>
<th>Nickel (Ni)</th>
<th>Zinc (Zn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>&lt;15</td>
<td>&lt;450</td>
<td>&lt;500</td>
<td>&lt;50</td>
<td>&lt;900</td>
</tr>
</tbody>
</table>

Market-Based Parameters

- pH
- Soluble Salts Content
- Macro-nutrient Content (N-P-K)
- Micro-nutrients
- Water Holding Capacity
- Bulk Density
- Moisture Content
- Organic Matter
- Particle Size
- Metals
- Stability and Maturity
- Inerts
- Weed Seeds
- Pathogens
USCC Testing Program

Test Methods for Examination of Composting and Compost (TMECC)

- A laboratory manual for evaluating compost:
  - Sampling and sample preparation procedures
  - Testing methods to analyze compost’s physical, chemical and biological properties

- Ensures proper procedures and methods are used for analyzing feedstocks and compost

- [www.compostingcouncil.org/programs/tmecc/](http://www.compostingcouncil.org/programs/tmecc/)
USCC Certification Program

Seal of Testing Assurance (STA):

- Testing, labeling and information disclosure program providing consistent and reliable information regarding compost
- Compost producers participate in the program
- [www.compostingcouncil.org/programs/sta/](http://www.compostingcouncil.org/programs/sta/)
Which Laboratories to Use?

- DEP requires analysis by labs certified under NELAP (National Environmental Laboratory Accreditation Programs) by the Florida Department of Health
- However, some NELAP labs may not be familiar with compost
- Compost should be analyzed by STA labs using TMECC procedures
- Therefore, use NELAP labs that are STA certified
Testing Frequency

- **DEP Standards:**
  - Composite sample tested every 20,000 tons of compost produced or quarterly, whichever is more frequent

- **STA Standards:**

<table>
<thead>
<tr>
<th>Compost Quantity (tons/year)</th>
<th>Testing Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 2,500</td>
<td>1 per quarter (or less)</td>
</tr>
<tr>
<td>2,501 – 6,250</td>
<td>1 per quarter</td>
</tr>
<tr>
<td>6,251 – 17,500</td>
<td>1 per two months</td>
</tr>
<tr>
<td>&gt; 17,500</td>
<td>1 per month</td>
</tr>
</tbody>
</table>