Fungi in the Soil

Organic Grower’s School 2020
March 7-8

Types of Fungi

1. Saprobe

2. Mycorrhizae

3. Endophyte

4. Parasite

5. Yeast

Fungal Behavior

1. Places Fungi Live
2. Perception
   a. Sight
   b. Smell
   c. Touch

3. Movement
   a. Growth
   b. Air
   c. Water
   d. Animals
   e. Plants

4. Eating
   a. Decomposition
   b. Dissolution
   c. Predation / Parasitism
   d. Exchanges
5. Reproduction
   a. Spores
   b. Fragmentation

**Fungi – Soil Interactions**

1. Decomposition

2. Soil Building

3. Food Source

4. Water Retention

5. Nutrient Cycling

6. Carbon Sequestration

7. Decontamination
Cultivation / Application Techniques

1. Mycorrhizae
   - Commercial inocula
     o Bioorganics
     o Mycorrhizal Applications
   
   - Cultivation
     o Ectomycorrhizae in culture
   
   - Wild Types
     o Compost
     o Healthy soil
     o Fruiting bodies
   
   - Application
     o Seeds or roots
     o Dry powder
     o Slurry
     o Compost / Amendment / Tea
2. Saprobic

- Strain Specific

<table>
<thead>
<tr>
<th>Media</th>
<th>Technique</th>
<th>Treatment</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs</td>
<td>Drill &amp; Plug</td>
<td>None</td>
<td>Shiitake, Oyster, Lion’s Mane, Nameko, Reishi</td>
</tr>
<tr>
<td>Straw / Wood Chip / Sawdust</td>
<td>Mulch Beds Containers</td>
<td>Pasteurization or None</td>
<td>Oyster, Stropharia</td>
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<tr>
<td>Leaves</td>
<td>Leaf pile</td>
<td>None</td>
<td>Blewit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pasteurization Type</th>
<th>Materials Needed</th>
<th>Treatment Range</th>
<th>Treatment Time</th>
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</thead>
<tbody>
<tr>
<td>Heat</td>
<td>Metal Container</td>
<td>140-170°F</td>
<td>60-90 min</td>
</tr>
<tr>
<td>Fermentation</td>
<td>Container</td>
<td>N/A</td>
<td>7-14 Days</td>
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<tr>
<td>pH</td>
<td>Soluble Lime</td>
<td>&gt;12 pH</td>
<td>4 hrs</td>
</tr>
</tbody>
</table>

- Wild Types
  - Mulch Piles
  - Compost
  - Wild Soils / KNF

- Inoculation Methods
  - Mushroom Beds
- Soil Amendments
- Mulch additive
- Mycoswales
- Compost tea

**Speaker Info:**

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**Upcoming Events:**

March 27-29 “Hidden World of Fungi”  
John C. Campell Folk School - Brasstown, NC  
https://classes.folkschool.org/class_details.aspx?pk=22240

April 1 “Fungi in Environmental Remediation and Restoration”  
Mushroom Club of Georgia – Atlanta, GA  
https://gamushroomclub.org

April 5 “Gardening with Fungi”  
Mushroom Mountain – Easley, SC  
mushroommountain.com

April 6 “Fungi in Environmental Remediation and Restoration”  
South Carolina Upstate Mycological Society – Clemson, SC  
https://scumsonline.com/

May 28 “Fungi in Environmental Remediation and Restoration”  
Asheville Mushroom Club – Asheville, NC  
https://ashevillemushroomclub.org/