Organic Soil Amendments that are Maximizing Moisture and Yields

TRADITION MEETS PRECISION

THAD SCHUTT ROYAL ORGANICS
Compost for Today’s Modern Agriculture
Pre WWII all Agriculture was “Organic”
Internal Combustion Engine
Introduction of Synthetic Pesticides & Fertilizers
Precision Agriculture
You Now Feed The World
COMPOST 101

Managed Biological Process

Food- feedstocks

Water

Oxygen

Time & Temperature
Finished Compost is:

- Stabilized organic matter
- High percentage of Humus
- Smells “earthy”
- Alive with microbiology
What to Look For in Finished Compost

Tested for:
Pathogen Reduction
Stability
Heavy Metals
Nutrients
Organic Matter
C:N Ratio
Germination and vigor
Regulations for Commercial Composting

<table>
<thead>
<tr>
<th>Organic Materials</th>
<th>Specific Requirements for Activity or Operation</th>
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<td>,,,</td>
<td>- For all organic materials, no more than 5,000 pounds or 25 cubic yards of material in any one site.</td>
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<td>,,,</td>
<td>- No notice, reporting, or testing requirements.</td>
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<td>- A facility that operates on a continuous process must submit an initial startup report within 30 days of startup.</td>
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<td>- A facility must submit an annual report by December 31 of each year.</td>
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<td>- The facility must maintain records of all materials processed.</td>
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<td>- The facility must submit a report to the Department of Ecology within 30 days of the end of each calendar year.</td>
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Table 200A: Terms and Conditions for Solid Waste Permit Exemptions
Rules Specific To Selling Compost
What Compost is Not

Aged manure
Old wood chips
Biosolids
Anaerobic Digestate
No S#!t, it’s Compost
General Benefits of Compost
Organic Matter

Living Biological Materials
Dead and Decaying Biological Materials

Soil Structure
Water Holding Capacity
Carbon
Increases Cation Exchange
Buffers the pH
Disease Suppression Using Compost

**Late 1800s:** suppressive soils documented [Huber & Schneider 1982]

**1930s – 1940s:** Link made between composts and soil health [Howard 1942]

**1959:** Biological nature of suppression documented [Menzies 1959]

**1970s - 1980s:** Extensive work done on suppressive composts [Hoitink & Kuter 1986, Weltzein 1989]
Nutrients

NPK
Calcium
Other Micros
Dependent on the feedstocks used
Spreading Compost

2-5 Tons or More Per Acre

Amending the entire soil profile as deep as tilled
Direct Seed Application
Precision Agriculture
Pelletized Compost
Formulated and Engineered
Rhizoterra Contract Research
Spreading Compost

2-5 Tons or More Per Acre

Amending the entire soil profile as deep as tilled
5 Years of R&D
Trials, Listening, Learning
Scientific Research Plots and Farm Scale Trials
4 Years of Wheat Trials
2014 Canola, Barley, Oats, Legumes
Major Discoveries

Can be properly dried down and preserve microbiology

Different Feedstocks have different influences on plants

Need only pounds (40-50 lbs for dryland wheat & canola), not tons, when placed with the seed
Soil Biology via PFLA Biomarker
Wheat Yield Increase Over Normal Fertilizer Application

2012,13 Research Plots w/ DNS Kelse

Compell w/ Full Fert

Compell w/ 33-50% Normal Fertilizer
Fertility Cost Difference

90 lbs N+ Sulfur on DNS Kelse Wheat

Compell w/Full Fert  vs  Compell w/ 33-50% Normal Fertilizer

Compell w/Full Fert

Compell w/ 33-50% Normal Fertilizer
Yield Research

Wheat Canola Barley Oats

Compell Yield Increase w/Compell+Normal Fertilizer
Thank You!

www.Compellnature.com

www.ROPorganic.com

www.FaceBook.com/RoyalOrganicProductsLLC