• Headquartered in Rutland, VT
• Provide resource management services to commercial and industrial customers in 39 states
• Annual revenue of nearly $500 million
• 1,800 employees serving 200,000 customers

• In 2012 we recovered over 890,000 tons of recyclables and organic materials
• Using landfill gas to generate enough electricity for 15,000 homes annually
• Recent awards: Climate Leadership Award, Natural Gas Vehicles for America Achievement Award, Vermont Governor's Award for Environmental Excellence
“Organics” Recycling

Nutrients, Carbon, Minerals, & Energy

PAPER MILLS

WWTPs & Compost Facilities

POWER PLANTS
Landscape, Horticultural & Specialty Soil Products

Casella Organics has been the northeast’s premier supplier of soil amendments since 1983. Please call us at 800-935-6474 for product analyses, pricing or to arrange for delivery. Visit us on line at www.casellagardens.com.

Compost & Soil Amendments

Compost
An excellent source of organic matter, primary and secondary nutrients and microbrial life. Available throughout the northeast, our customers choose Earthlife Compost for its unique ability to immediately fortify soil and ultimately to improve the soil’s long term health.

Super Peat
A blend of Sphagnum Peat and Earthlife Compost. This combination forms a unique soil amendment ideal for turf topdressing, improving gardens and planting beds and creating tee, green and divot mix blends.

Gro Max
Horticultural grade ingredients of Sphagnum Peat, Premium Compost, & Superhumus are blended to produce an ideal growing media for both small and large containers. Our Gro-Max is specially designed to provide plant roots with a growing environment that is loose and well aerated.

Superhumus
A screened (<7/8”) natural blend of bark and leaf matter from the Maine woods. Approved by the Maine Organic Farmers and Gardeners Association for Organic growing.

Sphagnum Peat
Native Maine Sphagnum Peat with excellent texture and water holding capacity.

Wood Ash
An excellent soil additive and compost amendment that balances pH, provides secondary nutrients and valuable organic matter. Minimizes compost odor and improves topdressing screening productivity.

Fertilizer

Earthlife 4.2.0
Our palletized 4.2.0 -Iron fertilizer is a favorite for vegetable and flower gardens, lawns, trees, shrubs, and plants. The easy to use granular formula is available in bulk and convenient 40lb bags.

Mulch

Nutri-Mulch
A blend of Aged Dark Bark and Earthlife Compost, Nutri-Mulch improves both soil and plant health. It’s dark color and rich texture are ideal for permanents, ornamentals and around trees and shrubs.

Aged Dark Bark
All natural dark bark with no wood fillers or additives. Season-long color retention and authentic look.

Erosion Control Mix
A practical, heavy duty slope stabilizer that includes coarse bark fragments (<6”) and stone (<3”). ECM filters out soil particles and protects against excessive nutrient runoff.

Specialty Products & Applications

Biofilter Media
We offer more than 20 years of experience custom blending biofilter and odor control media to meet your project specifications.

Bulking Agents
Casella Organics is able to supply compost facilities and soil remediation projects with consistent, year round bulking agents including Wood Ash, Woodchips, Shavings, & Sawdust.

Wetland Soil
We offer a range of products well suited to wetland soils applications. Casella Organics also provides the technical knowledge and project experience needed for successful wetland construction.

Engineered Soil
Casella Organics specializes in supplying consistent soil amendments for use in bioretention & rain garden areas, bioremediation, green roofs, and USDA tee, green & divot mixes.

Casella Organics, 155 Prepumpset Street, Unit #1, Portland, ME 04103
800-935-6474, 207-781-4911, Fax 207-781-6794
www.casellagardens.com

Agricultural Products

Liming Agents

Wood Ash
An excellent soil additive and compost amendment that balances pH, provides secondary nutrients and valuable organic matter. Minimizes compost odor and improves topdressing screening productivity.

Agrocarb
High quality, fine textured natural lime used to condition and enrich soils. Agrocarb quickly reacts in soil to balance pH and serve as a valuable substitute for commercial agricultural lime.

Animal Bedding

Fiberbed
Fiberbed is an excellent animal bedding alternative. Our patented blend stays in place better than straw and absorbs well in liquid manure pits. Fiberbed provides valuable potassium, magnesium, and calcium, and significantly outperforms average manure when land applied.

Agricultural Fertilizer

Fertilizer
Our palletized 4.2.0-iron fertilizer is a favorite for agriculture and seed growers. The easy to use granular formula is available in bulk and convenient 40lb bags.

Technical Services

Casella Organics provides on-site technical services including soil sampling, soil test evaluations, calculating application rates, and seed recommendations

Spreading Equipment

To facilitate the farm spreading of our agricultural amendments, we provide spreading equipment specifically designed to efficiently and accurately apply our products. Please contact your Casella Organics representative for more information.

A Product Driven Company Since 1983

Driven by the goal to create products to improve soil and plant health, we have sold over 2,500,000 cubic yards of compost under our earthlife brand, provided hundreds of thousands of tons of fertilizer and liming agents to farmers; and utilized soil products to improve thousands of acres of land.

Headquartered in Portland, Maine, Casella Organics has operations located throughout New England and New York.

Casella Organics*
4 Charnel Drive, Suite 200
Concord, NH 03301
Tel: 603-228-0405
Fax: 603-228-0404

Casella Organics*
84 Main Street, Suite 200
Hermans, ME 04441
Tel: 207-464-4190
Fax: 207-464-4191

Casella Organics*
94 Main Street, Suite 15
Presque Isle, ME 04769
Tel: 207-464-1520
Fax: 207-464-1521

Casella Organics*
84 Main Street, Suite 200
Clifton, NY 12425
Tel: 845-349-0137
Fax: 845-349-0138

Casella Organics*
135 Prepumpset Street, Unit 1, Portland, ME 04103
800-935-6474, 207-781-4911, Fax 207-781-6794
www.casellagardens.com
Product Analyses & Use Guidelines
### Soil Amendment Trace Metal Comparison

**Product:** Hawk Ridge Compost  
**Updated:** April 15, 2014

<table>
<thead>
<tr>
<th>METAL</th>
<th>EPA STANDARD¹</th>
<th>ME DEP STANDARD²</th>
<th>HAWK RIDGE COMPOST³</th>
<th>Average US AG Soil ⁴</th>
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</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>41</td>
<td>34</td>
<td>4.2</td>
<td>6.3</td>
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<td>Cadmium</td>
<td>39</td>
<td>10</td>
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<td>Chromium</td>
<td>NS</td>
<td>1000</td>
<td>11</td>
<td>33.0</td>
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<tr>
<td>Copper</td>
<td>1500</td>
<td>1000</td>
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<td>Lead</td>
<td>300</td>
<td>300</td>
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<td>Mercury</td>
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<td>6</td>
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<td>Molybdenum</td>
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<td>Nickel</td>
<td>420</td>
<td>200</td>
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<td>Selenium</td>
<td>100</td>
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<tr>
<td>Zinc</td>
<td>2800</td>
<td>2000</td>
<td>257</td>
<td>58.9</td>
</tr>
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</table>

**Notes:**
- **NS = No Standard; NA = Not Available**
- ¹ USEPA 40 CFR Part 503 Regulations, promulgated 1992
- ² ME DEP - Solid Waste Regulations, Chapter 419, Table 419.3, promulgated 1999, updated 2012
- ³ Hawk Ridge Compost, average metals values, 2014, analyses by Maine Environmental Laboratory

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PRODUCING & PROMOTING QUALITY SOIL AMENDMENTS
Composting

**Services:** Transportation, processing and product marketing

**Feedstocks:** Sawdust, woodchips, municipal biosolids, food waste

**Technology:** Gicom Tunnel

**Product:** Class A, EQ biosolids compost <3/8”
Hawk Ridge Compost Facility: Tunnel Technology
Alkaline Stabilization

Services: Transportation, processing and product marketing
Feedstocks: Municipal Biosolids, reactive liming agents
Technology: Schwing Bioset
Product: Fertilimer, Class A biosolids product
Markets:
Golf, Athletic Fields, Lawns, Greenhouse, Garden Center, Landscape, & Consumer

Products:
Compost
Mulch
Container Media
Topsoil Amendment
Wetlands
Roof Top Gardens
Bioretention Cells
Biofilter Media
Speciality Soils
Golf Courses Green Up with Earthlife™ Products

- Tee & Green Root Zone Blends
- Doff Mixes
- Topdressing
- Hard to Grow Areas
- Planting Amendments
- Seed

Builds and Maintains Athletic Fields

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Location</th>
<th>Site</th>
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<tbody>
<tr>
<td>Acton/Bentonborough, MA</td>
<td>Acton Athletic Fields</td>
<td>Lebanon, ME</td>
<td>Strawberry Fields</td>
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<tr>
<td>Arlington, MA</td>
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<td>Medford, MA</td>
<td>Medford Athletic Field</td>
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<tr>
<td>Ashburnham, MA</td>
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<td>Manchester, NH</td>
<td>Silver Family Park</td>
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<td>Hinsdale, IL</td>
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<td>Marlow, MA</td>
<td>Marlow High School</td>
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<td>Berwick, ME</td>
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<td>Naples, FL</td>
<td>Lake Region HS</td>
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<td>Bridgewater Middle School</td>
<td>New Castle, ME</td>
<td>Lincoln Academy</td>
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<td>Bridgewater Elementary</td>
<td>Newport, ME</td>
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<td>Recreation Complex</td>
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<td>Little League</td>
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<td>Waverly High School</td>
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</tbody>
</table>

Earthlife Products Distributed by...

Casella Organics
135 Parnassus Street, Unit 1, Portland, ME 04103
207-781-5001, Fax 207-781-5094

Earthlife Products Distributed by...

Casella Organics
135 Parnassus Street, Unit 1, Portland, ME 04103
207-781-5001, Fax 207-781-5094 (fax)
Large Scale Projects
Site Restoration
Agriculture
Casella Organics

Landfill and Site Closure Work

Pelham Landfill Cap System
Pelham, NH
1998
BioMix™ Topsoil
FiberClay™ Barrier/Buffer Layer
Vegetative Support Layer
Landfill Barrier Layer
• Engineers
• Agronomist
• Crop Advisors
• Marketing/Sales
• Project Managers
• Permitting/Compliance
• Business Development
Healthy Soils = Healthy Environment

Spectacle Island Facts
>6% OM
12” soil
50k+ cys compost
200k+ cys final soil
Organic Matter = Healthy Soils

1. Compost improves soil structure and porosity
2. Compost increases moisture infiltration and permeability
3. Compost supplies organic matter.
4. Compost allows plants to more effectively utilize nutrients.
5. Compost supplies beneficial microorganisms to soils
Acton, MA Water Department

Robbins Mill, Pulte Homes, $850k+

Water Ban = No Irrigation.

Jane Ceraso, Env.Manager, Acton, MA required:

6” soil with 10% OM
Possible water conservation techniques for new developments/upgraded services that fall under Water Impact Report regulation.

<table>
<thead>
<tr>
<th>Outdoor Conservation Action</th>
<th>Est. water savings/yr for avg. 4 person household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Lawn and landscape (no supplemental irrigation)</td>
<td>81,600 gallons*</td>
</tr>
<tr>
<td>Utilize captured rainwater for irrigation needs</td>
<td>Depends</td>
</tr>
<tr>
<td>Drip irrigation only</td>
<td>Depends</td>
</tr>
<tr>
<td>Maximum total turf area of 4,000 sq. ft. (approx. 1/10 acre)</td>
<td>48,960 gallons*</td>
</tr>
<tr>
<td>Minimum 6 inches 10% organic soil added to landscaped/turf areas</td>
<td>Depends</td>
</tr>
<tr>
<td>Fix all outdoor leaks (does not apply to new developments)</td>
<td>Depends</td>
</tr>
<tr>
<td>Use pool cover</td>
<td>400 gallons</td>
</tr>
<tr>
<td>Devices to increase efficiency of irrigation system</td>
<td>Depends</td>
</tr>
<tr>
<td><strong>Indoor Conservation Action</strong></td>
<td></td>
</tr>
<tr>
<td>Replace all old toilets with ultra-low flow toilets (1.6 gpf)</td>
<td>Depends</td>
</tr>
<tr>
<td>(does not apply to new developments)</td>
<td></td>
</tr>
</tbody>
</table>
Denver, Colorado Water Department

Soil Amendment Program

Before a newly constructed premise may be landscaped, property owners must amend their soil with compost so the soil more efficiently retains water. This rule applies to all new residential, commercial, government and industrial properties within Denver Water’s service area.

- Importance of Soil Amendment
- To Pass a Soil Amendment Inspection
- Schedule a Soil Amendment Inspection

Provide documentation (invoice or load ticket) of soil amendment product, and a plot survey map with square footage of the amended area for inspection purposes. The load ticket must include the type of soil amendment product, and the address(es) it will be applied to.

Inspection/approval will be arranged once documentation has been received and product approved. Documentation may be:
- Emailed — customercare@denverwater.org
- Faxed — 303-628-6190 (indicate soil amendment)

You will be notified of inspection approval status by phone or email. All properties are subject to spot inspections.

If the property is served by a master meter distributor, the distributor’s representative will be notified whether the property has passed or failed via email within the next business day.

- Winter Extension
- Phased Projects

For more information:
Soil amendment: 303-893-2444 or customercare@denverwater.org
Tap issues: 303 628 6100
Meter set/inspection: 303-628-6145
# Improving Soil Biology

## Compost Foodweb Analysis

**Report prepared for:**
Casella Organics  
John Kelly  
135 Presumpscot St.  
Portland, ME 04103 USA  
(207) 781-5794  
john.kelly@casella.com

**Report Sent:**  
Sample #: 03-000488  
Submission #: 03-0004231  
Unique ID: Premium Compost N  
Plant:  
Invoice #: 0  
Sample Received: 11/27/2012

### Organism Biomass Data

<table>
<thead>
<tr>
<th>Organism Biomass Data</th>
<th>Dry Weight</th>
<th>Active Bacterial (µg/g)</th>
<th>Total Bacterial (µg/g)</th>
<th>Active Fungal (µg/g)</th>
<th>Total Fungal (µg/g)</th>
<th>Hyphal Diameter (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td>0.40</td>
<td>62.5</td>
<td>1205</td>
<td>23.9</td>
<td>947</td>
<td>3</td>
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<tr>
<td><strong>Comments</strong></td>
<td>Too Wet</td>
<td>Excellent</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
<td></td>
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<tr>
<td><strong>Expected Range</strong></td>
<td>Low</td>
<td>High</td>
<td>High</td>
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<tr>
<td><strong>Results</strong></td>
<td>0.45</td>
<td>15</td>
<td>100</td>
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<tr>
<td><strong>Comments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td><strong>Expected Range</strong></td>
<td>Low</td>
<td>High</td>
<td>High</td>
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<td>High</td>
<td>High</td>
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</table>

### Protozoa

<table>
<thead>
<tr>
<th>Protozoa</th>
<th>Numbers/g</th>
<th>Total Nematodes #/g</th>
<th>Percent Mycorrhizal Colonization</th>
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</thead>
<tbody>
<tr>
<td>Flagellates</td>
<td>High</td>
<td>14234</td>
<td>ENDO</td>
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<tr>
<td>Amoebae</td>
<td>High</td>
<td>11394</td>
<td>Low</td>
</tr>
<tr>
<td>Ciliates</td>
<td>High</td>
<td>143</td>
<td>ECTO</td>
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### Organism Biomass Ratios

<table>
<thead>
<tr>
<th>Ratios</th>
<th>Active to Total Fungal</th>
<th>Active to Total Bacterial</th>
<th>Active Fungal to Active Bacterial</th>
<th>Plant Available N Supply (lbs/acre)</th>
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</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td>0.79</td>
<td>0.03</td>
<td>0.05</td>
<td>0.38</td>
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<tr>
<td><strong>Comments</strong></td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Low</td>
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<td><strong>Expected Range</strong></td>
<td>Low</td>
<td>High</td>
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<td>1.5</td>
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### Nematodes per Gram of Soil

<table>
<thead>
<tr>
<th>Nematodes</th>
<th>Identification to genus</th>
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<td>0.38</td>
<td>Bacterial Feeders</td>
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<tr>
<td>0.72</td>
<td>Acrobeodes</td>
</tr>
<tr>
<td>0.27</td>
<td>Culicicaria</td>
</tr>
<tr>
<td>0.15</td>
<td>Plectus</td>
</tr>
<tr>
<td>0.15</td>
<td>Fungal Feeder</td>
</tr>
<tr>
<td>0.15</td>
<td>Eudorylaimus</td>
</tr>
</tbody>
</table>

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03-000488: Page 1 of 2
Creating Better Specifications

100 cubic yards of compost shall be applied, and uniformly incorporated into the top 6 inches of Planting Area A.
Getting to the root of urban tree health

December 11, 2015
By Erik Ness

Politicians are always looking for babies to kiss. They love easy gestures like ribbon cuttings and hearty handshakes and, since at least 1872, tree planting.

In that year, the first Arbor Day in the United States was held in Nebraska City, NE. An estimated one million trees were planted that day across the state. There were grand parades.

Tree planting is also in vogue in American cities today. The U.S. Conference of Mayors has taken an activist stand on climate change, and tree planting is an easy and non-controversial way to further the green agenda. All 10 of the largest cities in the United States have some kind of effort to increase tree cover. Ambitious “million tree” initiatives have even launched in a few larger metro areas: Sacramento’s goal is to plant five million.

Trees are popular and can provide extraordinary benefits to life in the city. They trap stormwater and provide cooling as they transpire. They generate oxygen, remove pollutants from the air, and provide habitat for birds and many other critters. They help save energy and even prolong the life of asphalt. A recent estimate puts the economic value of trees in the Chicago area alone at $51.2 billion.
Healthy soils, healthy trees

Trees fall because of accidents, vandalism, or disease. They can be improperly planted, poorly chosen and placed, and not adequately nurtured during establishment. They can be staked too long, or not long enough. Heat and drought stress take their toll. All of these things can matter, but Scharenbroch is on a mission to upgrade the soil.

The problem of urban soil is fairly simple: it’s often barely soil at all. The first thing city builders do is to remove it or modify it. They need something with minimal organic matter, a substance that can support a building or a road: gravel, rock, sand, and mineral soil. Even if it’s not taken away, the soil is often diluted, contaminated, or compacted to the point where it cannot function. In essence, it is dead—a ghost of the living system that constitutes healthy soil.

Scharenbroch’s fascination with the health and growth of urban trees began when he was still an undergraduate. He recognized that tree health and growth might be strongly tied to urban soil condition. “It’s really important that we get in and fix the soil properties early to maximize the value of these trees,” he says. Yet he found little practical support in the literature.

After graduate training, he landed at The Morton Arboretum in Chicago. The city has been an incubator for the urban forestry movement, and the Arboretum has prioritized work in soils. Eventually, he met Lakhwinder Hundal, chief soil scientist at the Metropolitan Water Reclamation District of Greater Chicago, which operates the world’s largest wastewater facility. Hundal is charged with finding new and improved uses for its annual output of approximately 180,000 dry tons of biosolids every year—the nutrient-laden organic materials produced at the far end of your toilet.

Biosolids are invaluable raw materials, but in decades past, it was not uncommon for them to have been landfilled or incinerated. In the last few decades, many large cities have developed a robust market in biosolids, treating them and then selling them for spreading on agricultural fields. Biosolids have an understandable image problem, and sometimes raise safety concerns: they can be contaminated by heavy metals, microorganisms, and, increasingly, trace pharmaceuticals.

Yet the business is now fairly mature, and farmers could probably use everything produced by America’s sewage treatment infrastructure. But transporting biosolids is costly, and finding a use for them closer to home could save the city in both transportation and material costs.

In 2010, with funding from the Tree Research and Education Endowment Fund, Scharenbroch set up 180 plots with five different tree species and a half dozen different soil treatments, ranging from standard commercial fertilizers to compost tea, wood chips, and biosolids. All treatments proved better than nothing, but biosolids were the clear winner: those trees grew bigger and faster. Their soil was richer in carbon, nitrogen, and phosphorus. “We’ve established that biosolids do increase tree growth and do improve soil quality,” Scharenbroch says. “We can help to get these trees established by getting them to grow faster.”

Continue reading this story in the December 2015 issue of CSA News magazine.
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