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Cooperative Extension

The University of Maine Sustainable Compost Program: Completing the Circle

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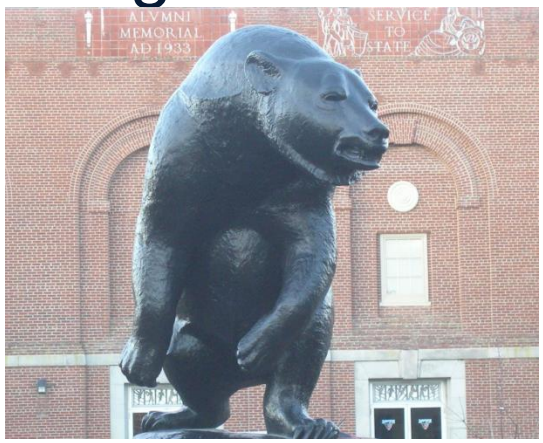
The University of Maine is the state's land grant institution located in Orono, ME.



Student population: 11,500
of which 3,600 are campus residence

Four food centers serve approximately 49,750 meals /wk.

Approximately **7,550 lbs.** of pre-consumer food residual is collected weekly

Compost History

- Anaerobic Digestion: mid 80's
- On- campus turner windrow system- 1990's
  - No ownership
  - State DEP permitting issue
- Off campus composting 2001-2012
  - Commercial hauler and composter
  - Material was picked up 4 days/week
  - 50 mile haul roundtrip
  - $65,000/year tip fee

On- campus composting:

- All stakeholders: must be involved
  - From students, food service, facilities, faculty, administration
  - Determine:
    - Location
    - Methodology
    - Funding
    - Responsibilities

Two year process!!!!

Campus Partnership:

- Resource Recovery: Dennis Grant, Scott Foster
- Auxiliary Services: Daniel Stirrup
- Facilities: Geremy Chubbuck
- Faculty and Students

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Campus Location

- Eastern edge of campus, no further then 0.5 miles to any food center.
- Isolated from public view, but easily accessible to students and faculty
- Proximity to facilities management complex
- Good winter access and end use

Methodology

- Initial investment cost:
  - $400,000
- In vessel system:
  - 8’ x 40’ Earth Flow:
    - Green Mountain Technology
  - 21 day retention time
- Infra structure
  - Road, electricity, site work
- Feedstock building
- Recipe:
  - Horse bedding (from on-campus equine center)
  - Food residual
  - Occasionally wood shavings.

Collection/delivery

- Horse bedding is delivered weekly or biweekly
  - Stored in a feedstock building on site

- Food residual is collected daily:
  - Approximately 1-2 hours (usually mornings)
  - Pick-up with lift gate in 35 gallon plastic barrels with plastic bag liners

Photo Credit: Adam Kuykendall

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Photo Credit: Adam Kuykendall

Approximately 21 day retention time

Curing: 3-6 months

Maine Greens Enterprise

Photo Credit: Danielle Walczak

- Started in 2012
- 40 lbs./ week
- Represents about 20-25% of total usage
- $200-$240 value
- Add a second high tunnel for 2014

End use:

- Rogers farm: Ornamental Horticulture Research facility
- Witter Farm: Livestock Research Facility
- Campus Landscape projects:
  - Soil enhancement

Compost Economics

- Expenses:
  - $65,000 to send off campus
  - $400,000 capital investment: 2012
    - Payback on investment is approximately 12 years
  - ½ FTE to manage system:
  - Operational cost?
- Savings:
  - $65,000 from compost contract
  - $12,000 land fill tip fees ($87.00/ton)
  - Finished compost: 300 yd3 @ $15.00/yd3
  - Decrease carbon foot print (mileage)
  - Educational benefits

Challenges

Mechanical Issues

Training

Manage the Ebb and Flow of material: Semester /summer breaks

Lessons learned

- Planning and participation
  - Empower the staff

- Recognition how easy composting can be when done correctly!

Continuing to Grow

- Student research
- Large campus events:
  - President's welcome: September 2013
  - Athletic events?
  - Graduation?

Photo Credit: Adam Kuykendall