

Advances With Actively Ventilated Composting at an Existing Site

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History

St-Henri Facility

- Located on the south shore of Quebec City
- Started in 1978

At first, composting pig manure and paper sludge

Permitted now for 80,000 tonnes/yr in-bounds

Green/yard organics, SSO in bulk, sludges

Manufacturing of blends and mixes to serve horticulture market, 100% is sold in bulk



1978 → Les Composts du Québec

2006 → GSI Environnement

2011 → Englobe Corp

2024 → Biogenie Canada Inc.



Recent Objectives

Contribute to our Sustainable Development Goals with minimum impacts by:

- Having minimal foul odours in the neighborhood
- Preventing uncontrolled leachate leaking out of the site
 - Thus also protecting ground water quality
- Releasing GHG from potential anoxic conditions
- Spreading of foreign matter and emerging contaminants into the environment



The UN 17 Goals of Sustainability

Recent Objectives

Improve compost quality while helping turnaround volume

- Reduce composting time from 12-18 ~~months~~ to weeks
- Maintain high maturity levels in compost and other products
- Maintain satisfaction among our 40 yr-old customers
- Assess impacts on % foreign matter in this newly made compost



History

Our prior experiences with active ventilation in composting

- In-vessel composting with tunnel Robot-Compost at Gatineau facility (1997 - 2012)
 - 4 tunnels in 24m X 100m building



History

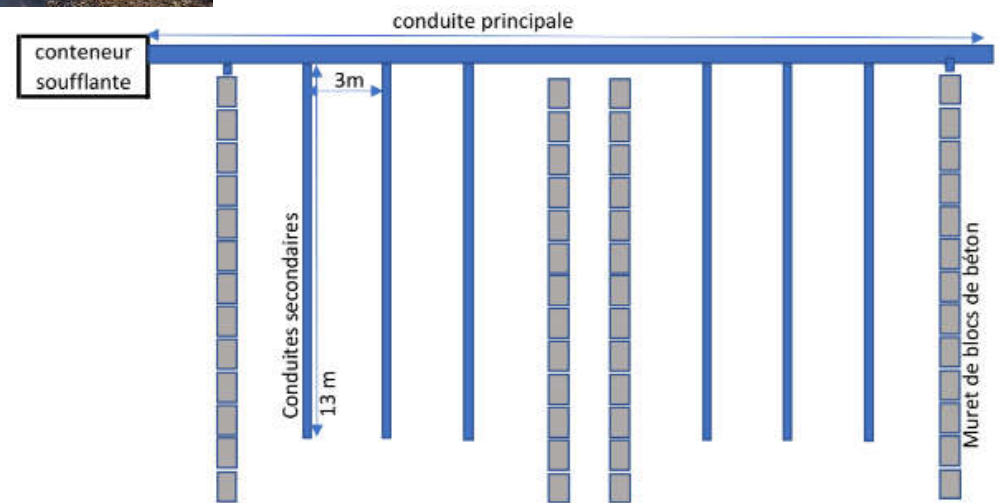
Our prior experiences with active ventilation in composting

- St-Henri site 15 bays outdoor tunnels (9m X 40m)
2005-2009



Image © 2024 Artbus

Bunker Layout



Pilot Phase

Parameters monitored during testing:

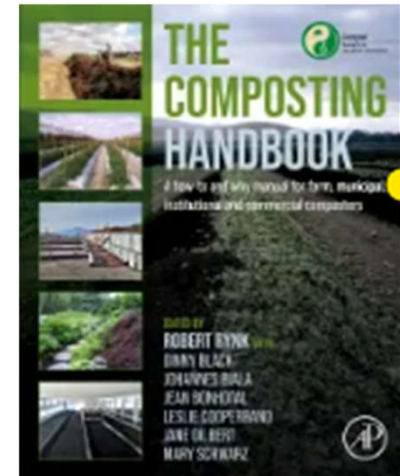
- Positive aeration with pulses (on-off cycles)
- Continuous temperature monitoring
- Surface irrigation during venting off-cycles
- Minimum turning of the pile



Challenges

Main challenges met, even when trying to follow the recipe! →

- Particle size reduction prior to composting and dealing with foreign matter
- Drying of the feedstock too early, over ventilating
- Adverse & wet weather conditions, especially winter
- Matching compost readiness with right screening timing for mixes production
 - Delivering compost in March is not possible

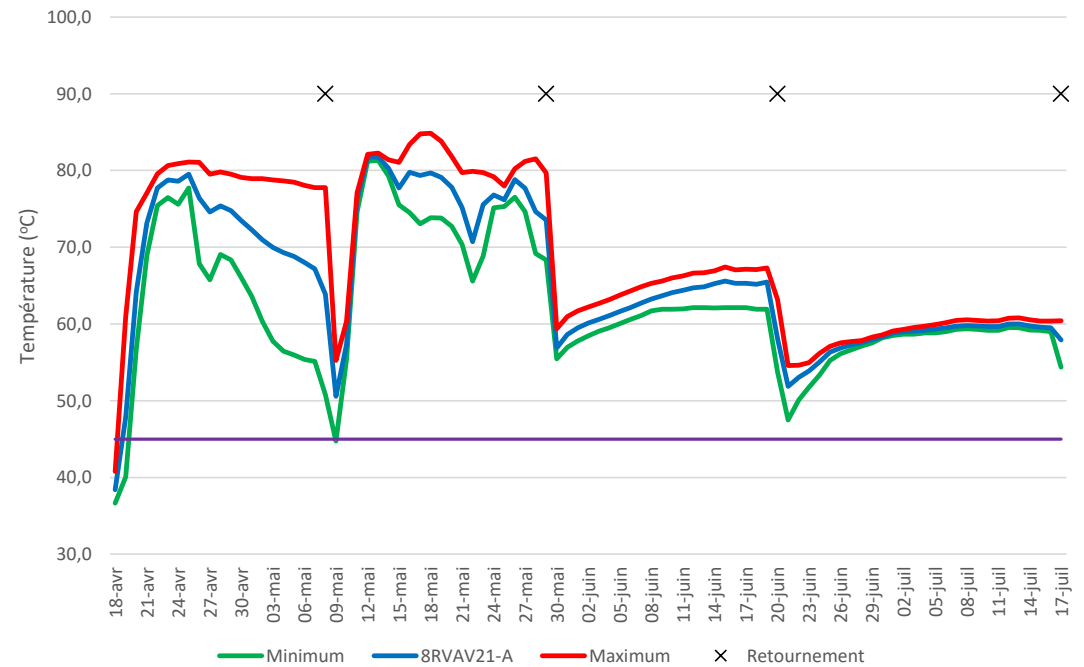


Results Achieved

- Maturity criteria for compost reached in 10 - 12 weeks
- Main Key Performance Indicator for us is average **tonnes inbound/m²/year**
- % moisture content = 50 to 60% during composting, just <50% when mature
- Screening done at 7/16 inch

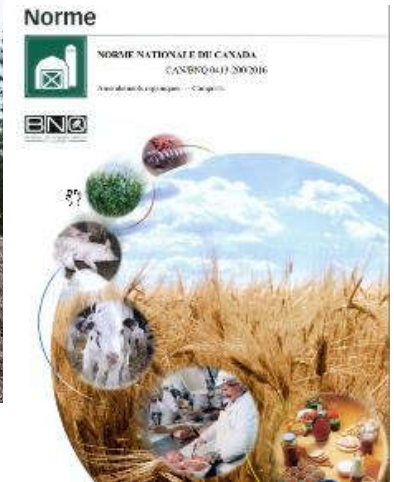


Évolution des températures du lot 8RVAV21-A



Next steps

- Planning for the permitting phase for full scale implementation
- Measure compost quality parameters required by regulations
- Start introducing new compost to market with strategic clients
- Adapt our site specific CQA protocol
- Maintain environmental compliance of the site and all manufactured products



Agence canadienne
d'inspection des aliments

Canadian Food
Inspection Agency



Agricultural



Horticultural



GUIDE SUR LE RECYCLAGE DES MATIÈRES
RÉSIDUELLES FERTILISANTES

Critères de référence et normes réglementaires
Édition 2014

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Thanks to The Team



