

**Pathogen Analysis of NYSDOT Road-killed Deer
Carcass Compost Facilities**

Quarterly Progress Report #4

07/01/06 – 09/30/06

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Transportation Infrastructure Research Consortium (TIRC)

CWMI Quarterly Progress Report: 04/01/06 – 06/30/06

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Task 1: Select Pathogens for Study – task 1 is complete

Subtask 1.1

- This subtask has been completed (see Quarterly report #1) having selected the following pathogens for study:
 - ❖ *Escherichia coli*/Fecal coliforms
 - ❖ Fecal Streptococcus/Enterococci
 - ❖ *Salmonella* spp.
 - ❖ *Mycobacterium avian paratuberculosis* (MAP)

Subtask 1.2

- This subtask has been completed.
- Reports titled “Summary of Rationale of Bacteria Studied” and “Prevalence of Pathogens in Roadkill Summary” are complete (see Quarterly report numbers 1 and 2).

Task 2: Establish Compost Piles – task 2 is complete

Subtask 2.1

- Location of sites for establishing 3 pilot demonstration piles is complete (see Quarterly Report #1).

Subtask 2.2

- Pilot piles were built in October in Watertown, Cortland and Highland, NY.
- Three replicate research piles were built in November at the Cornell University compost site
- This subtask is complete (see Quarterly Report #1).

Task 3: Investigate Pathogen Concentrations and Compost Characteristics

Subtask 3.1 – subtask 3.1 is complete

- Woods End Research Laboratory (WERL) in Maine was selected to perform the pathogen analyses.
- The Johnes laboratory at the Cornell College of Veterinary Medicine was selected to analyze the manure for *Mycobacterium avian paratuberculosis*.

Subtask 3.2

- Replicate samples of compost were sampled from the 3 pilot piles for month 9 testing, and sent to WERL for compost composition, particle size and pathogen analysis:
 - ❖ All 3 pilot pile sites were sampled on 7/10/06.
 - ❖ Holes were dug in the compost piles at 3 sites around the perimeter of the pile. Sample # 1 was taken from all 3 holes at approximately 12” into the pile, sample # 2 at 12 – 18” in, and sample # 3 at 18 – 24”.

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- ❖ Pathogens were analyzed on all 3 samples while compost composition and particle size were analyzed on one composite made at WERL from the 3 samples being mixed together.
- ❖ Temperature data from the data loggers at Highland and Cortland were downloaded at this time. Watertown data was downloaded on 7/31/06.
- Month 9 sampling of the 3 research piles was done on 7/17/06:
 - ❖ Replicate samples of compost were sampled for month 6 testing in the same manner as at the pilot sites, and sent to WERL for compost composition, particle size and pathogen analysis in the same manner as at the pilot piles.
 - ❖ Temperature data from all three data loggers was downloaded on 7/17/06.
- Week 36 sampling of deer goo and MAP:
 - ❖ Pile 1 – all 3 bags of deer goo and MAP were found
 - ❖ Pile 2 – all 3 bags of deer goo and MAP were found
 - ❖ Pile 3 – all 3 bags of deer good were found, but only 2 MAP were found

Subtask 3.3

- All data collected thus far (temperature, composition and pathogen data) has been entered into Microsoft excel to be analyzed using statistical measures when all data has been collected.

Task 4: Outreach and Guidance to Facilitate Implementation of Composting Road Kill Deer

Subtask 4.1

- Bill Davis (illustrator) has submitted graphics to CWMI for use in the DVD, 1 or 2 posters, fact sheets and guidance materials.
- The revised draft of Guidance to Address Worker Health and Safety for Biological Hazards Associated with Composting Road-Killed Deer in New York was written by Nellie Brown, Director, Workplace Health and Safety Program, Cornell University. A meeting will take place in January to discuss this draft.
- Video footage by Insights productions is continuing.
- Information about the project has been posted on the Cornell Waste Management Institute website at <http://cwmi.css.cornell.edu/tirc/tirc.htm>
 - ❖ Project description
 - ❖ Quarterly report # 1
 - Field test of sentinel bags
 - Pile building at pilot sites
 - Pile building at Cornell's research site
 - Week 3 bag pulling for pathogen testing at the research site
 - ❖ Quarterly report # 2
 - Summary of January 30, 2006 meeting of the Technical Working Group

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- Prevalence and Persistence of Pathogens in NYS Road-Kill
Disposed of Through Composting: A Literature Review
- ❖ Quarterly report # 3
- ❖ Photos of the project

Task 5: Progress and Final Reports

Subtask 5.1

- Two of the three required meetings have been held (see Quarterly report numbers 1 and 2).
- A third meeting is in the planning stages to discuss the Guidance to Address Worker Health and Safety for Biological Hazards Associated with Composting Road-Killed Deer in New York draft written by Nellie Brown.