

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

Quarterly Progress Report #3

04/01/06 – 06/30/06

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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 6 testing, and sent to WERL for compost composition, particle size and pathogen analysis:
 - ❖ All 3 pilot pile sites were sampled on 4/24/06.
 - ❖ 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”, 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 logger at Highland was downloaded at this time. Watertown data was downloaded on 5/4/06. Cortland data will be downloaded at month 9 in July.
- Month 6 sampling of the 3 research piles was done on 4/17/06:
 - ❖ 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 4/19/06. Probe #1 in pile #3 stopped working on March 13, 2006 at 14:00. The probe had disconnected from the port in the data logger. It was pushed back in on 4/19/06 and was found to be working again.
- Other sampling:
 - ❖ Replicate samples of compost were sampled from the 700 deer pile in Highland, NY on 5/10/06 and sent to WERL for compost composition, particle size and pathogen analysis.

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

- Meeting with Bill Davis (illustrator) on 4/5/06 to discuss what we will want for graphics in the DVD, 1 or 2 posters, fact sheets and guidance materials. A follow-up meeting took place a couple of weeks later to look at some of the illustrations Bill put together.
- Nellie Brown, Director, Workplace Health and Safety Program, Cornell University wrote a draft of Guidance to Address Worker Health and Safety for Biological Hazards Associated with Composting Road-Killed Deer in New York on May 4, 2006. It is being revised and a meeting is planned with members of the TWG for this summer to discuss worker health and safety recommendations.
- Video footage of pile building was done in Washington County on June 7, 2006 by Insights productions: Ann Michel and Phil Wilde.
- 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

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

Subtask 4.2

- DOT personnel were invited to be present during filming in Washington County. Jim Carey was interviewed for the video. He covered issues concerning frozen deer and the Washington county experience. Pete Howard (DOT) and Aaron Gabriel (CCE) were invited but really wanted Jim to tell the story. The shoot was scheduled twice as the video crew had vehicle problems and we would have been rained out in any case. Next shoot will be in early August.

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.