

Speaking of pathogens...

Composting and Avian Influenza

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Overview: CO Mortality Composting

- As rendering costs have increased, mortality composting is taking its place at feedlots, dairies, and poultry operations
- Composting decreases biosecurity hazard from visiting rendering trucks
- Composting works in all seasons
- Composting produces a useful product



base layer
covered with
at large
n CO



Ready for sale at Diamond D, Mead, CO

Hogs

- Successful hog mortality composting business in eastern Colorado
 - Roc Rutledge, Ace Compost LLC, Yuma, unocactus@yahoo.com
- See manual on website:
 - www.state.co.us/oemc/programs/agriculture/animal_mortality/hog_mortality_composting_manual.pdf

Poultry

- Con Agra contracts out composting litter from turkey houses (Ron Ditson, rditson@renewablefiber.com)
- Carcasses from routine mortalities are composted in uncovered, active windrows with litter, some additional carbon added
- 40 pound turkeys “disappear within 2 weeks”
- Compost is Class 1, which is most versatile class of compost in Colorado’s classification system

Poultry Carcass Composting in Eastern US

- Bin composting is recommended for normal mortalities
 - Excess moisture in mortality composting is a big problem – one we usually don't have in CO
- Detailed info available about composting in poultry houses after euthanizing all birds
- Neither directly applicable to composting poultry mortalities in CO

Recent EPA paper, August 11, 2006*:

Disposal of Domestic Birds Infected by Avian Influenza An Overview of Considerations and Options

- www.epa.gov/epaoswer/homeland/flu.pdf
- Section 5 reference to “Carcass Disposal: A Comprehensive Review with website listed
- “...on-site composting will likely be a very widespread practice because its effectiveness has been proven in recent AI outbreaks.”

*Good reference article

Composting and AI infectivity

- HPAI* may be inactivated in 3 hours at 132°F or ½ hour at 140°F, well within the temperature range of composting (Senne et al. 1994)

*high pathogenicity avian flu

Composting and poultry carcass disposal in Colorado

- Given history of composting, composting mortalities, EPA, eastern experience, composting may be a method of choice in disposing of poultry carcasses resulting from AI in Colorado
- Composting proven method of disposal for “routine” poultry mortalities in CO

The “Hows’ of composting poultry carcasses On-Site* in Colorado

- Outdoor, active windrows on prepared pad
- Carcasses (C:N = 5:1, 65% moisture)
- Carbon feedstocks (bring C:N up to 30:1)
- Equipment (loader)
- Water
- Management expertise!

*On-site critical to biosecurity

Hows, continued

- Base layer of absorbent high carbon material, like wood wastes, 12 – 18 inches deep
- Lay single layer of poultry over absorbent base
- Layer of poultry litter
- Repeat layers up to height of about 6 feet high, ending with cap of carbon rich feedstock that covers all carcasses at least 12 inches deep

Composting management

- Monitor conditions for:
 - Temperature
 - Moisture
 - Odor
 - Exposed carcasses
- Turn compost after 2 weeks – no visible birds
- Turn until compost stops heating
- Cure compost
- Sell or use on-site

Alternative Composting Management

- Monitor conditions for:
 - Temperature
 - Moisture
 - Odor
 - Exposed carcasses
- Turn compost after 10 days to 2 weeks – no visible birds
- If temperature conditions were met, AI pathogen inactivated, can **move compost off-site** to finish process!

Is CO ready to compost carcasses from AI incident?

- Organize team of mortality resource people in CO?
- Equip Cooperative Extension agents with appropriate information and tools – in progress
- With help of experts from private sector, develop simple but complete guides for on-site composting of poultry carcasses appropriate for climate and feedstocks in CO (written, ppt, video?)
- Develop data base on available carbon feedstocks for rapid delivery to affected poultry operations

Good Reference

- Disposal of Domestic Birds Infected by Avian Influenza-An Overview of Considerations and Options. USEPA. August 11, 2006. See appendix D for extensive list.
 - www.epa.gov/epaoswer/homeland/flu.pdf

Local Resources

- Local Composter of poultry litter and mortalities: Ron Ditson,
rditson@renewablefiber.com
- CSU:
 - **Kristy.Pabilonia@colostate.edu**
 - Jessica.Davis@colostate.edu,
 - Kathy.Doesken@colostate.edu

CSU and state resource person: Dr. Kristy Pabilonia

- **Veterinary Diagnostic Laboratory**

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Questions & Discussion

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