HPAI Disposal Team Report
Team Members

- Redding District: Mike Spiker
- Modesto District: Guy Gary, Randy Anderson, Ken Takeshita, Elsa Valdovinos
- Tulare District: Greg Sammons, Brian Colegrove, Bill Garlick, Elliot Elkins
- Sacramento: Dennis Wilson
- CalRecycle liaison: Diane Vlach
Mission

- Acquire and or develop materials to aide in poultry carcass disposal
  - Materials to help producers
  - Materials to help responders
Efforts Driven by Disposal Priorities

- For infectious diseases on-site > off-site
- Theoretically incineration is best for dealing with dz
- Given circumstances- flammable structures, air restrictions- composting is best on site option
- Recognizing not all facilities can accommodate on-site composting offsite disposal will be considered on a case by case basis and by the dynamics of the event.
Note: The above flow chart offers basic guidance for emergency carcass disposal decisions. Actual disposal methods will be determined on a case-by-case basis, and the decision-making process will likely involve additional factors.
Natural Rendering: Composting Poultry Mortality

The Emergency Response to Disease Control

Select Site
1. Select a site that is well-drained and not subject to flooding. Keep piles away from homes and businesses and from water sources, streams, seasonal seeps in other landscape features that indicate the site is hydrologically sensitive.
2. When implementing in-house composting, the poultry house will be vented naturally, but mechanical ventilation should be turned off.

Good Housekeeping
3. Site maintenance is an important aspect of composting. It is important to keep the site well maintained and free of animal waste.

Preparations
4. Push and feed off the side of the barn. Place in 10 inch deep beds of coarse wood shavings. A 1 inch wire mesh (clay) keeps birds and rodents from the bedding and ensures proper ventilation, and to allow air space between the layers.

Build Pile
5. Add a 1.1-15 inch layer of litter and bedding, then cover with a 1.18-15 inch layer of wood shavings or other carbon sources.
6. Add another layer of litter and bedding until the entire area is covered with layers high and long as needed.

Check Temperatures
9. Monitoring is the only activity that will occur. Temperatures will vary, and the compost will be used to record temperatures and should range from 121°F (50°C) to 127°F (52°C) during most of this time period.
10. The primary concern is that the compost must reach thermophilic temperatures, which will take 30-45 days. During this time, monitoring, agitation, or active aeration should occur.

Moisture Note: If litter is very dry, add moisture to the layers as you are building them. The compost heap will be at 50% moisture.

Benefits of Composting
- Pathogens that occur in thermophilic compost helps control pathogens, viruses and other disease organisms in disease outbreaks.
- Can be done any time of the year, even when the ground is frozen.
- Can be done with equipment available on small farms.
- Relatively low cost.
- All types of animals can be composted.
- Egg waste and bedding waste can be composted.
- Relatively few requirements for labor and management.
- Economical.

With an Asian influenza outbreak, the birds should be moved as little as possible to ensure disease containment. Litter and other organic material should be composted until the testing of the birds for disease distribution. Enriching houses will be out of production in order to ensure that the first active stage of composting can be completed. After the compost is removed from the building and placed in curing piles, the building can then be totally disinfected. It is not feasible to compost in-house, composting should occur as close as possible to the site of operation.

For additional information see: Natural Rendering: Composting Poultry Mortality web site: http://www.cornell.edu/beta/edcfa.htm
Cornell Waste Management Institute - e-mail: cwm@cornell.edu
New York State Department of Environmental Conservation - http://www.dec.state.ny.us
Department of Crop & Soil Sciences
La Respuesta de Emergencia para el Control de Enfermedades

Selección del Sitio
1. Seleccione un sitio que esté bien drenado y no esté predispuesto a inundaciones. Montre los sitios con manchas de comida desgastada, espacios, depósitos de agua, pozos, manantiales e áreas que puedan ser hidrologicamente sensibles.

2. En la implementación de compuestos industriales, la ventilación de la solución debe ser efectuada y la ventilación de la solución debe estar prevista.

Buenas Limpiezas
3. La limpieza del estanque es muy importante en el control de insectos, las limpiezas de los animales controlan, ayude al control del cebador y manteniendo buenas relaciones con sus vecinos.

Prepare La Casa
4. Remueva las basuras y almacene en un lugar del estanque. Cepille el fondo del estanque de 15 pulgadas de distancia a la cara, el agua debe ser de 15 a 25 veces al año (dependiendo en la estructura y limpiezas de espacios), vacúe y regrese el espesor y profundidad.

Armarse La Pila
5. Añada una dosis de 15-15 pulgadas de galletas y aves mueren, luego otra con una copa 15-15 pulgadas de comida de galletas y otros de la fuente de comida (paja, ensilaje).

6. Añada una copa de galletas y aves mueren hasta que la hierba sea de dos a tres veces el área y tan largo como sea necesario.

En caso de un huevo de grasa insecticida, las aves deben moverse lo menos posible para detener la propagación de la enfermedad. La galleta y otros materiales orgánicos deben ser compostados con las aves muertas para ser deshidratadas. Las aves deben ser dispuestas en un área de granja y el compostaje debe ocurrir en un lugar lejos de las otras zonas de producción.

La Sheba va bien recluido al edificio para el proceso de supervisión. El compostaje es debido a un proceso de enfermedad, estructuras de laboratorio para la detección de la enfermedad son necesarias.

Dejar Reproducir a 6-4 Meses
9. Deje reproducir los huevos.

Reciclar El Material
10. Recicle el material como un hecho para nuevas historias de compuestos de aves muertas.

Ventajas de Compostaje
1. La destrucción de patógenos ocurre durante la etapa de compostaje. El compuesto ayuda en el control de patógenos, vías de escape de microorganismos y brotes de enfermedades.
2. El compuesto puede ser utilizado como fertilizante en el cultivo de las plantas.
3. Los compuestos de animales pueden ser compostados.
4. Los desechos de heno y residuos de compostaje pueden ser compostados. Los requisitos de las plantas y desechos son mínimos.
5. Económico.
Please note: These procedures may be revised as the situation develops.

EXECUTIVE SUMMARY OF THE METHOD

Composting is a biological heating process that results in the natural degradation of organic resources (such as poultry carcasses) by microorganisms. Composting has been successfully used throughout the United States for nearly two decades to control outbreaks of low pathogenicity avian influenza (LPAI) and highly pathogenic avian influenza (HPAI). Composting can be effective with most bird types and poultry house designs.

Microbial activity within a well-constructed compost pile can generate and maintain temperatures sufficient to inactivate the avian influenza virus. The effectiveness of this virus inactivation process can be assessed by evaluating compost temperatures and the shape of the time and temperature curve, visual observation of carcass decomposition, and the homogeneity of the compost mix.

Successful mortality composting requires the following:

1. A qualified composting expert to guide windrow construction.
2. Trained equipment operators.
3. Sufficient carbon, water, and space.

If any of these components is lacking, composting is NOT recommended.

Prepared by members of the USDA Composting Technical Committee: Lori P. Miller, Gary A. Flory, Robert W. Peer, Eric S. Benfield, Mark L. Hutchinson, Mark A. King, Bill Seekins, George W. Malone, Joshua B. Payne, Jerry Floren, Edward Maler, Mary Schwarz, and Jean Bonitiel
Help We Need From You

Questions to assist with determining whether burial, composting or incineration can be used.

General Questions
- Type(s) of bird(s) on site ____________________________?
- Number and average weight (at their maximum weight) in each house:
  - ____________________________
  - ____________________________
- Other materials that might need disposal and volume (litter, feed, etc.)?
- Number of entrances and exits to location ________________
- Proximity to neighbors:
  - Residential ____________________________
  - Residential with backyard poultry ____________________________
  - Poultry operations ____________________________
  - Other livestock operations ____________________________
- Proximity to waterfowl refuge(s)? ____________________________
- Proximity to water bodies not on the premises ____________________________
- Known scavengers that might affect disposal options (birds, coyotes, rodents, etc.)
__________________________________________________________________________
Help We Need From You

- Questions to assist with determining whether burial, composting or incineration can be used.
  - Depopulation Questions
  - Number and dimensions of houses? __________________________________________________________
  - ______________________________________________________________________________________
  - ______________________________________________________________________________________
  - ______________________________________________________________________________________
  - ______________________________________________________________________________________
  - ______________________________________________________________________________________
  - Style(s) of houses ______________________________________________________
  - Species, number of birds and finished age/weight per house
    ______________________________________________________________________________________
    ______________________________________________________________________________________
    ______________________________________________________________________________________
    ______________________________________________________________________________________
    ______________________________________________________________________________________
    ______________________________________________________________________________________
  - Usual method used for removing birds from houses at marketable size or at end of production life.
    ______________________________________________________________________________________
Help We Need From You

- Questions to assist with determining whether burial, composting or incineration can be used.

- Composting
  - Is in-house composting feasible? Why, why not (type of production systems, obstacles in house, etc.) ________________________________
  - Outside Composting: Is there a concrete pad or other hard surface that could be used as a pad and what is the size of this area? __________________________
  - Estimate of space and “carbon” needed to compost (can use Appendix B below and/or MSU Extension Calculator) _________________________
  - Materials that could be used in composting process and volume (feed, litter, etc.)? ________________________________
  - Issues that might affect composting include (relation of wells and water bodies to compost site, prone to flooding, etc.)? ________________________________
Timelines

- **SOPS**
  - Composting – Written/ Now being edited
  - Landfill – Written/ Now being edited
  - Burial – Written/ Now being edited
- **Spanish Version of Composting Guide** – Done
- **Questionnaire written**– needs to be edited/ distributed (End of December?)
  - How do we want to distribute them?
  - How would Industry like to proceed on this?
    - Any volunteers to look at the Questionnaire, to distribute it?
    - How are you most comfortable in handling the questionnaire information?
      - Fill out ahead of time but make it available at time of need?
Other Things That Might Help?

- List of compostable materials (bulking materials/ carbon sources) that could be used with carcasses?
  - Contacts for such material?
- List of composting experts in the State that might be contracted?