

# Developing a Catastrophic Mortality Plan for Broiler Farms

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## Introduction

- ❖ *Midst of a crisis is not the time to develop a plan! **Having a plan avoids critical delays and costs!***
- ❖ Components of a plan:
  - Develop and post an emergency contact list.
  - Take preventative measures to avoid potential losses.
  - Rapid response needed to minimize losses and costs.
- ❖ Post a list of the following contacts for all to access:
  - Poultry company (growout manager/flock supervisor).
  - Fire department (911); beware of potential media coverage/interview.
  - Electrician, generator technician, plumber, well driller, poultry equipment company.
  - Resource list for equipment, trucks, labor, supplies...
  - DDA (Bob Coleman) on losses and disposal method (Need to follow NRCS CNMP).
  - Insurance company

## Disposal Option Considerations

- ❖ Disposal method depends on:
  - Type of loss (heat/suffocation, structural damage, disease, chemical residue). See Table 1 for types of losses and potential disposal options in Delaware.
  - Bird age and extent of losses in the house(s).
  - Condition of the mortality.
  - Farm resources (amount of litter, manure shed space, labor/equipment...).*Important to have flexibility in disposal options!!!*
- ❖ Other important considerations in options for depopulation and disposal:
  - Human safety.
  - Bird welfare.
  - Food safety.
  - Costs.

## Heat and Suffocation Losses

- ❖ Improvements in equipment, air speed and evaporative cooling systems have greatly reduced losses due to high summertime temperatures.
- ❖ Suffocation losses do to power outage are the #1 cause of catastrophic mortality!
  - Birds do not die do to lack of oxygen or high carbon dioxide/ammonia concentrations; they die due to heat stress!
  - Without ventilation the rise in temperature and relative humidity will induce heat stress within 10 minutes. Rapid response to restore ventilation is critical in avoiding losses.
- ❖ Measures to prevent potential suffocation losses:
  - Test alarms, generator and alarm communications; generator maintenance (ie. battery, radiator, fuel).
  - Annual electrical inspection.
  - Fan and cooling system upkeep.
- ❖ Rapid response measures to minimize losses and costs:

- Knowledge and backup plan to restore power (ie. generator).
- Emergency call list available to all farm hands.
- Take measures to prevent carcass spoilage (open house or run fans after power restored to cool down the house and remove gases). Schedule disposal within 24 hours.
- ❖ Disposal options for heat and suffocation losses:
  - Composting mortality has been the method of choice but rendering is a new option.
  - Composting location. 1. Manure shed (need approval), 2. Outside windrow (approved site), 3. In-house, and 4. Commercial compost site.
  - Composting basics using the mix and pile method (preferred method):
    - Scoop birds and litter, need 2 parts litter to 1 part bird by volume.
    - Place mixture on base layer of litter/bedding in shed or outside windrow or in-house.
    - Pile height 4-5 ft for windrows; height in shed often limited by type of loader (telescopic loaders work best).
    - Cover mixture with litter/bedding; also use a breathable cover for outside windrows.
    - Must turn piles to complete tissue breakdown.
    - Estimated cost for composting a 50 ft x 500 ft house with market age birds is \$1500 to \$2000. May recoup part of this cost IF the compost is marketable.
  - Rendering is a new option for catastrophic losses:
    - Greener Solutions has a contract with a rendering plant(s) to provide mortality, including mass losses.
    - No or minimal cost for service if you are a Greener Solution customer but others need to also explore this cost-effective option.
    - Must contact Greener Solutions immediately following a loss and take measures to avoid carcass spoilage. They can accommodate spoiled carcasses but a higher cost and disposal method.

#### Structural Damage: Fire

- ❖ Measures to prevent fire losses:
  - Annual electrical and gas inspections.
    - Electrical issues leading cause of fires. Need to keep fixtures /connection clean as possible. Combination of dust, ammonia and moisture ideal conditions for shortages with end chambers a particular concern.
  - Rodent control program to prevent wire damage.
- ❖ Measures to take in the event of fire:
  - Use a fire extinguisher for “small” fires.
  - Call fire department (911), then other appropriate contacts on the list.
  - Secure house by turning off the electric/fans and gas.
  - Restore power/ventilation ASAP to minimize losses.
- ❖ Carcass disposal of fire damaged houses:
  - For partial house loss.
    - Consider human safety, bird welfare and food safety issues.
  - For complete loss:
    - Remove metal and wood
    - Take litter, carcasses and plastics to landfill (need special waste approval, cost \$85.50/ton).
    - OR compost “clean” litter and carcasses but may have issues with farmers accepting contaminated material.

### Structural Damage: Snow and Ice

- ❖ Measures to prevent/minimize structural damage:
  - Structural inspection of walls, missing/damaged support/knee bracing and joint bracing
  - Prepare for potential prolonged power outage (particularly ice storms).
  - Action plan to reduce load on roofs during a storm event.
    - Open attic doors to aid in melting snow/ice on roofs
    - Rake snow from roofs evenly on both sides
    - Lower feed lines

*Human safety should be first priority!!!*
- ❖ Depopulation and disposal of snow/ice damaged houses:
  - *Work with your poultry company!*
  - Resources needed and procedures:
    - Track loaders to clear driveways to gain access to houses.
    - Excavator to remove roof to access birds.
    - Catchers to depopulate and remove dead.
    - Trucks to transport dead.
- ❖ Carcass disposal of snow/ice damaged houses:
  - Compost in sheds or outside windrows, debris a potential issue for land application of compost.
  - Landfill (Note: in some widespread natural disasters the tipping fee may be waived).
  - Render (Greener Solutions).

### Structural Damage: Wind (Hurricane)

- ❖ Measures to prevent/minimize losses:
  - Generator maintenance and standby generator.
  - Fuel on-hand to run generator for 48 hours plus means of getting additional fuel as needed.
  - Equipment and supplies (ie. chainsaws) to clear access roads.
  - On-farm drainage maintenance.
  - A plan on how to communicate with your poultry company.
- ❖ Depopulation and disposal of wind damaged house:
  - Work with your poultry company on resources and procedures:
    - Loader, excavator and trucks.
    - Catchers to process/transfer live birds OR depopulate/recover mortality.
- ❖ Carcass disposal of wind damaged house:
  - Compost in sheds or outside windrows, debris a potential issue for land application of compost.
  - Landfill (Note: in some widespread natural disasters the tipping fee may be waived).
  - Render if carcasses are “fresh”.

### Natural Disaster: Floods

- ❖ *Often days and sometimes a week(s) before water recedes to allow for disposal. Litter and carcass decomposition is advanced and very offensive.*
- ❖ Measures to prevent/minimize losses:
  - Maintain good drainage at the farm site.
  - Seal/barricade end doors to reduce water entrance.
  - Raise feeders to avoid having to remove/clean each feed pan.
- ❖ Resources for composting flooded houses:
  - Track loaders and trucks.
  - Dry bulking agent (requires twice the litter depth by volume).

- Hydrated lime for fly and odor control.
- ❖ Composting location – *need flexibility in disposal plan and location:*
  - In-house.
  - Manure shed.
  - Outside windrow (approved site).  
*Excluding dry bulking agent (ie. shavings at ~\$10,000/house), material handling cost for composting is an additional 30% higher.*
- ❖ Composting procedure:
  - “Soupy” nature of litter with carcasses prevents scooping up the mass.
  - Must blend bulking agent with litter for material handling and facilitate drying.
  - Ring outside windrows with bulking agent to capture potential leachate.
  - Must have turn piles to facilitate drying and complete tissue degradation.
  - Salt water floods may pose an additional concern with farmers willing take this compost for land application.

Summary

- ❖ Prepare and post an emergency call list.
- ❖ Take preventative measures.
- ❖ Rapid response to minimize losses and costs.
- ❖ ***Work with your poultry company, they can help minimize your burden and stress.***

Table 1. Delaware Disposal Options for Catastrophic Mortality Losses.

Method →	Bury	Landfill	Render	Compost
<b>Cause</b> ↓				
<b>Heat/Suffocation</b>	No	?	?	Yes
<b>Structural Damage</b>	No	?	?	?
<b>Floods</b>	No	?	No	Yes
<b>Disease Control*</b>	No	?	No	Yes
<b>Residue*</b>	No	Yes	No	?

\*Carcass disposal for disease control such as avian influenza and chemical residues have been rare and often coordinated by the State or poultry company.