

FAD PReP/NAHEMS Tactical Topics:

Disposal

Information is based on the **Foreign Animal Disease Preparedness and Response Plan (FAD PReP)/National Animal Health Emergency Management System (NAHEMS) Guidelines: Disposal (2012)** to be used in training or during an animal health emergency. References to the Guidelines sections are provided in parenthesis for more detail.

Introduction/Overview: The overall goal of disposal procedures during an animal health emergency is to eliminate all animal carcasses and related material in a timely, safe, biosecure, aesthetically acceptable, cost effective, and environmentally responsible manner.

FOR QUESTIONS REGARDING DISPOSAL PROCEDURES: Contact your immediate supervisor. Follow chain of command.

Responsibilities for Disposal within the ICS – Disposal Group (2)

- Disposal Group Supervisor: Organizes and directs disposal activities as part of Operations Section. Prepares site-specific plans, determines personnel and equipment needs, establishes training requirements, ensures compliance with regulations, and coordinates disposal activities with other work groups.
- Disposal Team Leader: Supervises team members. Cooperates with other response groups. Ensures proper training and assignment of personnel, and the implementation of safe procedures.
- Disposal Team Members: Perform on- and off-site disposal activities for carcasses and related materials.
** The Disposal Group works closely with the state and federal animal health officials, environmental protection agencies, and other personnel responsible for appraisal, compensation, euthanasia, quarantine, biosecurity, and cleaning and disinfection involved in the emergency response.

Disposal Goals for All Methods (1)

- Consult qualified experts for guidance on environmental issues (ground, water, and air contamination).
- Identify appropriate methods of disposal based on biomass and circumstances.
- Identify suitable locations for disposal activities and consider all transportation issues.
- Utilize supplies, materials, and equipment best designed for the disposal assignment.
- Adhere to all relevant biosecurity and cleaning/disinfection procedures to contain the pathogen.
- Dispose of materials in a timely manner – ideally, dispose of carcasses within 24 hours of depopulation.
- Develop a workable timeframe for appraisal, depopulation, and disposal to avoid delays and exceeding capacity.
- Coordinate disposal of the final product following processing (e.g. composting, rendering, incinerating).
- Safeguard the environment and meet regulatory requirements.
- Conserve meat or animal protein if logistically supportable from a biosecurity viewpoint.
- Perform duties with responder safety as first priority.

Disposal Methods (3)

- Composting: Indoor or outdoor aerobic process that promotes decomposition of carcasses. (3.2)
 - Place carcasses between 2 feet thick layers of carbon rich organic/plant material.
 - Carbon rich plant material (sawdust, wood chips, ground straw) serves as co-compost and cover.
 - Use potential fomites such as on-site feeds, silage, hay, manure, and bedding as co-compost.
 - Protect the compost pile with a thick cover of co-compost to retain heat and contain the pathogen.
 - Attain the desired core temperature, between 135-140 degrees F, within 15 days of compost initiation.
 - Minimize turning the pile to prevent dispersion of contaminated material or aerosols.
 - Maximize completion time – based on carcass size, co-compost, and environmental conditions.
- Rendering: Off-site process that uses heat to convert carcasses into protein based solids, meat and bone meal, and liquefied fat/tallow. (3.3)
 - Arrange for biosecure transportation of carcasses to the rendering facility.
 - Coordinate temporary storage, if necessary, to minimize biosecurity risk and carcass decomposition.
- Landfill/Burial: Placement of carcasses and/or waste materials in landfills, trenches, or pits. (3.4)
 - Choose the most appropriate available landfill, or burial site and method.

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- Give priority consideration to municipal solid waste landfills, based on containment systems.
 - Include procedures for leachate collection, gas recovery, groundwater monitoring, and sample analysis in site-specific plans for unlined burial.
 - Consider the cost of potential environmental remediation with unlined burial techniques.
 - Thermal Methods: High-temperature combustion to destroy animal carcasses and associated materials. (3.5)
 - Recognize fixed-facility incineration may have limitations of availability and capacity.
 - Be cautious in the use of open-air/uncontrolled burning (if allowed) to protect air quality and the safety of responders.
 - Ensure sufficient fuel is on hand or available to accommodate air-curtain incineration.
- ** Arrange for cleaning and disinfection of vehicles after delivering each load to all off-site disposal locations.



Disposal Method Criteria (4)

- Expect to employ a variety of disposal methods throughout the response.
- Implement disposal plans specific to species, biomass, site, pathogen, environment, and public health.
- Include environmental regulatory agencies and stake holders in disposal site selection.
- Use the following considerations when making disposal method and site selections:
 - Number, Species, Types of Animals: Consider the overall biomass of the material.
 - Regional Limitations: Consult with local, county, state, and federal environmental officials regarding geophysical considerations and confirm compliance with regulations.
 - Equipment and Personnel: Determine needs to handle carcasses and material without delay.
 - Biosecurity Protocols: Protect unaffected animal populations and prevent zoonotic exposure.
 - Safety Considerations: Consult the safety officer to ensure that protocols avoid responder injury.

Classifying Waste Materials for Disposal (5)

- Consult experts to properly classify waste materials to ensure appropriate disposal and transportation methods.
- Develop procedures for all common waste material types produced during an animal health response include:
 - Animals and animal by-products, bedding, manure, hatchery waste, hay, grain, silage, equipment, supplies (sharps and PPE), materials, buildings, and structures.

Environmental and Biosecurity Considerations (6)

- Include potential negative environmental impacts and biosecurity factors in disposal planning and response.
- Environmental Considerations:
 - Consider potential negative environmental effects such as air and water quality, and soil integrity.
 - Protect wildlife and domestic scavengers from consuming or being exposed to carcasses associated with infectious materials or pathogens.
 - Apply waste to land after it is processed and considered non-infectious, if allowed by law.
- Biosecurity Considerations:
 - Burn, bury, compost, or landfill contaminated materials depending on the pathogen of concern.
 - Seek expertise in disinfection prior to processing liquid wastes such as milk, dairy, wastewater, or fluid from lagoons.
 - Plan appropriately for biosecure disposal of manure, litter, and slurry infected or exposed to the pathogen of concern.
 - Fence off or secure manure and litter that cannot be burned or buried to prevent pathogen spread.
 - Practice proper biosecurity during transportation and handling of animal carcasses and materials to off-site locations to avoid further transmission of the disease pathogen.