

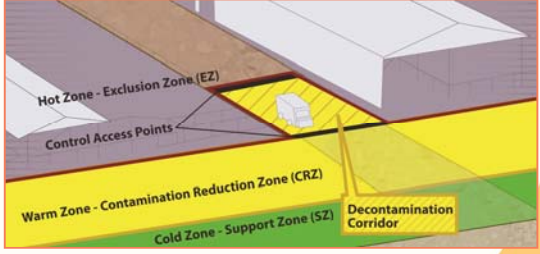


## Cleaning and Disinfection

### Premises



## Biosecurity Work Zones



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## Basic C&D Protocol


- **Cleaning**
  - Dry Cleaning
  - Washing
  - Rinse and dry
- **Disinfection**
  - Application
  - Contact Time
  - Rinse and dry
- **Downtime**

Cleaning	Dry Clean
	Wash
	Rinse & Dry
Disinfection	Application
	Contact Time
	Rinse & Dry

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## Preparation


- Turn fans off
- Disconnect electricity
- Remove sensitive equipment
- Alternative electrical supply for C&D equipment and lighting



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## Vectors


- To avoid transfer of pathogens
  - Detect and remove disease vectors
  - Seal rodent entrances
  - Remove and prohibit wild bird nesting areas
  - Eliminate insect breeding areas



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## Preparation



- **Footbaths**
  - Set up at entrance/exits
  - Ineffective if used incorrectly
    - False sense of security
    - Should not be sole process of disinfection
  - Use fresh solution
  - Allow contact time



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### Disinfectant Preparation

- Use according to product label
- Only EPA-registered or approved products
- Prepare fresh solutions
  - Old solutions may have reduced efficacy
- Test kits can help check concentration

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### Basic Protocol

- Systematic manner
  - Start at back and work toward front
  - Start at ceiling and work down walls
  - Small sections at a time
  - Work toward the drain
- Use marking tape to indicate completed areas

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### Dry Clean

- Use brooms, shovels, brushes, scrapers
- Moisten to control dust
- Remove
  - Visible organic material
  - Washable items
  - Rotten wood fixtures
- Scrape windowsills, floors
- Dispose of debris in biosecure manner



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### Wash and Rinse

- Wash area with detergent using sprayer, scrub brush
  - Avoid high pressure if highly contagious
- May need pre-soaked
- Scrubbing may be necessary
- Steam
  - Effective for cracks, crevices, pipework
- Rinse with clean, warm water
- Allow to dry overnight

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### Disinfection

- Apply EPA-registered disinfectant
  - Allow appropriate contact time
  - Must remain “wet”
  - Reapply if needed
- Rinse with clean, warm water
- Allow to air-dry

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### Building Interior


- Ensure C&D of interior components
  - Water dispensers, troughs, augers, fans
- Electrical equipment
  - Turned off first
  - Wipe clean, sanitize



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### Building Exterior

- Width will vary with pathogen
  - May be as wide as 10 feet
- Flame gun
  - Wet surfaces prior to distinguished areas treated
- Fan inlets
  - EPA-registered disinfectant with low pressure sprayer



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### Material Composition


- Concrete = porous
  - Difficult to clean
  - Registered product, flame gun
- Metal = easier to clean
  - Some products corrosive
  - Flame gun
- Wood = very porous
  - Discard if possible
- Soil, sand, clay
  - No environmentally safe product



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### Downtime


- Free of any animals or activity
- Reduces pathogens by drying
- Time varies based on pathogen
  - Three times expected incubation period
- Block of area



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### Slurry Pits

- Decontaminate by chemical process that alters the pH
  - Vigorous stirring
  - Maintain pH for several days
- Precautionary measures
  - Minimum of 2 personnel
  - Wear respirators, safety harnesses, lifeline
  - Area well ventilated due to toxic gases produced with agitation




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## SPECIFIC PRODUCTION SITUATIONS

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### Poultry Premises


- Egg processing equipment
  - Egg belts, flats, buggies, packing machines
- Nesting boxes
- Egg storage rooms
- Open floor areas
- Curtains



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### Dairy Facilities


- Milking equipment
  - Milking units, strainers, coolers, bulk tank
  - Removal of milk-film or deposits
- Input from manager, personnel may be useful
- Products must specifically list milking equipment



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### Swine Facilities


- Special items
  - Farrowing pens, slats, slurry alleys, pits
  - Electrical equipment
  - Bars, crates, gates
- Clean and disinfect without leaving residual chemicals
- Phenolic disinfectants should be avoided



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### Equine Facilities


- Equine facilities highly variable
  - Products labeled for wood, concrete should be applied once organic debris removed
  - Special attention to metal bars on stalls
  - Flame gun for non-flammable surfaces



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### C&D Equipment


- Equipment used for C&D procedures must also be either cleaned and disinfected before reuse or properly disposed of



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### Safety


- Chemical Hazards
  - Skin, eye, respiratory irritation
- Physical Hazards
  - Slips, trips, falls
  - High pressure sprayer



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### Environmental Hazards

- Runoff must be avoided
  - Infectious material
  - Chemical solution
- Toxic to aquatic organisms
- Further spread of pathogens



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## Evaluation

- Areas properly cleaned/disinfected
- Personnel aware of/implementing C&D measures
- Proper disinfectant selected
  - Appropriate concentration
  - Correct contact time achieved
- C&D Waste
  - Minimize or avoid environmental impact

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## Acknowledgments

Development of this presentation was by the Center for Food Security and Public Health at Iowa State University through funding from the Multi-State Partnership for Security in Agriculture

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